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MONETARY INNOVATIONS AND DIGITAL ECONOMY

This article discusses the main changes in the field of digital and cryptocurrencies, as well as their interpretation from the standpoint of the common theory of money (e.g. the definition of monetary functions). The consequences of the central banks' monetary policies as well as their reaction by launching their own digital currency (central bank digital currency/CBDC) have also been dwelt upon. The possible changes in the global currency system have been outlined. Special attention has been paid to the development of higher economic education as a result of the new monetary and financial technologies and the digital economy. These topics have been set forth against the background of the experience of different countries (with a particular emphasis on Russia's practice), as well as by summarizing leading research and publications in the field.
JEL: A2; E40; E5; F02; O3

1. Introduction

In the years since Jean Bodin (XVI c.), the first theorist of state sovereignty, and over the time of the subsequent centuries in the recent history, the human race has managed to grow accustomed to the habitual functions of the state - power, administration, border protection, policing, tax collection, to mention but a few. State functions also embrace money issue - printing and control over the national currency circulation, control over the banking system flows, performed via the monetary policy (the interest rate and exchange rate policies).

Today, however, this money functions is drastically changing - money issue and money creation are passing from the state and the banking system to virtual structures, physical parties, and new forms of payment communities. The consequences of the said process are difficult to assess, but cannot be ignored any longer. According to the Bank of France

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estimates, by January 2018, the volume of cryptocurrencies had reached 330 billion euros (including: 35% in bitcoins, 20% in ethereums, and 10% in ripples). To put that in the context of the cryptomoney supply volume, the M1 aggregate of the Eurozone reaches 7,500 billion euros, while M1 in the US makes 3,500 billion dollars [Banque de France, 2018, 3][4]. As to the statistics by the IMF and coinmarketcap.com, by late April 2018, the world had tallied 1500 cryptocurrencies (of which bitcoin, ethereum, and ripple are the most common) [Bouveret and Haksar, 2018, 3]. Despite statistical difficulties, when accepting cryptocurrencies as financial assets, as crypto assets (with all their markets), a strong increase in their capitalisation is clearly seen. Thus in 2019 of the thousands of cryptocurrencies, 35% were quoted on different trading platforms, of which 5% every day. Thus in September 2018 they were 2,456 and in 2019 700 new cryptocurrencies were added (Chimieni, and al., 2019). It is true that after the peak in 2018, there is a definite decrease in the volumes of crypto assets in 2019, but no doubt the tendency is towards an increase of their use.

Cryptocurrencies are not a monetary unit of a particular state. This is, in essence, the money of a group of private individuals or legal entities that have decided to use them in mutual settlements. The legal status of this phenomenon is not formalized, so cryptocurrencies are not yet taxed in any country of the world, just like the income received as a result of transactions of these payment systems. As a reaction to the numerous attempts at emitting global cryptocurrencies (on the part of Facebook as well) the central banks of the developed countries have recently spurred on their own projects of emitting central bank digital currency/CBDC (BIS, 2018).

In this article, mainly form Russian perspective, we will successively consider : (i) some basic theoretical problems regarding the definition of cryptocurrencies, discussions on this topic and the response of state authorities to the cryptocurrencies distribution, and especially the current discussion on central bank digital currency (ii) the place of these new monetary instruments in the evolution of the international monetary architecture, and finally, (iii) the response of the education and higher education sphere to the development of new monetary instruments in the digital economy.

We start with some basic theoretical problems related to the cryptocurrencies nature.

2. Theoretical Aspects of Cryptocurrencies Development

The focal point in the theoretical dispute over cryptocurrencies is the answers to two basic questions – whether these new instruments can be identified as money and whether they perform the money functions? In fact, the answers depend on what the purport of money is from our perspective and what theory of money we adhere to. In this regard, one must bear in mind that the very nature of money changes, evolves. We could suppose in fact that the very nature of money change.

[4] Currently, there are thousands of cryptocurrencies in the world, but only about 240 crypto assets, whose capitalization exceeds 8 billion US dollars, can qualify for the status of real virtual payment systems.

Some economists flatly attribute the new forms of cryptocurrency to financial assets, while the discussion of monetary functions appears irrelevant or minimized for them. 2018 has seen a number of analytical documents by central banks of developed countries being published, in particular, the documents of the Bank of France and the Bank of England, which detail the problem of how cryptocurrencies perform and modify the basic and generally accepted functions of money. With some difference in detail, both documents emphasize that cryptocurrency performs the functions of money that are known to us (standard of value, unit of account, means of exchange, means of hoarding), but in a limited, incomplete, or inefficient manner. In 2019, the ECB published a document which was one of the first attempts at thoroughly studying crypto assets. It gives a definition and outlines the main problems facing the quantitative and statistical measurements of crypto assets. The ECB has chosen to define crypto assets as "a new type of asset recorded in digital form and enabled by the use of cryptography that is not and does not represent a financial claim on, or a liability of, any identifiable entity." (Chiemieni and Al., 2019, 3). According to the ECB, the main problem is the lack of a fundamental value of this money[5]. The risks of the crypto assets for the financial system and the real sector, the absence of a collateral, of applicable laws, and a clear institutional and regulatory environment have been analyzed in detail. At the same time, the ECB has attempted to set up a statistical surveillance system not only as regards the volumes but also of the prices of these assets at the different markets. The flows of these assets do not go through the official data collection system and one cannot get an idea of their volumes and of eventual consequences thereof. According to the ECB „Overall, available data on crypto-assets are neither complete nor fully reliable for the purposes of monitoring market trends to the degree of detail necessary to gauge their risks. Moreover, they only allow the monitoring of global trends with very limited country segregation“ (Chiemieni and al., 2019, 7).

However let’s go back to the functions of money. It is critical to underscore that among economists there has always been and continues to be a discussion about how to technically determine the purport of money, which functions are essential for money and which are of secondary importance [Nenovsky, 2009]. In terms of determining functions, both documents by these central banks should be perceived as manifestations of only one particular monetary theory (in this case: the state and banking theory of money). In fact, the analytical reports by the two the central banks (those of England and France) express primarily the interests and points of view of their senior members and the state as a whole, for whom monetary and financial innovations have always been considered a danger. E.g., these documents assert that cryptocurrencies cannot function as a store of value (since their exchange rate is highly volatile in relation to traditional national currencies).

Cryptocurrencies are also held to perform the medium of exchange function in a limited and inefficient manner. There are high transaction costs and, above all, energy costs. E.g., in December 2017, one operation with the bitcoin "cost" 215 kW, as well as took a long time for coordination (in comparison with the Visa card). Although, on the other hand, it can be argued that to transfer small amounts of money, the transaction costs of

[5] We consider that to be disputable from a methodological point of view but it is not possible to discuss this issue here.

cryptomoney are lower. [He, 2018, 14], which can contribute to the development of financial integration of the poor population segments and social economy.

Finally, cryptocurrency does not function as a means of accounting (unit of account) and means of payment (these two functions are still performed by the legal tender money) [Bouveret and Haksar, 2018, 27]. Additionally, central banks often note in regard to the cryptocurrency, including the bitcoin, that cryptocurrency is more like financial assets than genuine money. However, the volume of these financial assets is still insignificant. For example, the capitalization of these assets in 2018 was close to 1% of the world GDP, while the capitalization of credit derivatives and swaps alone was close to 100% of the world GDP [Carney, 2018, 21]. From this perspective, electronic monetary innovations are not yet a source of instability in the financial system. One of basic accusations against cryptocurrencies is the risks of fraud, piracy, and the use of this money to finance terrorism and other phenomena dangerous to society [Banque de France, 2018, 2, 13].

At the same time, a number of authors, analyzing the arguments as to the origin of money from the perspective of the so-called "chartal theory of money" defined by G. Knapp, claim that cryptocurrencies can be defined as money and can serve as a supplement to the legal money [Dubyansky, 2017]. Cryptocurrencies are manifestation of particular "monetary communities" (according to G. Simmel). The functions of money as a means of exchange and as a unit of account are split (accounting is done through conversion into recognized or legal tender money). This duality does not cancel the monetary nature of cryptomoney, rather it only brings it closer to the two-fold character of the money functioning - like in the Middle Ages. Then, accounting money and medium of exchange was physically separated, and the connection there between was regulated by so called state tariffs (exchange rates) [Nenovsky, 2009].

Turning again to history of money, one comparison is often down, considered sometimes in positive and sometime in critical terms. It is a matter of comparing cryptocurrencies with the gold standard. Some economists speak of a "digital, electronic gold standard", a return to commodity and physical money (and of a paradoxical result - overcoming problems of credit money and payment accounting) [He and all, 2017; He, 2018]. In this regard, it can be argued that monetarism and liberal monetary theory provide the most appropriate explanations, since cryptocurrencies are a creation of both decentralized and spontaneous economic actors. The fact of restricted cryptocurrencies supply is reminiscent of the gold standard, when money supply was fixed within certain limits.[6] In this regard, one of the positive aspects of using the cryptocurrency is that its rate is not influenced by political or economic conditions. The rate of the cryptocurrency depends only on the supply and demand for it. The volume of demand depends on how many goods and services can be purchased for it, and the supply is strictly limited [Lskavian and Fedorov, 2014, 47]. On the other hand, critics of the classical or "modified gold standard" automatically transfer the disadvantages of the limited supply to the sphere of cryptocurrencies [Banque de France, 2018, Carney, 2018]. But again, our attitude to cryptomoney depends on the fundamental principles of money and monetary policy, which we adhere to.

[6] Which in fact almost never took place in its pure form [8].

The similarity to the gold standard also leads to the conclusion that cryptocurrencies are inherently deflationary [He and all, 2017; He, 2018]. In fact, it is not subject to inflation, because, like gold, it is limited in quantity. It takes time and energy to produce it, as to the price thereof, it will only keep growing. As a result, economic agents will begin to spend less and hoard more, which will lead to a negative impact on the production of goods and services and people will be able to benefit only due to personal savings. As a consequence, there will be an ever smaller number of firms and people producing goods. That is why the cryptocurrency, at this stage, is not suitable for use as the major currency. However, counter-arguments are available as well. In fact there are different types of deflation, both negative and positive. And deflation, even if it exists, in the case of cryptomoney, will seem to be positive and stimulating in nature, as it will be connected with the growth of total factor productivity and the development of technologies.

The economics literature also reflects another discussion - on the causes and mechanisms of the cryptocurrency's genesis. French economists Odile Lakomski-Laguerre and Ludovic Desmedt believe that J. Schumpeter's institutional theory and the theory of entrepreneurship offer the best explanation for the cryptocurrency phenomenon (in the bitcoin case). Cryptocurrencies are considered as a complex form of technological, financial and, most importantly, social innovation. Social innovation is a manifestation of the search for alternatives to capitalism as a system, and in a sense, it is a political project (the authors sometimes talk about "crypto-anarchist" and "libertarian" approaches) [Lakomski-Laguerre and Desmedt, 2015, 2018]. A political project can be considered as a form of social and civic protest (contestation), primarily, against government central banking and bank money. These latter types of money, firstly, are associated with servicing the interests of the ruling elite, and secondly, they are considered the cause of the present-day global crisis. The new crypto money is a product of civil society, it is profoundly social in origin and in essence. In this "monetary institutionalist model", the problem of trust in money is solved differently, in this case trust takes a decentralized form, a form of consensus of those who produce and consume money. It is complemented by a source of trust, which used to be characteristic of metal money, namely, - the presence of a source limiting the money supply. This source is exogenous in relation to the monetary community. As a whole, Lakomski-Laguerre and Desmedt believe that cryptocurrencies by their nature are real, genuine money (with certain conventions, though).

Further on, we could wonder what will happen, should national cryptocurrencies be created? In this configuration, it can be assumed that individual citizens and business entities will have direct access to the Central Bank's settlement system and will be able to carry out their mutual settlements without the banking system intermediation. Under this scenario, it seems a reasonable guess to expect an opposition from the banks. We shall witness a situation with the banking system coming into conflict with civil society as to who has access to the Central Bank settlement system. It should be recalled that economists proved as far back as twenty years ago that in order to preserve the power and efficiency of the monetary policy pursued by the Central Bank and the state, all they need is to control the payment system. In this regard, they will strive to retain this control in various forms [Woodford, 2000; He, 2018; Ingves, 2018].

As a whole, cryptocurrencies are a manifestation of a new stage in the development of the economy, the so-called digital economy stage. Analyzing the conceptual approaches to the purport and functions of cryptocurrencies, we move on to accomplishing the next task of this article - to substantiate the response of the state, society, and higher education institutions to such profound changes.

3. Technological Aspects of Cryptocurrencies, State and Central Banks Reactions

Creating cryptocurrencies is primarily a technological innovation, introduction and promotion of IT-technologies that occur on computer farms by confirming transactions and supporting the network. The underlying technology is the one of the blockchain, which is represented by a decentralized system of records using cryptographic methods, monetary transaction registers [Genkin, 2018]. For it to be implemented, it is necessary to have resources such as video cards, a large amount of relatively economic power, process area with constant temperature, ventilation, etc.

As we have already noted, the main feature of cryptocurrencies is decentralization and no separate issuer, whose role by the legal tender money issue is usually played by the state national bank and the banking system as a whole. The absence of a familiar issuer makes semblance that state structures, represented by tax or judicial authorities, cannot interfere in the transactions and influence the participants of this payment system. The cryptocurrencies force of attraction is, among other things, in the inability to cancel its transfer – to block or, vice versa, force a transaction, without a special password key.

The virtual nature of cryptocurrencies is quite relative - the advent of various types of tokens, which can be credited to your online wallet, in fact, has brought about a material embodiment of the existing fiat money. The actions to participate in the circulation of cryptocurrencies begin, as a rule, with downloading a bitcoin purse, after which a person becomes a participant in the global financial network. When someone registers on a crypto exchange, he actually becomes an investor. In actual fact, the use of the cryptocurrency in widespread circulation is currently impossible. The main problem is the required process of converting, say, the bitcoin into the legal tenders, dollar, euros, rubles and settlements via a standard bank card (thus, the legal money continues to act as an accounting unit). At the same time, in many countries, bank exchange offices provide services for exchanging the cryptocurrency into the national one and those for the creation of virtual cards.

At the moment most countries do not pay serious attention to cryptocurrencies. However, a number of Asian countries, the United States, the EU, as well as Russia, have expressed their opinion on the emergence of the cryptocurrency in the world market. China and South Korea, in fact, have come to the idea of banning cryptocurrencies.

Russia opted for the idea of their heavy regulation. China, in its territory, has completely banned free circulation and exchange of the cryptocurrency, the Central Bank of Russia called the cryptocurrency a "surrogate" and "illegal money", and the citizens are advised to refrain from using it [Web Resource, Russia, 2016]. Meanwhile, Russia is discussing a draft law on cryptocurrencies. It defines the cryptocurrency, mining (cryptocurrency

mining), tokens (a digital asset that an investor receives in exchange for money) and the initial coin offering (ICO, the procedure for the initial placement of tokens). The cryptocurrency, according to the project, is a digital financial asset created and recorded in the distributed register of digital transactions by the participants of this register in accordance with the rules of keeping the register of digital transactions.[7]

In early 2017, the Russian Ministry of Finance introduced the draft law "On Digital Financial Assets". The document is based on the following provisions: 1) digital tokens, cryptocurrencies shall be regarded as "other property". This is not money in the proper sense of the word, but they can be exchanged for another product or service. Thus, the bitcoin is considered equivalent to securities, non-cash finance; 2) the ICO, according to the text of the draft law, is a kind of crowd investing. The participants of investment have to voluntarily disclose the purpose of investing funds, provide business information. 3) Everyone who passes the identification procedure shall be allowed to open accounts for the cryptocurrency exchange. 4) Mining is defined as a type of entrepreneurial activity for legal entities and independent entrepreneurs. 5) Income from trading shall be taxed. 6) The procedure for issuing tokens shall be controlled at all stages. The publication of a public offer listing all the information about the issuer and the acquirer of the asset shall be mandatory.

So far, the cryptocurrency will not be able to be granted the status of the national legal currency. In this issue, the Russian Central Bank and the Russian Ministry of Finance have not come to an agreement. In 2018 the law on the cryptocurrency in the Russian Federation will introduce the concept of the "crypto ruble" and assign it the status of a financial instrument. This asset will provide an opportunity to take control of part of the cryptocurrencies unregulated market and possibly ensure the stability of the country's economic growth. As of May 2018, the use of quasi-cash in the territory of the Russian Federation is virtually prohibited (as well as in China and many other countries). The draft law "On Digital Financial Assets", as noted above, is being discussed, however, there are already small for-profit businesses available that accept the cryptocurrency for the services and goods they provide. In April 2018, in Moscow the first apartment was sold for bitcoins. The Russian media advertise the farmer cooperative LavkaLavka selling food products, the Valenok restaurant, and some other enterprises. The most famous examples abroad are Amazon in the US and a supplier of ready-to-eat food in the European countries Takeaway.com, as well as firms in countries such as Japan and Switzerland.

As to England, in September 2014, the Bank of England designated the cryptocurrency as a significant innovation in the modern economy. This technology has the potential to substantially facilitate and simplify banking processes and reduce costs [Ishmuradoca and Ishmuradova, 2015, 47]. The Governor of the Central Bank of England, Mark Carney, said that the cryptocurrency involved certain risks, primarily from a technological point of view, and was also expensive [Carney, 2018]. The Bank of France published a very critical document on the cryptocurrency, denying it the functions of money, emphasizing the danger of its spread and identifying it with financial assets [2]. In 2014, the Gartner consulting company published a report stating that the cryptocurrency was at the stage

[7] The RIA Novosti newswire: https://ria.ru/economy/20171228/1511928676.html

between the peak of inflated expectations and the stage of disillusionment, in their opinion, the cryptocurrency would reach general recognition only in 10 years to come [Web Resource, Russia, 2016].

However, the reality has shown that already 2017 and 2018 have witnessed an intense debate at the global and national levels as to the possibilities of legalizing the cryptocurrency as a financial asset, its circulation as a parallel currency or a means of payment. So, the US, Canada, and Singapore have opted for recognizing cryptocurrencies as a financial asset. The initial coin offering (ICO) is considered equivalent to the IPO of common stock shares and is subject to strict licensing, registration of prospectuses and tax regulation. Japan and Germany have allowed the use of cryptocurrencies at the national level. Estonia seems to have made the boldest move to this regard by taking in 2017 the decision at the state level about the establishment of the state cryptocurrency (Estcoin), which would unite all Estonian e-residents (e-Residency) in the virtual space. [Korjus, 2017]

In this regard, of interest is the proposals of issuing the Petro national cryptocurrency in Venezuela [Petro, 2018][8]. E.g., the official document states that: "Petro is a sovereign crypto asset, backed and issued by the Venezuelan State as a spearhead for the development of an independent, transparent and open digital economy. It will also serve as a platform for the growth of a fairer financial system that contributes to the development, autonomy and trade between emerging economies". [Petro, 2018, Web Resource, Russia, 2016]. According to the authorities, the new cryptocurrency will be secured by the country's natural resources, primarily oil, gas, gold and diamonds. It could be the realization of the old idea by Hugo Chavez about the money with commodity coverage, which, in theory, should free the country from the dependence on the dollar. According to the official government data, the subscription to the Petro is active, and by June 2018 the currency should be launched by the public sector. In fact, however, the functioning of the Venezuelan cryptocurrency is technically not very clear. The new money coverage is not regulated either (the transition from the Petro to the natural resource will be done through the national money), and the cryptocurrency creation decentralized nature practically does not exist, since the government will be at the center of this production and control of convertibility [Floyd, 2018].

The claims of state control bodies are, first of all, lodged against anonymous cryptocurrencies emission platforms (which are quite numerous). Especially if they have a pronounced ideological character or the name of the site contains advertisement of narcotic drugs, pornography, etc. The already identified shortcomings add to the fact that there is no single center in the blockchain and information is distributed throughout the network [Genkin, 2018]. I.e., it is impossible to identify a private individual who made a possible

[8] Actually though they are often confused digital currency and assets are not always cryptocurrency and crypto assets. The latter presuppose the availability of crypto technology and they are decentralized. In the case of Venezuela it is a matter of digital currency of the central bank although cryptocurrency is also referred to. The CB stands behind the digital currency of the CB with definite assets while there are no assets or emittent behind the decentralized cryptocurrency – the emittent is the whole community.

error or created the problem encountered. Under the circumstances where the accidental or deliberate deletion of the Internet wallet leads to irreparable financial losses, you can easily imagine what far-reaching implications may be caused by the loss of documents or Internet records if they are practically impossible to restore. At the same time, the use of the blockchain is quite acceptable, and in fact becomes an integral element in public administration systems.

The attitude to cryptocurrencies as to an unsecured asset can be considered fair, since they are not backed by an asset in the form of a state gold reserve, or another real security like in all stocks and bonds. In fact, only the "mathematical apparatus" and the process of mining (computer calculations of ciphers for conducting transactions) secure cryptocurrencies. The question is why this security causes distrust? There is no absolute answer to this question. For now, as a possible explanation, we note the limited supply, as well as the emergence of a new form of trust, namely, the decentralized trust in money. It should be clearly stated that the charge with non-backing is also quite applicable to officially functioning money. In the case of the common European money (EURO) coverage, the ECB assets have debt securities of states, banks, and corporations, some of which will almost never be paid (see for ECB policy, Rodríguez and Carrasco, 2016). In this regard, state and bank money is also as unsecured as cryptocurrency.

The experience of attempting to launch the cryptocurrency at the national and state level, like in Venezuela and Estonia, clearly shows the strategic and international nature of the innovations observed. In 2018 and particularly in 2019 (as a reaction to different private projects on global digital currency) the central banks including those of the leading countries launched very fast large-scale plans about their own digital currency, CBDC (BIS, 2018, Barotini and Holden, 2019). That large-scale action has been prompted by numerous factors.

The leading explanation is related to the threat of a loss of control over the money supply (especially today given the low and even negative interest rates in the developed countries). CBDC and the elimination of cash have been considered a chance for new, almost limitless opportunities for pursuing a monetary policy, as well as for a rapid management of the transmission mechanism. However, all this depends on the CBDC design, whether they will be small scale or large scale, who will have access to them, whether they will be tokens or only accounting as well as other important, not yet studied but only presumed dependencies. It should be noted that the CBDC also have political implications. Their emission could result in a huge concentration of information in the Central banks and in all the known dangers for the free economic and civil society.

The second leading reason for launching the CBDC is related to the growing economic and monetary nationalism. In this environment each country and their CB respectively seek to shape up the national payment community and create barriers to the penetration of foreign public or private monetary instruments. The launching of the Chinese digital currency of the CB, as well as the discussions in the Russian Central Bank (Kiselev, 2019) can be regarded in that light. Both Russia and China develop today in the conditions of sanctions and commercial and currency warfare. CBDC are an important mechanism for promoting economic and monetary independence.

In view of this, it is extremely interesting to look at the development of cryptocurrencies and at the digital economy from the perspective of the global monetary system evolution.

4. Cryptocurrencies and Global Monetary System Architecture

As is known in the pyramid of the global monetary system, the dollar still holds the world positions [Cohen, 1998, 2015]. Suppose, however, that there comes a time when there is a mistrust of the US Federal Reserve System and the dollar as a world currency that is becoming increasingly vulnerable against the background of political and economic shocks in the US. At the same time, we do not reject just the opposite view that it was the FED, at the end of the twentieth century that initiated the project of creating cryptocurrencies as a possible means of distraction from the dollar problems.

The growing economy of China also contributes to the process of mistrust of the dollar as a world currency. The openly announced strategy towards the global economic leadership, declared by the PRC, cannot but alarm the financial and currency markets, traditionally working with the dollar. The Chinese economist H. Song in his popular book "The War of Money. China and the New World Order" openly states that China has claims to make the yuan a world money to replace the US dollar [Song, 2013, refer also to Guichard, 2014]. The emerging economic confrontation between China and the United States, the existence of problems in the economies of the European Union countries, the tendency to regain the position of the world power on the part of Russia, and many other factors create prerequisites for the search for entirely new forms of ensuring financial stability. The worldwide greater interest to cryptocurrencies can be explained, among other things, by the above reasons. However, we will raise arguments that are not at all related to the role of the dollar as the outgoing world currency. In general terms, there is a discussion about the new format of the global monetary system and about changes in the hierarchy and subordination of national currencies [Cohen, 1998, 2015, Song, 2013, Eichengreen, 1992].

The emergence of cryptocurrencies may well be associated with the advent of new rules and relations in the digital economy. The transition to electronic accounting of all economic transactions, digital assessment of the effectiveness of any enterprise or individual, allow us to assume a completely new system of accounting, mutual settlements, payments, etc. It is difficult to imagine that such likely innovations will occur without fundamental changes in the sphere of monetary circulation. We can assume with a high degree of probability that the introduction of a single world currency in a digital economy is a possible way and a fact of life in the future. For now, we can only guess how the process of merging or absorbing currencies will occur, quite possible, there will be a period of two or three currencies in circulation (the dollar, the euro, the yuan), between which a certain parity (rate) and area of influence will be established. Yet, there may be no such "transition" period.

It is conceivable that the rate of any currency currently in effect in the world can be adjusted to the appropriate volume of the cryptocurrency through a system of criteria. We can create national cryptocurrencies, which can become the main financial instrument for an indefinite period. Under this option, the countries with the greatest potential for electricity, and, most importantly, having the greatest free energy potential, can have a

competitive edge. At present, the major mining producers are the USA and China. It is by no means certain that only these countries have a real opportunity to find a large amount of free energy generating capacity without curtailing the existing energy-intensive industries. There is no clear evidence in the media on the existing completed development of new ways to produce energy, which could be used for cryptocurrencies mining.

But the fact that it is in the US and China that the most active discussions of options for the development of cryptocurrencies and their state regulation take place (from the total ban in China to the adoption of legislative acts at state levels in the USA) is a fact that attests to the particular attention to this problem. So far, the hope for state funding of mining centers with the allocation of energy capacity appears very faint. Large volatility of the cryptocurrency market and the rather powerful, already established centers in the US and China create greater risks for public investment. Rather, we should expect the proactive attitude of market structures under certain state guarantees and benefits. But even tax preferences may not provide a price edge to the Russian mining over the US and Chinese competitive companies operating in this market for years.

As noted above, the Russian Federation attitude to the development of cryptocurrencies is quite calm. Russia did not opt for a state ban, as it had been done in China. The relative restrictions imposed by the Central Bank and the Russian Ministry of Finance rather serve as guidelines. Many experts representing state structures, political parties, and business community are in favor of a thorough study of the possibilities for the development of the national cryptocurrency market. Cautious support is also given in the academic circles as to the idea of developing national mining platforms with mandatory state regulation.

The realities of the digital economy development dictate entirely new challenges not only in the system of finance and public administration, but also in the social sphere. The Russian Federation has already introduced e-government mechanisms based on digital technologies. The presentation of state and municipal services in the electronic form, the reality of e-healthcare, e-judicial system, e-electoral technologies serve to show the gradual transition to a digital system of government in the state. The decree of the Government of the Russian Federation dated July 28, 2017 № 1632-r "On the Approval of the Program "Digital Economy of the Russian Federation" indicated the major guidelines in the development of digital technologies in the national economy.

The digital or e-economy in the program adopted in the Russian Federation is formulated as a set of social relations that develop with the use of electronic technologies, electronic infrastructure and services, technologies for analysing big data and forecasting in order to streamline production, distribution, exchange, consumption, and improve the level of socio-economic development of the states. The program determines the main directions of the state policy and proposes working out specific actions until 2035, considering that the development of the national economy will take place in the context of a new economic paradigm. The preamble of the program runs that the stage of the digital economy formation will be difficult in the face of complicated foreign policy situation, but it does not contain direct administrative barriers and mechanisms for prohibitive state regulation.

There are different attitudes in assessing the digital economy potential development: it is viewed either as a continuation of liberalizing the economy and the maximum reduction in

state intervention in general, or, by the opposite viewpoint, it presupposes creating a legislative framework for tight control over the formation of digital flows, supercomputing capacities, Big Data, mining, etc. There are also polar opinions about the impact of the digital economy on the global economic crisis dynamics. Will the digitization of production and finance lead to relative stability or, on the contrary, create an even greater gap between countries, with some of them amassing the main software platforms and technological support, while others will act exclusively as a consumer test site? There are all grounds for assuming a real possibility of such stratification with the prospect of gradual intellectual degradation of entire countries, which will remain only an integral part of the digital chip space. The global economic crisis, which ends with the renewal of production technologies, the development of a new technological order based on a new type of social production, will inevitably lead to a revision of the relationship between the existing state blocs, the countries included in these interstate associations, the non-aligned countries and simply states with very different levels of economic development.

Even a brief overview of the problems we are considering clearly shows that cryptocurrencies and the digital economy as a whole pose serious problem to society and governmental authorities. One of the most important tasks in this regard is to prepare the citizens for these new realities. A key role in the implementation of the digital economy large-scale tasks is assigned to higher education, universities, a new model of which is widely discussed both globally and in Russia.

5. Digital Technologies, Digital Economy and Higher Education in Russia

The periods of entry into the new industrial relations of the digital economy may vary for different countries, both in time and in consequences. It means not only the economic consequences associated with the introduction of digital innovations, the change of technological processes in enterprises of many industries, as a consequence, accompanied by rising unemployment, a shortage of specialists of appropriate qualifications; it also implies the aggravation of social problems in the field of education, healthcare, science, and culture.

Statistics on the development of digital technologies in Russia are quite contradictory. At the end of 2016, the number of users of state and municipal services portals exceeded 40 million people. Of interest is the data for Moscow - in September 2017 alone the urban electronic services portal was visited by more than 20 million people. The most popular services (more than 15 million visits) were the student's electronic diary and joining various sports clubs and creative groups. This is a clear illustration of how quickly specific age groups respond to particular elements of the digital economy. In terms of the Internet users number, according to the report by McKinsey (an independent non-state source), Russia ranks first in Europe and sixth in the world, 60% of the population owns smartphones. However, the share of the digital economy in the RF GDP in 2015, by the same source, made only 3.9 percent, while in the European Union it totaled 8.2 percent, and in the US - 10.9 percent.

It stands to reason that the economy of any most developed country cannot be 100% digital, there will always be branches with a high proportion of unskilled labor: agriculture, services sector, small-scale mechanization in construction, and a number of others. But in such industries as engineering, energy, transport in a very short time there comes a due moment when the decision is made to switch to 3D technologies, additive processes in metallurgy, robotics in machine control, artificial intelligence, etc.

In terms of the forecast, the logistics schemes for the supply of components and raw materials may switch for a short while from the analogue economy to the digital one. In these chains, working personnel with "pre-digital" skills will still be used for some time, but all other technological redevelopments will have to already be serviced by specialists with the knowledge and competence in IT technologies.

In this regard, the "Education" section of the nationwide Russian digitalization program is a major one. The tasks of universities and colleges are defined quite extensively, they are not just about developing new educational materials and disciplines, their integration into existing programs, educational organizations are increasingly becoming centers of continuous learning of computer literacy, digital technologies. The development of new training programs in the use of information technologies in education, a widespread introduction of online training, the strategies for replacing existing educational standards with new ones, taking into account the needs of the digital economy, - all this is a challenge faced by the national universities.

The task assignment raises a number of questions, to which there is as yet no answer. How to most preferably accommodate the load across a wide range of subjects that need to be mastered to develop the required competencies? The current schemes - school, college, and university - can ideally solve this problem, but how much time will it take to develop methodological support for such a three-tier solution, how to optimally introduce interdisciplinary and transdisciplinary approaches in training?

There is another problem that needs to be addressed. Where should the profilisation center be located - at the bachelor's level, aimed to train rather a broad specialist within four years or at the master's level, taking into account the existing features in various sectors of the economy? There may be another solution – to create a system of a three-year profile training (lyceum) with the opportunity to further it at the level of a subject-oriented graduate school and in five years to obtain a sought-after specialist.

However, the indicated models will depend on the content of the educational subjects included in the curricula. Depending on who is planned to be qualified as a result of such training - an expert in website development, an analyst in the field of big data or a mining operator in a cryptocurrencies cycle, a student's learning pattern will be formed, with their own active participation. This is a very difficult choice, which has to be made by our education system in next to no time. Otherwise, we can create a standard that will be very far from the practical needs of the digital economy.

In the near future, digital academic record books, certification results, electronic diplomas, permanent portfolios, resumes and what is now called an occupational record will be

formed. This information will be recorded and stored for students during their professional activities.

The most famous Russian universities already have some experience in organizing bachelor's and Master's educational programs in the digital economy, financial innovations. They are MIPT (Moscow Institute of Physics and Technology), Moscow State University, Tomsk State University and NRU HSE (National Research University Higher School of Economics). In the field of supplementary vocational education, a number of programs on the cryptocurrencies functioning are taught at the Financial University under the Government of the Russian Federation, Plekhanov Russian University of Economics, and in Saint-Petersburg State University of Economics. There was also a launch of programs for bachelors "Digital State" (at RANEPA) and "Digital Economy" (at the Economics Department of PFUR).

It can be assumed that in the near future one should expect a surge in the activity of launching programs on digital economy, specialized for public administration, healthcare, financial technologies, Internet commerce, and training of teachers in computer science.

Of interest is the foreign experience of promoting information educational programs. In January 2016, the United States, for example, brandished the appeal of then-President Barack Obama, in which he called for a mass scale getting of a second degree in computer science, for which purpose $ 4 billion was allocated and 50,000 teachers of schools and colleges were to be trained at the expense of the state budget. Thus, at the initial levels of education the model of accumulating basic knowledge in computer technologies is realized, while at the level of university education specific job preparation takes place.

In China, a course on the basics of technological mining is recommended for mandatory study, to a different extent of knowledge for schools, colleges, and universities. This approach allows to obtain basic competences more of a technical nature, yet, the study of this subject, even to a small extent, will allow to extend purpose-oriented competencies at each next educational level.

In Russia, short-term courses in information technologies are aimed at training application programmers, application users, system and network administrators, web resource and databases administrators. They plan the development of competencies and a system for testing the said competencies by ad hoc groups that will comprise educators, public authorities' employees, and business environment representatives. The development of competencies is by far the most important result of the educational process, the most understandable to the potential employer. By the end of 2019, it is planned to obtain digital economy federal state standards for all levels of education. As a whole, we are going to operate with figures illustrating the scale of the tasks of the educational component in the Russian digitalization program for the next few years. The number of graduates of higher and secondary vocational education with the skills in the field of digital economy at the global average should reach 150 thousand people by 2020, and by 2025 – 500 thousand people; as to the number of professionals in the field of digital economy with higher education, it is expected to exceed 60 thousand people by 2020, and by 2025 - 100 thousand people.

6. Concluding Reflexions

In this article we stand on a number of main points in the theoretical discussion related to the interpretation of the purport and functions of the new monetary instruments - cryptocurrencies, vigorously earning a place in the financial markets of different countries, as well as on a number of possibilities for the future as to the development of the said financial innovations. We performed the analysis of the actions on the part of public authorities and central banks of different countries in response to the emergence and distribution of virtual electronic money and it has been clearly shown that the cryptocurrency as one of the digital economy manifestations leads to fundamental changes not only in the monetary, financial, and economic spheres, but also in social and political development. International relations, and international monetary and financial relations in particular, are also drastically changing.

In order to meet the challenges of the new digital technological revolution, states, all public institutions, and systems have to take a pro-active approach in relation to the demands of the digital economy, accepting its progressive innovations and counteracting the growing risks of a still greater gap in the tiered development of countries. At the same time, it is important for states and civil society structures to actively involve their citizens in these processes, helping them to adapt to new realities. In our opinion, education in general and higher education in particular are the main mechanism for creating new and imparting the already available knowledge, the most powerful tool for influencing the constructive adjustment of the differences that accompany the processes of digitalizing society.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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THE NATIONAL CULTURE EFFECT ON THE ADOPTION OF INTERNET-BANKING

This paper analyses the relationship between the national culture (Hofstede's cultural dimensions Individualism, Uncertainty Avoidance index and Power Distance index, as well as Minkov's Indulgence vs Restrain index) and the adoption of Internet banking in 30 European countries. We presume, that if there is a strong correlation between them, some recommendations to the banking sector could be made to help them develop more effective marketing strategies to increase the adoption of e-banking, based on the cultural specifics in the particular country or clusters of countries. Our findings show that there is a strong correlation between those cultural dimensions and the adoption level of e-banking. In particular, it was found that the Individualism has a lead role in most of the cases. However, in the cases of a combination of high Uncertainty Avoidance and low Indulgence, the lead role of Individualism does not manifest.

We also argue, that in the cultural combination of high Individualism, and high Uncertainty Avoidance index with low Indulgence vs Restrain index, the combination of Individualism and Restrain factors reduces the influence of Uncertainty Avoidance, no matter how high it is.

We analyse and also discuss the influence of different other factors, which influence the adoption of Internet banking, looking for combinations which lead to specific effects.

JEL: M14; M15; G21

Introduction

The Internet-banking (e-banking) is one of the main avenues of development of the banking services, and it has been studied by many scholars in the last two decades. As far as the level of adoption differs country by country, e.g. Eurostat (2019) for the European countries, the influence of the particular factors on the process has been of significant interest. The researchers studied the effect of different factors, including familiarity with the Internet, perceived usefulness, perceived convenience and accessibility, perceived ease of use, perceived risk, perceived web security, intention to use, age, gender, income,

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national culture, and other. It is clear that if we know which factors play a more significant role in the process in a particular country, or in a group of counties, the banks would be in a better position to set more efficient strategies to accelerate the adoption of Internet banking.

The scholars use in their publications different terms to describe the Internet banking, including e-banking, online banking, mobile banking. In all cases, the same process and banking services, provided in the Internet environment using different devices, are presumed, and the terms are used as interchangeable. Considering this a good practice, in this paper, we will use all these terms as interchangeable as well.

Research Problem

When we analyse the adoption levels of Internet banking, we presume that the bank clients form their attitude and behaviour about the type of services they use (online or with a human factor), based on a combination of factors, including a very important one – the trust they have in the online system/automation (trust in the system in general), as well as on human-automation interaction factor, or how reliable and safe they feel themselves using the sophisticated automation which actually provides the online operation (Wang, Pynadath & Hill, 2016; Chien, 2016; Martelaro, Nneji, Ju & Hinds, 2016). As Lee & See (2004) stated, the "trust (in automation) can be defined as the attitude that an agent will help achieve an individual's goals in a situation characterised by uncertainty and vulnerability." It is really important to study the factors which affect the development of such a trust.

While there is a plethora of research on the effect of other factors, including familiarity with Internet, perceived usefulness, perceived convenience and accessibility, perceived ease of use, perceived risk, perceived web security, intention to use, age, gender, income, and other (e.g. Polasik & Wisniewski, 2009; Krauter & Faullant, 2008; Shustova & Blagoev, 2018; Mattila, Karjaluoto & Pento, 2003; Laforet & Li, 2005; Ling, Fern, Boon & Huat, 2016; Lin, 2018; Wang, Lo, Chi &Yang, 2004; Singh & Kaur, 2013; Geetha & Malarvizhi, 2012; Wai-Ching, 2008; Nadim & Noorjahan, 2008; Tesunbi, 2019; Venkatesh & Davis, 2000; Jun , Yang & Kim, 2004; Schierz, 2010, and other), the cultural factors have been studied much less. Shih-Yi (James) Chien (2016), in his excellent dissertation, studied the effect of cultural factors (Hofstede's cultural dimensions and Triandis' cultural syndromes) on the human-automation interaction.

Alabdan & Callen (2016), Shustova & Blagoev (2019) and Blagoev, Zhelev and Shustova (2019) provided some analysis of the influence of some cultural factors on Internet banking, but altogether, considering the importance of the problem the research of the effects of the national culture has been rather limited.

Research Objectives

As we already stated, while there is a lot of research on many factors, which influence the dynamics of the Internet banking adoption by countries, the effect of the characteristics of the national cultures has not been studied enough. This research has the following goals:

Objective 1: Analyse if there is a relationship between the national culture (Hofstede's cultural dimensions) and the adoption of Internet banking by countries. If there is a strong correlation between them, some recommendations to the banking sector could be made to help them establish more trust, and then – the adoption of e-banking, based on the cultural specifics in the particular clusters of countries.

Objective 2: Analyse and discuss the influence of different factors, which influence the adoption of Internet banking, looking for combinations which lead to specific effects.

Literature Review

This section contains a brief review of the publications on the main factors with substantial impact on the process. The factors are not listed according to their importance, because such a ranking is impossible. They are listed from most obvious to less considered factors, ending up with the national culture.

The main factors which influence the adoption and usage of online banking include:

Familiarity with Internet

Familiarity with Internet, which differs by countries, has been always one of the main considerations to explain why the level of e-banking usage differs (e.g. Polasik & Wisniewski, 2009; Krauter & Faullant, 2008; Mattila, Karjaluoto & Pento, 2003; Laforet & Li, 2005; Ling, Fern, Boon & Huat, 2016; Lin, 2018; Shustova & Blagoev, 2019). Polasik & Wisniewski (2009) studied the duration of internet banking usage, usage of internet at work and previous experience with Internet transactions, all defined as familiarity with the Internet, "positively affected the probability of using internet banking." Krauter & Faullant (2008) studied the same factors in Austria and also found out that they have a positive effect. Laforet and Li (2005) reported that "the internet-banking users have more computer experience than the non-users". Although such findings seem to be pretty logical at a personal level, they do not find support at a national level. For example, Blagoev, Zhelev & Shustova (2019) argue that although the level of Internet penetration in Kazakhstan (77% of the population) and in Bulgaria (67%) is rather high, this does not affect significantly the online banking adoption level, which in 2018 has been 10% in Kazakhstan and 7% in Bulgaria (Eurostat, 2019). They reported that "the level of digitalization does not seem to have a direct effect on the level of penetration of e-banking in the country, but is an important condition for its development".

Brown and Molla (2005) studied the relationship between the use of mobile devices and adoption of e-banking in South Afrika and found out that both the adoption intent and perception of using mobile devices for communication differ from those of using Internet-banking. As they state, "… success with one channel does not automatically transfer to another channel."

Intention to use IT, and accessibility and compatibility with the used platforms

These could be considered as a general predisposition to use IT-based platforms and devices (Thulani, Tofara & Langton,2009; Kang, 2014; Brown & Molla, 2005; Shustova & Blagoev, 2019). The clients/users' ability to work with the necessary software and hardware/equipment, to use the services and obtain the needed information form the generally positive perception about the usage of Internet-banking vs or along with the traditional banking services, to which the clients have been accustomed. Back in 2001, Godwin-Jones (2001) and later Hackett, Parmanto & Zeng (2004) have underlined the importance of the webpage architecture to stimulate the usage of the e-services. This consideration has not lost its importance for the Internet-banking adoption nowadays as well. Blagoev & Shustova (2019) analysed the situation in Kazakhstan and reported that the participants in their survey also made suggestions to the banks to pay special attention to their web site architecture and ease of use.

Perceived usefulness and satisfaction from using e-banking

Singh & Kaur (2013), Geetha & Malarvizhi (2012), Wai-Ching (2008), Nadim & Noorjahan (2008), Tesunbi (2019), Venkatesh & Davis (2000), Jun, Yang & Kim (2004), Schierz (2010), Blagoev & Shustova (2019), and others have studied the perceived usefulness and found it to be a critical factor for the adoption of the e-banking. It is important to analyse the usefulness in relation to the satisfaction – from the transaction itself (e.g. Wang, Lo, Chi &Yang, 2004), or in both cases – overall satisfaction from using e-banking, as well as specific satisfaction from the fast and easy transactions (Jamal, 2004; Oliver, 1980; Salihu & Metin, 2017; Yoon, 2010). In general, the satisfaction can be defined as the feeling of the customer after purchasing the product or using the service (e.g. Oliver, 1980; Blagoev, 2003; Kotler & Keller, 2015; Salihu & Metin, 2017). It is clear that the quality of the provided e-banking services is closely related to customer satisfaction (Jabnoun & Khalifa, 2005). Alhinai, Albadi, Alshihi & Al-Gharbi (2013), who investigated determinants of e-banking adoption by individuals, argue that the impact of system characteristics and user traits is very important for the easy adoption. The published results for the research of satisfaction from the e-banking confirm the effect of perceived satisfaction as defined above, for the use of Internet-banking at a personal level. We can say, that the satisfaction is related to the perceived ease of use, and as suggested by Venkatesh & Davis (2000) and Venkatesh & Morris (2000) it is one of the determinants for user's adoption of new technologies in general.

There is one more factor in line with the perceived ease of use and satisfaction – the mobility, understood as using services through mobile devices, including smartphones, laptops, palmtops, etc. Oganesyan & Danilovskih (2016) studied the mobile banking in Russia, where Bank Tochka and Modulbank initiated offering mobile applications for smartphones. Later this was followed by Sberbank, Raiffeisen Bank, Moscow bank, VTBank and other. For example, Kim (2010), as cited by Lin (2018), and Oganesyan & Danilovskih (2016), claim that mobility has a positive effect on the perceived usefulness of mobile payments. However, there are other studies, which did not find such a relationship. Schierz (2010) in Mexico and Blagoev & Shustova (2019) did not find a positive

relationship between mobility and perceived usefulness in Kazakhstan and Bulgaria in regard to the mobile e-banking services. In spite of the high percentage of smartphone users in these countries, the e-banking adoption is rather low.

Perceived value

The perceived value of e-banking services is also a significant factor (Alhinai, Albadi, Alshihi & Al-Gharbi, 2013; Xiong, 2013; Wahab & Elias, 2010; Yang, Jun & Peterson, 2004) and this is quite understandable considering it in relation to the level of satisfaction from the easiness and save-of-time compared to the traditional banking services (e.g. Salihu & Metin, 2017). Of course, the perceived value might be formed based on totally different criteria, depending on the values system of the user. For some people, the time constraint is most important, for other the novelty, or even the perception that "this is what the people from my circle do" might be the decisive factor to consider the online banking of (high) value. Oganesyan & Danilovskih (2016) claim that the mobile applications for smartphones of Bank Tochka and Modulbank in Russia have stimulated the increase of mobile e-banking because these banks do not limit the amount of payments. This is obviously a specific value factor for the particular users.

Perceived trust in automation

The effect of trust in the automation ecosystem (hardware, software, and the way it operates, including the feeling of "talking to a robot"), in combination with the perceived value of online banking for the particular customers, has been studied by many researchers (e.g. Wakefield, 2001; Suh &, Han, 2003; Wahab & Elias, 2010; Alhinai, Albadi, Alshihi & Al-Gharbi, 2013; Xiong, 2013; Chien, 2016). All of them found a positive relationship between the trust in the Internet-banking as a system and the level of adoption of online banking. Shih-Yi (James) Chien (2016) studied the effect of cultural factors on trust (Hofstede's cultural dimensions and Triandis' cultural syndromes) in the human-automation interaction.

Perceived risk of use, perceived web security

Along with the perceived usefulness, the perceived risk of use has been a factor, that influences the adoption – either positively or negatively, depending on the level of perceived risk (Tesunbi, 2019; Tskhadadze, 2018; Serener, 2016; Kudryashov & Zagoskina, 2017; Ishakova & Ivanov, 2017; Geetha & Malarvizhi, 2012; Nadim & Noorjahan, 2008; Venkatesh & Davis, 2000; Porteous, 2006; Alizadeh, 2018; Howcroft, Hamilton & Hewer, 2002). The antecedents for this risk might be different. For example, Hoff & Bashir (2015) and Wang, Pynadath & Hill (2016) underline that there should be some level of "trust" of the user in the system which they will use. The perceived risk of use might be caused by the feeling that the security privacy is critical (e.g. Wai-Ching, 2008; Almogbil, 2005), or caused by technical ignorance of the user, and negative feeling towards the use of new technologies (e.g. Tesunbi, 2019; Nadim & Noorjahan, 2008),

which change the established patterns of behaviour – in this case towards brick-and-mortar banking. Howcroft, Hamilton & Hewer (2002) argue that most customers trust the bank they use, but "they have less confidence in technology for e-banking." Malhotra & Singh (2009) found basically the same in India. In other words, the perceived risk of using online banking for them is too high, although they trust their bank. Geetha & Malarvizhi (2012) found out that in India perceived usefulness, perceived ease of use, and perceived risk in combination influence the decision of the client to adopt or not to use e-banking.

Demographic and socio-economic factors

The relationship between age (Rugimbana, 2007; Gan & Clemes, 2006; Hernandez & Mazzon, 2007; Blagoev & Shustova, 2019), genders (Li & Lai, 2011; Aljasser and Sasidhar, 2013; Alabdan, 2017), as well income level (Lassar, Manolis & Lassar, 2005; Ozdemir, Trott & Hoecht, 2008; Alabdan, 2017 and Alalwan, Dwivedi, Rana, Lal & Williams, 2015) and Internet-banking adoption has been also studied.

Alabdan (2017) studied the Saudi Arabian female perspective on the adoption of online banking and found out that easiness, convenience, security, trust, user-friendly, comfortable and availability are the main factors which stimulate such adoption. As seen, these factors are pretty much the same for the other genders and countries. Alabdan also found that the income does not play a significant role. To a large extent, these results confirm the findings of Al-Ashban & Burney (2001), who much earlier also found out that the income, education and gender do not play a significant role in the adoption in Saudi Arabia. In regard to the age of the users, in their study, Al Somali & Ghinea (2012) argue that the younger people are more adaptive to the new technology – online banking, simply because they are more comfortable with the use of IT. Mattila et al. (2003), whose survey was done in Finland, and Blagoev & Shustova (2019) in Kazakhstan also confirm the effect of age of the customers, as the more mature people in those countries claim more difficulties when working with the IT.

National culture

The effect of the national culture specifics on e-banking has not been studied extensively so far. Alabdan & Callen (2016) studied the effect of cultural constraints on the adoption of online banking based on Hofstede's cultural dimensions.

Chien (2016) published the results of an excellent research on the influence of cultural factors on the trust in automation. He studied the Power Index, Uncertainty Avoidance Index and Individualism in their relationship with trust in automation in USA, Taiwan and Turkey. He found a positive correlation between the Uncertainty Avoidance Index (UAI) and trust. He found out that there is a confirmed correlation between UAI and general trust, and between Individualism and general trust in USA, but no significant correlation in the case of the Taiwanese and Turkish participants. Chien (2016) went further, studying to what extent the effects of trust, as observed in the Western cultures, apply universally in the three cultural syndromes (Triandis, 1994). He claims that these cultural syndromes of

Triandis – dignity cultures, face cultures, and honour cultures – correspond fairly well to Individualism Power Distance Index, and Uncertainty Avoidance Index – Hofstede's cultural dimensions (Chien, 2016, p. 24).

Blagoev, Zhelev & Shustova (2019) studied the Internet-banking adoption in Kazakhstan and Bulgaria, analyzing very briefly the effect of the national culture on the level of adoption. The results of the analysis support the view that the impact of national culture on the adoption of online banking has to be studied more systematically, based on a statistical analysis of the cultural dimensions and the Internet-banking adoption in different countries.

Methodology

Research approach and strategy

This research is based on secondary (published) data. We made our analysis at the ecological level, and our units of analysis are the European countries, not individual respondents. We do the research on the assumption that we can analyse the influence of cultural factors on the adoption of e-banking at country level based on cultural dimensions of G. Hofstede (1991) and Hofstede, Hofstede and Minkov (2010), also assuming the resent critiques of Michael Minkov on Hofstede's theory (Minkov, 2017).

We also assume that the published statistics for the adoption of Internet banking by countries (Eurostat, 2019) have been formed to some extent as a result of the impact of cultural factors on the customers' perception, and level of trust in the relatively new Internet technology and related platforms for e-banking. We use statistical methods of analysis, more specifically, Pearson's correlation analysis. In our understanding, if there is a strong correlation between the adoption levels of e-banking by countries, and the Hofstede's cultural indexes – respectively Individualism, Power Distance Index and Uncertainty Avoidance Index – the cultural factors have substantial role in forming the perception of customers at national level and adoption level of e-banking in the particular country.

The data about the development of the Internet banking is taken from Eurostat (2019). The statistics about the number of bank offices per country is taken from The International Monetary Fund, Financial Access Survey (The World Bank, 2019).

Limitations

We limit our analysis to the European countries only which of course is a limitation to some extent. For example, we cannot analyse the three cultural syndromes (Triandis, 1994) in their relationship to e-banking, and respectively the face cultures and honour cultures, as these are not represented enough in Europe. Obviously, this has to be done in a future research.

Analysis and Discussion

The effect of cultural factors on the e-banking adoption

As we already mentioned above, the level of adoption of Internet banking differs country by country. According to Eurostat (2019), the adoption levels at 2018 are on Table 1.

Table 1

Level of adoption of Internet banking in Europe at 2018

No	Country	% using e-banking	No	Country	% using e-banking
1	Norway	93	16	Austria	58
2	Denmark	89	17	Malta	51
3	Netherlands	89	18	Slovakia	50
4	Finland	89	19	Spain	49
5	Sweden	84	20	Poland	44
6	Estonia	80	21	Slovenia	42
7	United Kingdom	74	22	Croatia	41
8	Belgium	69	23	Hungary	41
9	Luxembourg	68	24	Portugal	39
10	Latvia	66	25	Italy	34
11	France	63	26	Turkey	28
12	Czechia	62	27	Greece	27
13	Lithuania	61	28	Serbia	15
14	Germany	59	29	Bulgaria	7
15	Ireland	58	30	Romania	7

Source: Eurostat (2019). E-banking and e-commerce.

As data shows, the Nordic countries have a significantly higher level of adoption of e-banking, than the South-East European countries. The average level for the six Nordic countries (Norway, Denmark, Netherlands, Finland, Sweden and Estonia) is 87.33% while the average adoption level for the five South-East European countries is 16.8% only, which is about 5 times less. Such a big difference corresponds quite well to the cultural map of Minkov, Blagoev and Hofstede (2012), where the Nordic countries are on the right side, and the South-East European countries are grouped on the left side of the map. It is quite logical to presume that the cultural factors affect the adoption of online banking at a personal level, which is manifested at a national level as well.

To analyse the possible relationship between the e-banking adoption level and the cultural factors, we applied Pearson's correlation. We presume that a correlation around 0.6 and more, no matter positive or negative, will be a significant proof of relationship, which definitely would affect the Internet banking adoption in the particular country. We decided to use four of Hofstede's cultural dimensions – Individualism Index, Power Distance Index, Uncertainty Avoidance Index, and Indulgence vs Restrain of Minkov. There are different views on the validity of these indexes. For example, Minkov (2017) argues that Individualism is a robust dimension of national culture, while Power Distance "seems to be a logical facet of Individualism" and Uncertainty Avoidance lacks internal reliability. While agreeing with these arguments in principle, we believe, that if these four cultural

dimensions show high Pearson correlation coefficients, they will serve us well in understanding the adoption process. Even more, if Power Distance is a logical facet of Individualism, it has to show a similar correlation coefficient to Individualism, but logically its effect has to be opposite to that of Individualism. If these classical cultural dimensions do not show similar effect (no matter positive or negative), we would not be able to interpret the effect of the cultural factors on the process we study. Regarding the Uncertainty Avoidance Index, Minkov (2017) claims that "it is not a predictor of any of its presumed main correlates: importance of job security, preference for a safe job, trust, racism and xenophobia, subjective well-being, innovation, and economic freedom." Here trust is understood to a high extent as related to the interpersonal communication. In our case, we define trust as "general trust attitudes towards automation without reference to any specific uses of automated applications" (Chien, 2016). We presume that the service the Internet banking platform provides is as good as the one a highly competent bank officer could provide. From our point of view, the same consideration should be used as for the Power Distance – if there is a strong correlation with the adoption level by countries, we should consider this cultural dimension, Uncertainty Avoidance, as playing some role. If there is a strong correlation, one could advise the banks how to build up their marketing strategies as to influence the customers in the desired direction – adopt e-banking.

Figure 1

Cultural map of the world for 49 countries

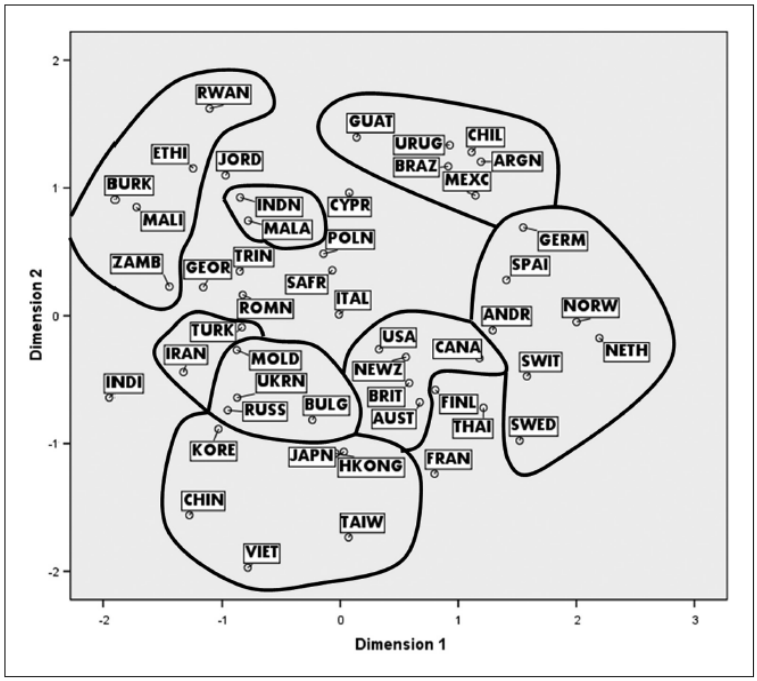


Figure 2. Multidimensional Scaling Plot of 49 Countries on the Six Items That Define the Personal-Sexual Factor
Note: See the appendix at the end for expansions of country name abbreviations.

Table 2

Data for the Internet banking adoption and the cultural dimensions (Hofstede and Minkov)

COUNTRY	e-banking adoption (%, 2018)	Cultural dimensions			
		PDI	IND	UAI	Indulgence vs Restrain
Norway	93	31	69	50	55
Denmark	89	18	74	23	70
Netherlands	89	38	80	53	68
Finland	89	33	63	59	57
Sweden	84	31	71	29	78
Estonia	80	40	60	60	16
United Kingdom	74	35	89	35	69
Belgium	69	61	78	97	57
Luxembourg	68	40	60	70	56
Latvia	66	44	70	63	13
France	63	68	71	86	48
Czechia	62	57	58	74	29
Lithuania	61	42	60	65	16
Germany	59	35	67	65	40
Ireland	58	28	70	35	65
Austria	58	11	55	70	63
Malta	51	56	59	96	66
Slovakia	50	104	52	51	28
Spain	49	57	51	86	44
Poland	44	68	60	93	29
Slovenia	42	71	27	88	48
Croatia	41	73	33	80	33
Hungary	41	46	80	82	31
Portugal	39	63	27	104	33
Italy	34	50	76	75	30
Turkey	28	66	37	85	49
Greece	27	60	35	112	50
Serbia	15	86	25	92	28
Bulgaria	7	70	30	85	16
Romania	7	90	30	90	20

Sources: Eurostat (2019), Hofstede Insight (*2019)*

We use the data for the indexes for the three Hofstede's cultural dimensions and Minkov's Indulgence from Hofstede Insight (https://www.hofstede-insights.com) to calculate the Pearson correlation coefficients. Table 2 shows the data for the e-banking adoption and cultural dimensions indexes by countries.

The Pearson correlation coefficients are shown on Table 3.

It is clear that the three indexes – Individualism Index, Power Distance Index and Uncertainty Avoidance Index – are very high (around +/-0.7) and we can definitely state that these cultural indexes influence significantly the Internet banking adoption. For the Indulgence, the correlation coefficient is weaker (0.52), but still, we will analyse it looking

for an explanation of some significant deviations from the trend for some particular countries. The correlation between the e-banking adoption and the four cultural dimensions with high correlation index are shown on Figure 2.

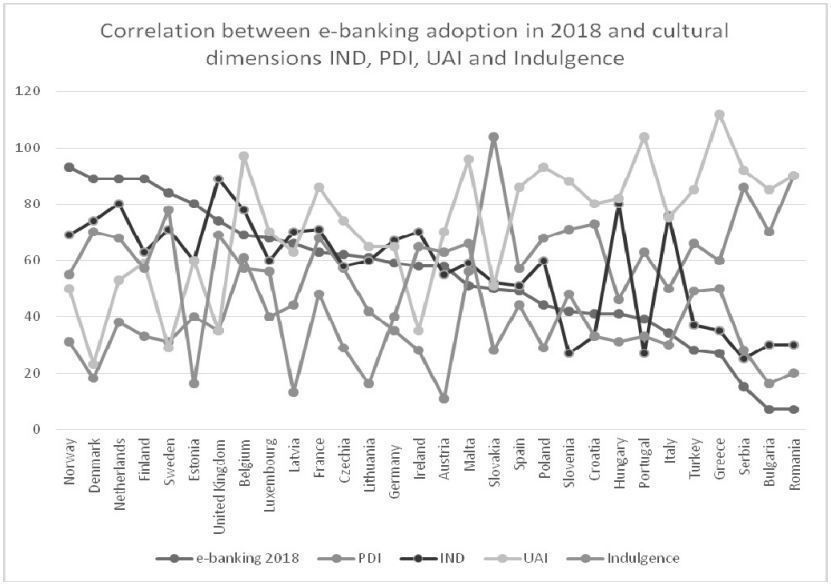
Table 3

Pearson correlation coefficients between e-banking adoption by country and the cultural indexes

	Cultural dimension index (Hofstede's for IND, PDI, and UAI; Minkov's for Indulgence)	Pearson's Correlation coefficient (r)
e-banking adoption	Individualism	0.723617
e-banking adoption	Power Distance Index	-0.69162
e-banking adoption	Uncertainty Avoidance Index	-0.68523
e-banking adoption	Indulgence vs Restrain	0.524827

Figure 2

Pearson's correlation between Internet banking and cultural dimensions (IND, PDI, UAI, and Indulgence vs Restrain)



It is seen that there is a strong positive correlation between e-banking adoption and Individualism (IND) and a strong negative correlation with Power Distance (PD) and Uncertainty Avoidance (UA).

When we analyse the significant deviations from the trend for each of the cultural factors, we see that they could be explained to some extent with the index in another cultural dimension. For example, the significantly different IND indexes of Hungary (80) and Italy (76), from the trend where the average for their neighbour-countries is 33, should lead to higher adoption level, than their actual one*, if IND would be the only cultural factor which*

plays a role in the process. Instead, we see that Hungary (41) and Italy (34) have two-three times lower level of e-banking adoption than the leading countries. This can be explained to some extent with their low Indulgence vs Restrain indexes (31 for Hungary, and 30 for Italy) in combination with relatively high UAI (82 for Hungary, and 75 for Italy). These assumptions suggest to develop or modify the existing, marketing communication strategies in such countries to correspond to a higher extent to their cultural specifics – high UA index and high Restrain index. Any other marketing communication strategy would obviously fail in their cultural environment.

On the other hand, the analysis of the Indulgence vs Restrain cultural dimension (Hofstede, Hofstede & Minkov, 2010) shows that the correlation with the e-banking adoption would be higher, but for Estonia, Latvia and Lithuania, which have low Indulgence vs Restrain index (16 for Estonia, 13 for Latvia and 16 for Lithuania). These low Indulgence indexes combine with relatively high Individualism index (60 for Estonia, 70 for Latvia and 60 for Lithuania) and high Uncertainty Avoidance (60 for Estonia, 63 for Latvia and 65 for Lithuania). We argue that in the cultural combination of high IND, and high UAI with low Indulgence vs Restrain index, the combination of IND and Restrain factors reduces the influence of Uncertainty Avoidance, no matter how high it is. These considerations obviously should be used when developing more effective marketing communication strategies.

Based on the analysis above we argue that our Objective 1: Analyse if there is a relationship between the national culture (Hofstede's cultural dimensions) and the adoption of Internet banking by countries, is achieved. There is a strong correlation between the e-banking adoption and three of the Hofstede's cultural dimensions – Individualism ($r = 0.72$), Power Distance ($r = -0.69$) and Uncertainty Avoidance ($r = -0.69$). The correlation coefficient between e-banking adoption and Minkov's Indulgence vs Restrain is $r = 0.52$, which is supportive enough of the view that the cultural factors affect the process of Internet banking adoption. As shown above, in the case of Hungary and Italy, their e-banking adoption levels could be explained partly with the influence of Indulgence vs Restrain cultural factor.

The effect of the combination of cultural and other factors

As discussed in the Literature review above, the published research shows five groups of factors, which influence the adoption of Internet banking at a national level:

a. Familiarity with Internet, accessibility, as well as intention to use IT and level of compatibility with the used platforms
b. Perceived value and perceived usefulness and satisfaction
c. Perceived trust in automation, perceived risk of use and web security
d. Demographic and socio-economic factors, e.g. age, gender, income, education
e. Cultural factors.

There is no doubt that each one of these factors has some influence on the perception of the individual person to use, or not to adopt e-banking. However, at a national level, the effect of each of these factors often deviates from what we find based on surveys of different samples.

Familiarity with Internet, accessibility, as well as intention to use IT

Blagoev, Zhelev & Shustova (2019) studied the adoption of e-banking in Kazakhstan and Bulgaria paying special attention to the impact of the coverage of bank offices in these countries. The initial presumption was that the more bank offices there are on a particular territory, the lower the level of Internet banking adoption would be. However, the research did not prove that this factor has a significant effect. More than that, The World Bank (2019), on IMF's Financial Assets Survey, published very interesting results for the number of bank branches per 100,000 adults, which we combined with the data for the e-banking adoption per country (Table 4). The Pearson correlation coefficient for the e-banking adoption level per country and the number of bank branches per 100,000 adults is r = -0.42. As shown in Table 4, there are countries with very high coverage with bank branches and high Internet banking adoption levels, e.g. Luxemburg (71.1 per 100K and 68%), France (35 per 100K and 63%), Spain (58.6 per 100K and 49%), as well as countries with low number of branches and still modest e-banking adoption.

The Internet penetration is obviously a necessary condition for adoption, but at the same time, it does not seem to be a significant factor. For example, Bulgaria with 63% internet penetration and 7% e-banking adoption, and Kazakhstan with 83.4% Internet penetration and 10% e-banking adoption (Blagoev, Zhelev & Shustova, 2019) do not support the view that the Internet penetration is a decisive factor, although it is a necessary prerequisite.

No	COUNTRY	e-banking % 2018	No bank branches per 100,000 adults		No	COUNTRY	e-banking % 2018	No bank branches per 100,000 adults
1	Norway	93	5.5		16	Austria	58	12
2	Denmark	89	20.7		17	Malta	51	32.4
3	Netherlands	89	11.9		18	Slovakia	50	26.9
4	Finland	89	1.4		19	Spain	49	58.6
5	Sweden	84	16.2		20	Poland	44	29.3
6	Estonia	80	10.1		21	Slovenia	42	29.5
7	United Kingdom	74	25.1		22	Croatia	41	32.5
8	Belgium	69	6.7		23	Hungary	41	14.6
9	Luxembourg	68	71.1		24	Portugal	39	30.2
10	Latvia	66	16.4		25	Italy	34	44.6
11	France	63	35.9		26	Turkey	28	17.4
12	Czechia	62	21.3		27	Greece	27	22.8
13	Lithuania	61	13.6		28	Serbia	15	28.2
14	Germany	59	12.9		29	Bulgaria	7	50.9
15	Ireland	58	20.7		30	Romania	7	26.6

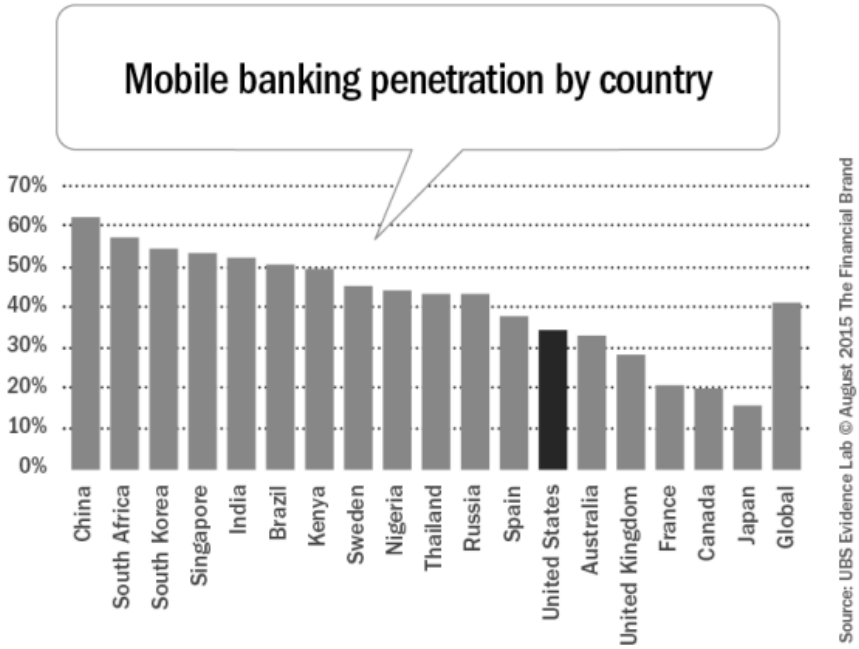
Sources: Eurostat (2019) and The World bank (2019)

Perceived value and perceived usefulness and satisfaction

The perceived value and perceived usefulness and satisfaction is probably a very significant factor, related to the cultural norms as well. As shown on Fig.3, there are developing countries, e.g. India, Brazil and Kenya, where the mobile banking penetration is higher than that in the developed countries (Marous, 2015). China is a leader, according to this survey, with the comment that when we analyse high tech platforms and services, we cannot list China among the developing countries. Of course, we should not consider the mobile banking data as representative for e-banking in general, but still, the trends are similar. The UBS survey also shows that there is a higher level of customer satisfaction and related advocacy, in the cases of effective mobile banking services. Oganesyan & Danilovskih (2016) found similar results in their study in Russia. We can consider this true for the Internet banking as a whole, as we can presume that in both cases the customers are more economically active and technologically savvy, and in most case – these are the same customers.

Figure 3

Mobile banking penetration by country, 2015



Source: *Marous (2015) based on UBS Evidence lab*

Perceived trust in automation, perceived risk of use and web security

The perceived trust in automation, perceived risk of use and web security are very important considerations, as we have seen in the analysis of the cultural factors. As we have shown above, there are many publications (e.g. Wakefield, 2001; Suh &, Han, 2003;

Kolodinsky, Hogarth & Hilgert, 2004; Malhotra & Singh, 2009; Wahab & Elias, 2010; Alhinai, Albadi, Alshihi & Al-Gharbi, 2013, Xiong, 2013, and Chien, 2016) on this issue. All of them found a positive relationship between the trust in the Internet-banking as a system and the level of adoption of online banking. Based on these and other publications, and on our analysis above, we hypothesize that the level of perceived trust in automation and Internet banking depends significantly on the combined influence of Individualism, Uncertainty Avoidance and Indulgence. In most of the cases, in the countries with high Individualism index, the other factors do not affect much the e-banking adoption. However, the Internet banking adoption in Hungary and Italy show that in the cases of high Uncertainty Avoidance index and low Indulgence vs Restrain index (high restrain), the Individualism factor does not play the lead role in the people's attitude and perception, and the level of generated trust in the system as a whole remains low. Considering these specifics, we should develop such marketing communications strategies, which help to overcome the potential customers restrains, build up trust in e-banking, and motivate them to adopt the new technology and service.

Demographic and socio-economic factors

We discussed the demographic and socio-economic factors and their relationship to the Internet banking above, and because of that, we will not discuss them again here.

Cultural factors

The cultural factors were studied extensively above, and there is no need to discuss them here again, except for the note that we have concentrated on the European countries only in our analysis. We used Hofstede's cultural dimensions and Minkov's Indulgence vs Restrain factor, which serve well in the European context. However, if we take the data from Fig.3, we have to consider the cultural syndromes of Triandis (1994) – dignity cultures, face cultures and honour cultures – as instrumental if we analyse the national cultures in the world.

Altogether, the discussion on the factors above answers our Objective 1: Analyse the publications on the factors, which influence the adoption of Internet banking.

Conclusions

The level of adoption of Internet banking differs significantly country by country, and this inspires interest to analyse the influence of the particular factors on the process. The effect of different factors has been studied, including familiarity with the Internet, perceived usefulness, perceived convenience and accessibility, perceived ease of use, perceived risk, perceived web security, intention to use, age, gender, income, national culture and other. It is clear that if we know which factors play a more significant role in the process in a particular country, or in a group of counties, the banks would be in a better position to set more efficient strategies to accelerate the adoption of Internet banking.

In this research we concentrated on the analysis of the cultural factors impact on the e-banking adoption in 30 European countries, using Hofstede's dimensions Individualism, Power Distance and Uncertainty Avoidance, and Minkov's Indulgence vs Restrain.

The analysis has shown that the cultural factors affect the adoption in some combination, although the Individualism has a lead role in most of the cases. However, in the cases of a combination of high Uncertainty Avoidance and low Indulgence, the lead role of Individualism does not manifest.

We also argue, that in the cultural combination of high Individualism, and high Uncertainty Avoidance index with low Indulgence vs Restrain index, the combination of Individualism and Restrain factors reduces the influence of Uncertainty Avoidance, no matter how high it is.

The discussion on the other factors based on previous research has shown certain influences in the process of adoption. It is clear that there is a positive relationship between the trust in the Internet-banking as a system and the level of adoption of online banking.

The most important conclusion is that the cultural factors, in combination, play a very important role in forming the attitude and human perception about the value, usefulness and satisfaction from the online banking, and support forming a trust in the e-banking automation, platform and services.

Altogether, our analysis (Fig.2 above) shows that the cultural factors have a very significant role in the process of adoption at a national level. The knowledge about the cultural specifics of the particular country can help to support the banks in developing more efficient marketing strategies for the adoption of e-banking services.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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SMART-CONTRACTS VIA BLOCKCHAIN AS THE INNOVATION TOOL FOR SMES DEVELOPMENT

The main aim of the research is to develop recommendations for Cooperative model implementation in order to improve SMEs` performance by cost reduction through automating manual processes and attenuating legal risks regarding code-based SMART-contracts implementation via decentralized blockchain technology. The authors explored the main benefits for business entities of using SMART contracts as a digital tool for automating a large number of business processes in the DLT-system. Among with this, the potential risks for conducting the business activity of SMEs were considered, which could be exemplified as lack of legislation, high volatility of cryptocurrency, attenuation of monitoring level, etc. The usage of blockchain Smart contracts as the part of machine learning could lead to become SME Smarter, more dynamic, more flexible and more integrated with big data, which presupposes innovative component of business development.

In the context of Smart specialization implementation in developing countries in EU, the Cooperative Model between different stakeholders based on SMART contracts in the frame of Smart specialization was designed and proposed by the authors. This Model allows to involve non-top developed regions into the innovative process. Besides SMEs' participation, the Model provides cooperation between other participants: research and innovative centers, universities, government structures, non-government organization, big corporations. It was studied how SMART contracts make review the business process and revolutionize it, improving difficult collaborations between business and science organizations. The fragment of possible Smart contract program code was regarded as an example.

JEL: G12; G15; G24; G32

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Introduction

Innovative SMEs play a pivotal role in the economic growth of every country. Undeveloped SMEs are typical for emerging economies, Ukraine in particular, therefore, finding the relevant ways for further business development is a core problem among existing research mainly focusing on business activity and SMEs. There is a wide range of issues faced SMEs on daily performance, exemplified as:

- firstly, lack of institutional support and underdeveloped infrastructure for running an innovative business;
- secondly, a corrupted component in contract performance, e.g. cooperation between private companies and state institutions in obtaining licenses, getting resources, auditing procedures, etc.;
- thirdly, information asymmetry about best practices of business conducting for further successful functioning;
- following, limited ways of capital attraction over the globe due to lack of export potential distribution and scarce access to finance, especially to International funds;
- next, a high level of financial intermediaries` fees for their services;
- finally, communication problem between SMEs and research centres and innovative universities (high level of mistrusting because universities beware of collaboration with SMEs, while SMEs doubt in universities` innovative capacity.

Blockchain-based Smart contracts could be automatic tool for improving the effectiveness level of business performance for tackling the complex of the mentioned problems. Along with this, Smart contracts could become the basis for Smart specialization implementation in order to improve communication between different groups of stakeholders and accelerate innovative processes in regions.

Literature Review

A considerable amount of literature has been published recently on the blockchain innovation topic. Over the past decade, a great number of research in blockchain-based technologies has emphasized the use of Smart contracts. For instance, Hughes A., Park A., Kietzmann J. and Brown C. (2018) [1] persuade that they can be used not only for cryptocurrency apps but for other business ones. In their articles, they looked through the history of blockchain and discussed how Smart contract could be operated by entrepreneurs, policy-makers, representatives from energy and healthcare sector as well. The other paper below proves it. According to the comprehensive study of Radanovic I. and Likic R. (2018) [2] where they reviewed that blockchain technologies can be widely used in medicine. Smart contracts are applicable to medical insurance. At the same time, they propose how to overcome barriers for Smart contract using in this sphere.

Jamison M.A. and Tariq P. (2018) [3] in their study reveal the myths about Smart contracts utilization. Among them, the authors call removing for trust, high demand in electricity and as well put in doubt the Smartness of Smart-contracts.

There is a lot of papers devoted to Smart contracts in the frame of corruption reduction. For example, Madan C., Sinha A., Sharma K. (2019) [4] in their article regarded them as a way for improving the political situation on the country by decreasing influence of powerful persons.

Hazard J., Sclavounis O., Stieber H. (2016) [5] pinpoint a number of similarities between historical evolutions (for instance, the evolution of printed technology and increasing literacy in European cities, the spread of Protestantism) and blockchain-based Smart contracts development. In the same way, these events are able to change and to decrease the contract costs. Moreover, they are expected to make an impact on the financial exchange.

Smart contracts have a high potential for elimination problems in trade finance. Bogucharskov A., Pokamestov I., Adamova K., Tropina Z. (2018) [6] represent the mechanism of digital letters of credit and factoring based on Smart-contracts and its influence on trade finance process. Then they reveal a set of problems which can be solved with blockchain-based Smart-contracts.

For financial risk monitoring by regulators, Kavassalis P. et al. (2018) [7] offer to use "digital doppelganger" for financial documents making Smart-contract. They conclude that Smart-contracts application can adjust the abilities of regulators to control financial risks of business organizations.

According to the study of Brammeretz W. and Mendelowitz A. (2018) [8], Smart financial contracts should be standardized due to the different possible risks (for example, market risk, counterparty risk, credit and behavioural risks). They also propose the algorithm of its realization. On authors opinion, it allows to reduce cost expenditures for financial companies, financial reporting, regulation, and to increase the transparency of the financial market.

Smart contracts also caused changes related to the audit and financial reporting. Rozario A. and Vasarhelyi M. (2018) [9] suggest about audit quality improvement, at the same time, they debate about challenges related to changes in the world of financial reporting. Therefore, Smart contracts are changing the traditional meaning of accountancy. According to this, Kokina J., Mancha R. and Pachamanova D. (2017) [10] consider in their research paper about how Smart contracts can be adopted at this sphere. They trace the development of this innovative technology in real cases at large transnational auditing firms. In addition, the scientists try to predict the potential areas of Smart contracts applicability in future.

One more evidence about the broad use of blockchain-based Smart contracts is work of Shatkovskaya T. et al. (2018) [11], where they prove that this technology has an influence on the technological paradigm of intellectual property rights. They regard Smart contract as a way of intellectual property rights guarantee. Moreover, they propose to accept at nations level Smart-contract application.

Nowadays, Smart contracts play a crucial role in international trade, improving the supply chain. In this context, Kim H., Laskowski M. (2018) [12] analyzed the ontology and its application at Smart contracts. The last serves as executor of provenance trace and enforcement of traceability at Ethereum blockchain system.

Sun J., Yan J., Zhang K. (2016) [13] point out that blockchain-based Smart contracts can contribute to the Smart city development. Due to this, they designed a conceptual framework with such elements as human, technology and organization. The authors also proved a wide application of Smart contracts at sharing economy projects.

Suliman A., Husain Z., Abououf M., Albooshi M. and Salah K. (2019) [14] worked out the blockchain solution of Smart contracts application in Etherium for data monetization IoT without any intermediary. They focus their study on such key points as business relations, architectural design, logic flows etc.

Smart contracts formed the central focus of a studies by scientists of law. Millard C. (2018) [15] discusses data protection issues and as well pays attention to the identification of conflict types of which occur with disruptive innovations as Smart contracts. There is also a study of Giansparo M. (2017) [16] who discuss Smartness of Smart-contracts idea. In spite of Smart contracts' benefits, he emphasis on negative factors of Smart contracts for traditional intermediaries. In addition, the author makes a forecast about the difficulties of Smart contract law adaptation. Shermin V. (2017) [17] suggests that blockchain-based Smart contracts are a disruptive innovation which can lead to the serious structural changes in management in future, but at the same time there is a problem of all sides stockholders' consensus. It is quite difficult to reach it; therefore, new agents' problems may strike, and it can provoke a different type of risks. The similar opinion has had Krabec T. and Venegas P. (2017) [18]. Thus, the researchers claim that Smart contract is in balance among their utility and decentralization risk.

Marend N., Norta A., Mahunnah M., Ma L. and Maggi F. (2016) [19] regard conflicts at virtual enterprises which use Smart contracts and the ways of their solutions. They propose the algorithm which can eliminate the problem or at early stage to solve it. This algorithm was used in automotive production entity. In addition, some of these scientists (Dai, P., Mahi, N., Earls, J., & Norta, A. (2017)) [20] considered the advantages of Qtum technology and its utility and blockchain and try to predict the development of Smart contracts apps for industry case.

Far and away, these and other research on blockchain-based Smart contracts help to understand what is already studied about. Nevertheless, there are related problems with the application of this innovation in the frame of Smart-specialization Strategy in the European Union, which is a core interest of our research.

1. Theoretical Background of Smart Contracts via Blockchain

Smart contracts are contracts which execution depends on pre-determined conditions exemplified as payment terms, collateral, privacy, enforcement, etc. and proceeds in a secure environment, namely Blockchain without third parties`meddling.

In term, Blockchain represents the digital network and distributed ledger technology (DLT), which allows to verify, execute and record all transactions, performing via this technology. It is a certain computer algorithm using cryptographic encryption for every transaction execution in a distributed network. Blockchain presupposes computer protocol usage aimed at control digital assets and its flow only in case of proper validation by digital signature confirmation.

Though, Smart contracts are computer-coded agreements on every Blockchain among which Etherium (ETH) is mainly applied in business processes. The most popular Blockchain application, namely Bitcoin (BTC), allows to record the mining, creation and transfer of bitcoin, while ETH along with the mentioned options stores such computer scripts as Smart contracts and decentralized applications simultaneously recording their state on every stage of contract performance.

The Smart contract usage in business activity enables to optimize different processes like minimization the need of mediators (banks, lawyers, notaries, other financial institutions), cost and time efficiency for newly developed or existing business models. These contracts are based on a traceable and irretrievable way of execution through Blockchain technology.

Only electronic implementation principle, pre-defined conditional nature, self-sufficiency, self-execution and high level of certainty could be considered as features of Smart contracts performance. Every Smart contract via Blockchain characterizes by absolute transparency for all parties within the defined system, which means that no transaction actor could deselect or pull unilaterally from any action made in Blockchain. This feature allows to eliminate the risk of uncertainty of contract performance, possible fraud and transform traditional transactions through intermediaries to automatically executed electronic ones.

The detailed analysis of Smart contracts with underlining the main principles, types and advantages for implementation into business activity is shown in Fig. 1.

These all mentioned benefits, especially lack of mediator services, cost and time efficiency, savings in operational costs and reduction of different risks, could be considered as useful tool for business performance by SMEs in order to promote their further development, increase their real potential, improve their investment attractiveness and eliminating the level of information asymmetry.

In previous research authors [26] emphasized that establishing of Information and Communication Platform could be the solution for the reduction of financial and information illiteracy among Ukrainian SMEs by the availability of such data as governmental regulation procedures, funding programmes, different investment programmes, analytical reports and expert conclusions, etc.

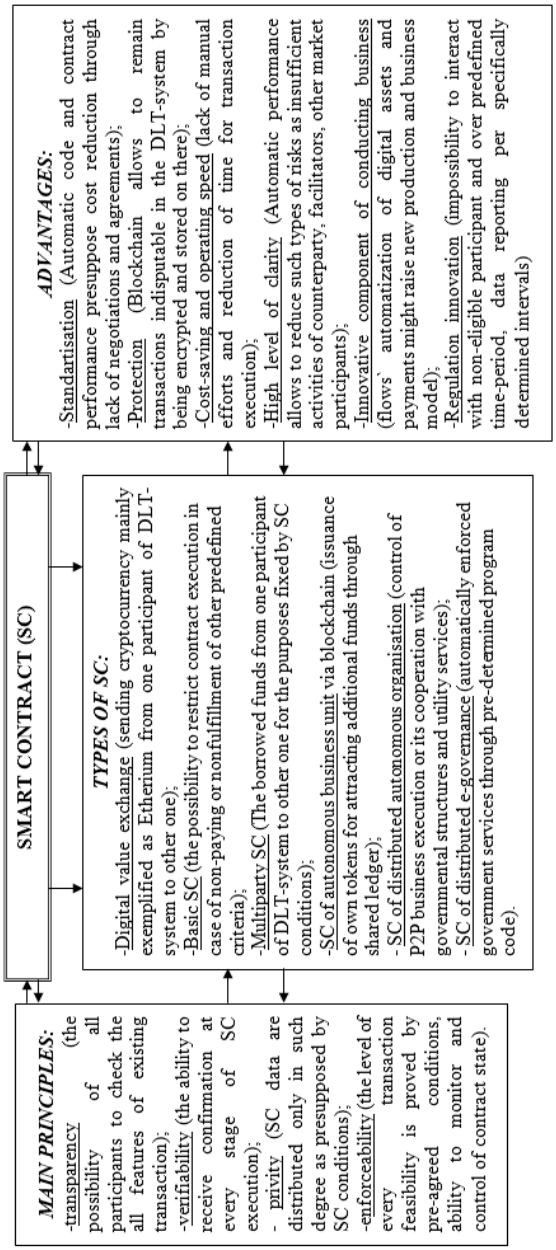
Additionally, to the proposed view, asymmetric information can be minimized by Smart contracts usage by the execution of opportunistic behaviour, lack of mistrusting and fraud by automatization of all transactions [27].

The usage of these digital protocols namely Smart contracts could overcome different risks which are mainly connected with the contractual relationship by raising the level of

traceability, controllability, accountability, feasibility meanwhile reduction expenses which are very beneficial in case of SMEs.

Figure 1

Essentials of Smart contract execution via Blockchain



Source: formed by authors on the basis of [21-23]

2. Benefits vs Potential Risks of SME Smart Contracts

Applying digital Smart contracts into business activity does not require a set of actions to be concluded, which includes the identification through digital key, blockchain technology via which deal will be encrypted, the cryptocurrency wallets for connection to real business activity (necessary amount of digital currency is frozen and stored in blockchain until the contract validation) and predetermined conditions under which the contract will be fulfilled.

The possible benefits for SMEs can be considered as follows:

- time efficiency (no document verification by legal institutions, all transactions can be done automatically, speeding up of information processing and its validation by predefined conditions);
- cost-efficiency (cost optimization without any fees to intermediaries like banks and non-banking institutions for transaction processing);
- the autonomy of deals (no need of real presence of participants for contract validating because of the self-executed protocol in which all contract fundamentals as collecting funds, transaction realization, resources` distributing are encrypted in the application program code);
- full decentralized contract (no control from one central server or legal authority, contracts perform in DLT system);
- high level of security (without reliance on third party actions, all transactions blockchain technology allows to record and store data about all transactions preventing from lost or change of data, and the cases of data-stealing from decentralized system are also impossible).

Along with improving the effectiveness of the business activity, there is a set of disadvantages, which detailed analysis is considered in fig. 2.

Among them, the most influential ones are:

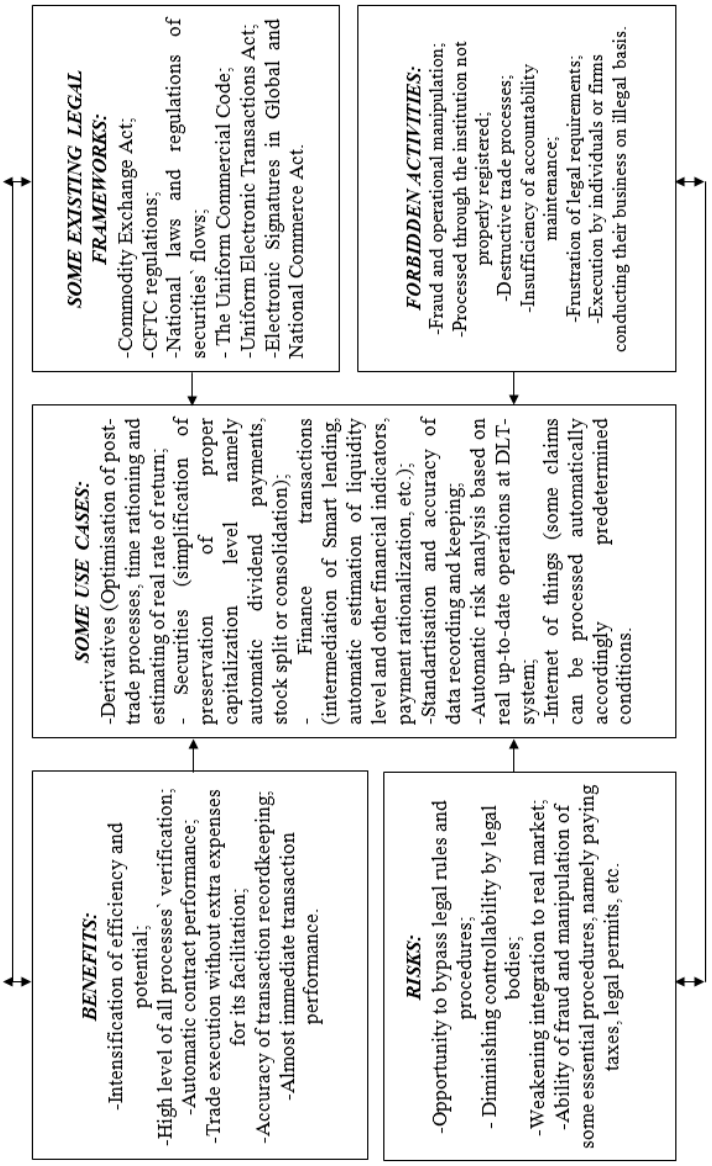
- uncertainty in regulation and legal status (implementation of some regulatory framework could eliminate possible risks connecting with crypto activities);
- behavioural component (the possibility of human error in code encryption can lead to increase of vulnerability risks);
- no changes (in the case when the contract was executed it is impossible to make changes or cancel the deal);
- the possible implementation only by additional help from specialized Blockchain developer.

Such spheres as accounting, banking, insurance, trade finance, stock exchanges, etc. apply blockchain technologies into their activities [28]. Though, Financial and IT sectors are pioneers in implementing Blockchain.

It was estimated that Smart contracts in DLT system could lead to cost reduction up to 18,4 bln Euro annually by 2022 [29]. According to European Union assessment about 4,6 bln Euro was invested into the international payments system operating on blockchain [30].

Figure 2

Features of Smart Contract Applicability into SME activities



Source: formed by authors based on [22-25]

One of the successful cases of Smart contract implementation is SMART Grid, that means modernized power supply networks that use information and communication and technologies to collect data on energy production and energy consumption, which automatically improves efficiency, reliability, economic benefits, and sustainability of production and distribution of electricity. Now there are several types of energy (water, solar, wind, coal burning, atomic etc.) and these networks are very complicated therefore previously it is difficult to identify from what type of energy and how much the consumer receives it. The consumers earlier as well could sell their excessive energy if they had obtained the certificate of green energy producer. It took a lot of time and involved personal and only after receiving confirming that status document they could sell it signing traditional contracts. With the appearance of Smart contracts, the process of data collection, receiving a certificate and signing the treaties became shorter and easier. Because of the blockchain platform, the sellers and buyers are registered, and they have a choice right what supplier of electricity is the most appropriate and as well what consumer is suitable in the frame of partnership.

Though, in such SME activities, which are connected with P2P transactions, secure data sharing, information transfer and storage of any trade processes, it is beneficial to apply Smart contracts considering the potential risks and benefits.

3. Redefinition of Doing Business within Smart Contracts

The current business model could be innovated via Blockchain, which creates a new form of collaborative cooperation between different agents based on trust and transparency.

Despite all advantages of implementation of Blockchain based business model, there is no mass its application in conducting business.

Smart contracts could easily lead to a redefinition of SMEs, enabling enhance the creativity of private entrepreneurs, trough transformation traditional services to automatic ones because of open-source code for blockchain application.

Smart contracts are also considered as far as the type of artificial intelligence where machine-to-machine automatic processing could make every transaction without human interaction. Along with this, the key role is played by the trust, which is typical for Blockchain technology by default. As a result the most corrupt economies might change their general policy. In this case, SMEs have the potential to raise their capacities and innovativeness by applying all the mentioned benefits and resources.

The blockchain-based business model is characterized by:

- ability to attract capital directly from investors over the globe without using funding schemes as crowdfunding, angel investment or investment by ventures or to raise funds from the public through ICO (restructuring traditional funding schemes as fundraising and traditional investing);
- almost simultaneous liquidity with blockchain tokens;

- the real reward for adopters and complementors with krypto tokens by formation communities at early-stage of development;
- capacity to continue development through token trade within open-source projects.

In the context of SME development, Smart contracts could become an effective way for a time, cost and human sources. Redefinition traditional business model for SME could attract additional capital through tokens performing their activity via Blockchain-based on proposed in next chapter cooperation model.

4. Smart for Smart (Smart contracts for Smart Specialization)

A smart specialisation is a new approach that aims to increase economic growth and job places in European countries, where each region can develop its own competitive features. It also means that a great number of stakeholders join to common innovative projects. Among participants of the Smart specialized project can be SMEs, research and innovative centres, universities, government structures, non-government organization, big corporations. Although all of them united by a common idea, usually, projects with a high number of members feel problems related to a relationship forming, including making contracts.

Therefore, Smart contracts due to their abilities are called to solve them. The Model of cooperation in the frame of Smart specialization between different stakeholders based on SMART contracts can help to realize the project cutting off mentioned problems. In our opinion, Smart contracts are the instruments which will help to create an ecosystem for efficient implementation of Smart specialization strategy. In addition, it'll allow to take part for stakeholders from non-EU countries because it escapes the problem of low transparency, corruption, failure to comply with the undertaken obligations.

Below there is the schematic description of Model of cooperation in the frame of Smart specialization between different stakeholders based on SMART contracts. At the Blockchain platform, it is possible to describe the actions between stakeholders by following code (fragment of code), described in fig. 3.

The developed Cooperative Model (fig. 4) requires the completion of the next steps:

0 step – Forming database by stakeholders (SMEs, Research Centers, Universities, NGOs, corporations) from different regions. One of them has a need to implement innovation development into their activity. The others have resources and the possibility to develop these innovations. The advantage of the database which is allocated at Blockchain Contract is that Research Centers and Universities can easily cooperate in spite of different barriers (distance, asymmetry of information etc.)

1 step – Agreement of Smart contract conditions between stakeholders. It means that on this phase, parties discuss the price of research and development, terms, responsibilities, amount of work, specific of work, force majors etc. This step is rather important because this is the case of a non-flexible contract; therefore, potential partners should pay attention to this aspect.

2 step – Smart contract formalization. Ordering innovation customer transfer funds on an account at Blockchain platform, then convert them into cryptocurrency and froze there until the work will be done and executor will deliver the result of R&D. If the conditions of the Smart contract will be accomplished, then the University / R&D Center / Innovative SME will receive the cryptocurrency. It is also possible to exchange them into real money. If the conditions will not be executed, then funds automatically transfer on the ordering innovation customer.

Figure 3

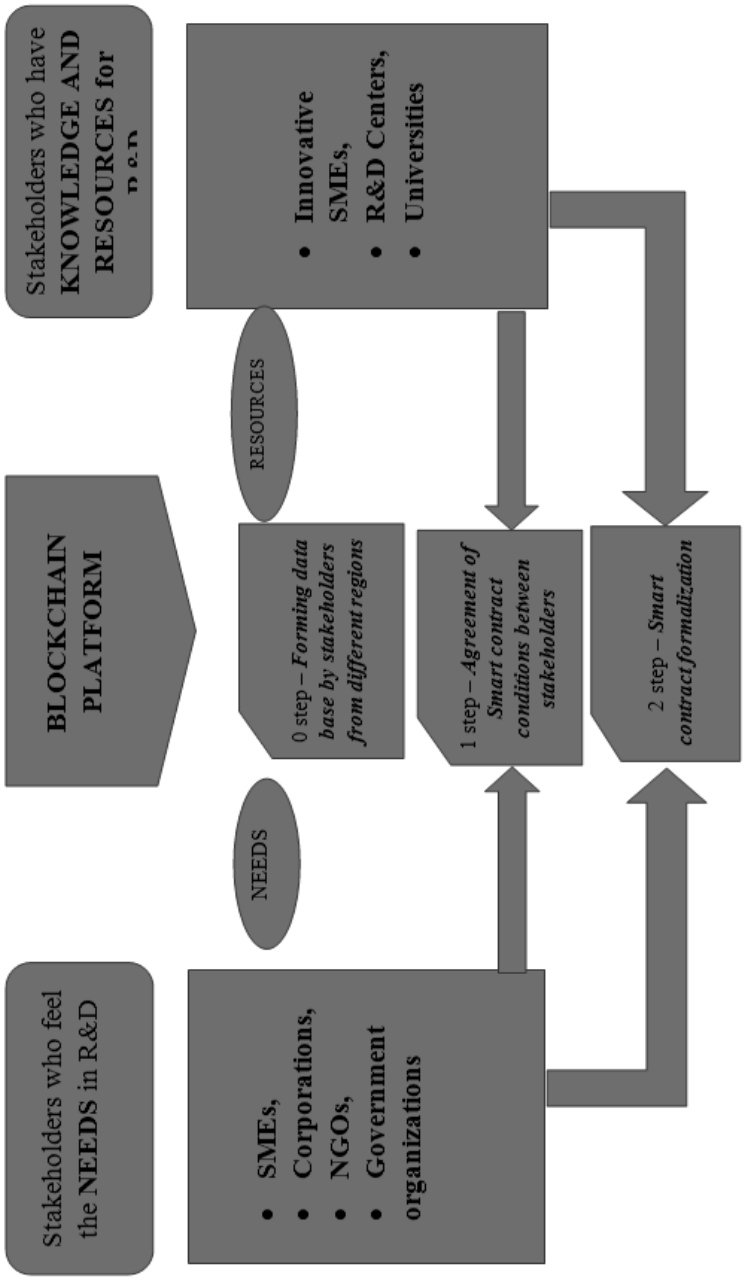
Fragment of code for Smart contract execution by SMEs

```
contract MyToken {
   /* This creates an array with all balances */
   mapping (addressSME => uint256) public balanceOf;
   /* Initializes contract with initial supply tokens to the creator of the contract */
   constructor(
      uint256 initialSupplyResearch
      ) public {
      balanceOf[msg.senderCoreSystem] = initialSupplyResearch;
   }
   /* Send coins */
   function transfer(address _to, uint256 _value) public returns (bool success) { // Send
coins to research group
      require(balanceOf[msg.sender] >= _value);          // Check if the sender has enough
      require(balanceOf[_to] + _value >= balanceOf[_to]); // Check for overflows
      balanceOf[msg.sender] -= _value;                   // Subtract from the sender
      balanceOf[_to] += _value;                          // Add the same to the recipient
                  require(allSMERequirement.isDone());                                    //
Ensure that all SME requirement has been done
      return true;
   }
}
```

This Model (fig. 4) allows to join stakeholders from different regions, finding the most appropriate variant for the R&D research. In addition, it may boost the action plan of the Smart specialization strategy.

Figure 3

Cooperative Model between different stakeholders based on SMART contracts in the frame of Smart specialization



Conclusions

Disruptive technical innovations like Blockchain-based Smart contracts definitely redefine the traditional business model. Designed Cooperative Model between different stakeholders based on SMART contracts in frame of Smart specialization with developing specialized Smart program code allows to increase influence on business such potential benefits as cost- and time-efficiency, manual processes` optimization, improvement of accuracy level, etc. and eliminate the possible risks namely lack of regulation framework, human factor in possible errors of code programming and predetermined conditions, possible fraud of some procedures, like paying taxes, legal permits and so on.

In the context of Ukraine readiness to join to Smart specialization strategy, there is an urgent need to adopt legislative, technical, managerial and financial requirements in order to have the capacity for implementation the developed model. Some specifics of each requirement should be clarified as follows:

- legislation: on National level the forms of Smart contracts should be indorsed alleviating the bureaucracy level at such inflexible structures as traditional universities and research centres;
- technology: access to data of Smart contract transactions does not require special knowledge and skills for ordinary users, while installation of program code for Smart contract formalization needs specified skills of program developer;
- Management: Smart contract execution relies on predefined conditions designed by related personnel (managers, lawyers, financial analysts, etc.); they should be prepared after course completion to meet instruction of Smart contract usage. As Smart contracts provide transparency and reduce corruption, there is a need to conduct elaborative work with the mentioned users;
- finance: using Blockchain technology does not presuppose high financial fees, whereas the development of Smart contract program code needs some financial sources for these services.

The role of higher education institutions in the frame of the Smart specialization strategy is reconsidered. Therefore, for Ukrainian universities and other innovative structures, a new phase of developing is coming soon. They should be ready for them and as well for the new forms of cooperation with the private sector. SMEs have already started to use Smart contracts, and universities have to be ready to apply them as well for better and more efficient partnership. It means that they have to predict the risks' reduction related to Smart contracts and develop a sophisticated system of Smart contract conditions.

Implementation of the proposed Cooperative model by SMEs could lead not only to the improvement of collaboration between private, research and other stakeholders but also to better business performance by automatization of the most significant business processes.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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THEORETICAL ASPECTS OF POLITICAL ADVERTISING

The historical roots and subsequent development of political advertising in the modern world are examined. A definition of this type of advertising is derived based on a review of some of its most important scientific productions. The views of leading theorists of political advertising in the twentieth century are presented. A classification of the main types of political advertising is made.
JEL: M37

Political advertising is one of the most important tools for effective communication between parties and citizens in the modern world. It is also an essential element of the electoral process and an inevitable component of shaping the political image of politicians and parties. Political advertising should, therefore, be studied and analyzed insofar as its application in election campaigns and politics has long since become a regularity. But there is something more: the undeniable political advertising has certain positive values, but their scientific understanding can hardly be argued that we know this phenomenon. However, this important importance of political advertising is not taken into account in the specialized literature, since there are a number of publications that usually consider political advertising in its own right. In many cases, political advertising is excluded from the context of theoretical political marketing, is not scientifically determined, and has traditionally been regarded as merely an additional practical manifestation in current electoral politics. This also leads to a series of deeply incorrect and superficial interpretations of the phenomenon of "political advertising", which almost commercialize the concept of its nature and subsequently discourage people from actually studying it. In this context, we will first look at the historical roots and development of political advertising within political marketing (including its definition) and the views of the leading luminaries of political advertising in the 20th century, and then distinguish between different types of political advertising.

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1. Historical roots, definition and development of political advertising

The emergence and development of political advertising in different societies is a relatively long and continuous process. It is usually thought that it began in the 1920s – 1930s, when the first professionally prepared election campaigns were organized in the United States and Western Europe, in which print and radio political advertising occupied a particularly important place.

Historical facts, however, tell us that the use of political advertising in social and political life dates back much earlier, has its archaic genetic roots, although it is not made by specialist advertisers. For example, the term "political advertising" was first mentioned by Bolshevik leader Vl. I. Lenin, including as "election advertising", as early as 1912 in his article "Political Parties in Russia" (Lenin, p. 269). In the article, he scourges the manipulative nature of political advertising without deriving any definitions or characteristics. His followers, however, underestimate this and strongly reject the term with the well-known ideological cliché "the product of bourgeois propaganda". However, the main symptoms of political advertising can be discovered even before the new era, when politics emerges as a social phenomenon in parallel with the emergence of forms and means of political struggle in the "battle" for power. It is true that the approach to persuading people is fundamentally different from the current (communicative) media invasion during elections, but it is equally as true that even in the cradle of human civilization – Babylon, Greece, Rome and Ancient India are found beginnings of future political communication and advertising.

The germs of advertising political activity in Antiquity are first born through political communication between citizens and the ruling elite. Even in **Ancient Athens**, the political words (as a tool of information), reaches its apogee in the famous oratorical speeches of ancient thinkers who laid the foundations of exquisite political rhetoric, is of particular respect. These primary forms of advertising and influence, though partial, are possible (and used) mainly during the time of remarkable Athenian democracy, even though the information itself then contains considerable manipulation because of the specific power intentions which are pursued.

Original pre-modern forms of political communication can also be found in the social life of **Ancient Rome** (III-I century BC), dating from political activity almighty emperor **Caesar**. Such forms are: parchments drawn up with the words "Daily Public Records" ("Acta Diurna"), which inform the citizens about the actions of the Roman rulers; **the first political poster – "Vote for Cicero! He's a Good Man",** as a major advertising tool in the election campaigns then; the continuation (and further development) of the strong rhetorical tradition in antiquity through public political speeches (the speeches of Caesar, for example, from the 1st century BC) and some others. This tentive trend is further developed by M. T. Cicero, who has the unfading glory of one of the proclamators of political advertising in its classic version (slogan and poster) (Utchenko, 1985, p. 25-35; Kushovska, 1993, p. 324). Or, in the political history of Ancient Rome, there are several basic elements of election campaigns – political speech, advertising posters and political inscriptions, which today are also important tools (and forms) of contemporary political communication (and advertising).

One thing is absolutely certain: the ancient forms of political advertising which are used, apart from their appearance as a fact, are intended to convey manipulative information that cleverly conceals existing power defects (in politics) to persuade people to the contrary, i.e. in the rightness of the policy chosen for the moment. Thus even **in ancient societies** begin **to crystallize a key evolutionary line of political marketing** inevitably pushing through the coming centuries, namely: **political information (such as plain fact) in political communication (as a tools of communication and influence) the political advertising (as a form of communication) and to political manipulation (as a way of pseudo-influence and false influence)** (Manolov, 2001, p. 52-72).

Almost the whole of the **Middle Ages**, no significant achievements were noticed, not much of a marking new peaks in the development of political marketing (and advertising), they were only partial. Because, as is well known, the primacy of Church Theological doctrine is dominant in all social spheres, and it would be a real revolution if someone to attempt to do anti-clerical or other political agitation and activity. And yet, not the cursed and overthrown heretics, but the Roman Catholic Church itself was the first to put into circulation the word "propaganda" for the needs of its theological ideology. And in 1622, Pope Gregory XV created the "Holy Congregation for the Propagation of the Faith," or the renowned College of Propaganda, whose primary mission is to teach Catholic missionaries how to "wash" (and earn) people's minds and hearts according to the dogmas of ruling church dogma. And although in this case, we do not use typical advertising forms, it is sufficient to recall that in this way (with religious symbols) the church-political doctrine of the church is advertised.

We have to note that in the Middle Ages the most common is mouth advertising when criers shout in the streets and market places, and owners of small shops and inns hang a variety of colourful signs to attract customers. And one more thing: in 1629, the first advertising agency was established in France – the "Rennodo Announcement Bureau", which began mass advertising of the so-called "sheets" in the then first printed editions (Ilieva, 1996, p. 11), which, of course, are not many.

Exclusive impulse for further improvement of communication techniques provide several important factors developed in the late of the Middle Ages and the beginning of modern times, such as the advent of printing (1436), and especially the birth of the first newspapers in the second half of the seventeenth century (1831, Gazette de France in France).

The evolution of advertising can be seen in the so-called. The "early-capitalist period" in Europe (17^{th} – 18^{th} centuries), during which the market economy developed. Then advertising becomes an important function of publicity, and emerging parties appoint advertising professionals. Suffice it to recall the creator of the first printed advertisement B. Franklin (USA) and his newspaper "Gazeta" (1729), in which most of the eighteenth and nineteenth century Republicans and Democrats publish their election ads. This is because, according to Bucher's well-known definition, "the newspaper accepts the character of an enterprise producing advertising space in the form of a commodity which is marketed by its editorial department" (Habermas, 1995, p. 283). This is confirmed by the **primacy of political advertising, which was featured in English newspapers in 1805.** Moreover, the election and advertising struggles were so fierce at the time that an "Anti-Government Campaign Responsibility Act" was adopted in 1798 to prevent false, malicious and scandalous campaign activities (Debates 1834-1856: 3776-3777) (incl. and the use of

advertising political compromises). However, the true professional development of political advertising can only be talked about in the era of industrial capitalism, when both the market economy itself and the established public (political) institutions are completely different from before, i.e. contemporary look.

With the creation of photography in the first half of the nineteenth century, another powerful means of political advertising emerged, which, along with the print media, is currently making a huge impact on the electorate during political campaigns. It is no coincidence that the famous Western scientist **Roland Barthes** (1995) emphasizes that "a candidate's photograph expresses (...) his motives, all family, mental and even erotic circumstances, the whole style of behaviour, whose product, example and lure he is" (p. 95). A fact that in our day and age does not lose its "election significance" at all.

By the way, we will note that as early as the "sunset" of the 19th century the old advertising gathering and unprofessionalism in advertising was put to an end at the expense of its institutionalization in the country. The legal foundations for regulating and self-regulating advertising are laid, and as early as 1891 an advertising law was passed in Germany, and in 1906 the Americans approved a specialized federal act that contained strict advertising rules and restrictions. (Doganov, Palfi, 2000, p. 31).

One of the pioneers of political advertising in the world is Franklin D. Roosevelt, who, in 1916, began using this advertising in his own campaign. He published his messages in the “Saturday Evening Post,” as well as in some other American magazines, and in 1917 the Congress on the Political Advertising Act was already discussed in the US Congress (Burudjieva, Kaneva, 2007, p. 17).

In the 1920s and 1930s, advertising gradually began to enter the political life of the West through political radio advertising, and since 1920 these advertisements became a regular practice. At the same time, American citizens are constantly campaigning with other election aids, such as leaflets, posters, parades, and rallies. After the end of World War I, mass media in developed countries began to systematically reproduce the image of political leaders among the mass electoral audience. In 1924, US presidential contenders Kelvin Coolidge and his opponent, John Davis, first purchased radio advertising time (to present their political platforms), prompting Americans with interest in listening to the thirty-minute radio debate. It is also noteworthy that even then, in the first political disputes, the logic of the rallying stereotype was strictly followed (Doganov, Palfi, 2000, p. 327-328) – first the presentation of the candidates, then their biographies data, and finally their speeches.

Amid to all of this advertising has accelerated its way into politics, why the number of advertising artists began to participate in the election campaigns of Adolf Hitler and Franklin D. Roosevelt in the 30s of last century. The reason, researchers say, is only one: both drivers are dear children of the first modern heirs at the time – cinema and radio. For National Socialists, for example, Goebbels (after 1924) is gradually changing its strategy of seizing power: first, the advertising accents become conversational, albeit too aggressive; second, the formulated slogans offer the Germans what they really lack – order, goals, authority, etc.; and lastly, everything is organized so that the Fuhrer launches itself as a "star brand". However, despite the pronounced and aggressive political advertising system

remains manipulative propaganda as completely having false advertising product – something that is very characteristic of every totalitarian regime (Doganov, Palfi, 2000, p. 327-328). But if the advertising in Roosevelt's campaigns (especially in 1936) is reduced almost exclusively to the famous advertising texters, then, as we have seen, things are different in Germany. FD Roosevelt's popularity is steadily growing because his political advertising relies on an extremely effective method: patient explanatory work, bringing in personal fascination and influence, a simple and clear explanation for the need for reform, and finally – impressive 'radio talks in front of the fireplace', with which the image of the future president has repeatedly increased. Since the end of World War II, the evolution of political advertising has been steadily continuing through the use of the most modern media at that time – radio. This is happening on June 17, 1948, in the United States, when the first presidential candidate debates took place between opponents Thomas Dewey and Harold Stassen on KEX-ABC Radio Station in front of about 60-80 million listeners (Stoyanov, 2017, p. 34) – something as colossal as political interest in the then-electoral battle across the Ocean.

But the "political advertising" phenomenon was finally introduced to society only in 1952, when for the first time in the United States, Presidential candidate Dwight Eisenhower entrusted professional work on the preliminary campaign of Rosser Reeves advertising agency. This, according to the advertiser D. Doganov, is the first political advertisement, organized from the beginning to the end by the laws of advertising (Doganov, Palphy, 2000, p. 329), which naturally brings Eisenhower's victory over the favourite Adlai Stevenson mainly through the use of videos (for example, the motto of such a video is "Eisenhower meets America"), the main factor behind this victory was the use of new advertising techniques for spending the money that R. Reeves himself successfully applied during the campaign.

"... It's about," Reeves writes, "two mathematical factors. First, television spots against radio broadcast speeches – the spots provide a wider audience. Second, the memories – they have 8 per cent in Stevenson's speeches and 21 per cent – in Eisenhower's films" (Doganov, Palphy, 2000, p. 329).

It should be logical to summarize that the use of political advertising in the 1950s in the United States marks a completely new stage in the overall development of political marketing, because, on the one hand, the barrier to propaganda "propaganda and rallying doctrines" is lowered "(D. Doganov), who have been ruling so far; and, on the other, the decisive launch of modern political advertising (radio and television), which underlies all subsequent election campaigns. In confirmation of this must be pointed out that "the massive influx" of political advertising gradually flooded American continent (in the 60 years of the twentieth century), the countries of Western Europe (over 70s) and the new democracies in Central and Eastern Europe (in the 1990s), as a result of which this type of advertising really became a leader in election campaigns. And like election campaigning, **advertising in politics not only totally invades the political life of modern societies** but also becomes an important element of the work of governments, parliaments, institutions and in general of all state bodies.

These are the main impediments to the evolution of political advertising over the centuries in the United States and in Western European countries, which have given us reason to

carry out its periodization over the centuries. Or, to put it another way, above all; **the views expressed about the evolution** of political advertising are of particular importance also for its **historical stages (and periodization**), to which little theoretical attention is paid.

According to our view, the stages of development of political advertising can be deduced **by the criterion of "historicity"**, which relatively best and adequately reflects the evolution of this advertising. Depending on this, the main stages of political advertising can be differentiated **into four key stages:**

1) **A pre-classical stage**, which is determined by the fact that it is precisely during the period from the III-I centuries BC. to the 1st century of the new age, the first political advertisements appeared during the election campaigns in ancient societies (Athens, Rome, Egypt). This is also the first sub-stage that is indisputable in terms of the origin of advertising in politics. And as far as the second sub-stage is concerned, it is largely sympathetic (which is why we give it in dotted lines), because throughout this period – from the 5th to the 17th centuries, the manifestations of political advertising were rather a propaganda, as much as real political inscriptions, words and advertisements.

2) **The classic stage** of the evolution of political advertising – it lends itself to more difficult periodization and evaluation because of the significant "temporal vacuum" in which it (political advertising) develops practically. Yet here we also distinguish between two distinctive sub-stages: one dating from the end of the eighteenth century (when the first newspapers appeared) to the 1920s, during which the first election campaigns (USA, Germany, etc.) were organized on a professional basis.) and expertly prepared print and radio ads appear; and the other sub-stage is in the 1920s, 1930s, and 1940s, during which the evolution and use of political advertising spread in political strife between parties (in the US and Western Europe), though temporarily interrupted by WWII.

3) **The modern stage** of this periodization, which unfolds from the early 1950s to its end and is characterized by being the most developed and fruitful period, because the phenomenon of "political advertising" it is finally being imposed on the political market in developed countries (both in theory and in practice). It has two main sub-stages: the first is rather pragmatic, since political advertising and its types (print, radio, television, etc.) are widely used in the social life of the West by different political entities; while the latter without any conditionality will be defined as "theoretical" insofar as the theory of advertising (including the political one) is booming during this time (although this sub-stage runs in parallel with the first).

4) **And the last, the Internet**, a stage that is completely "born" with our present day, at least is the "peer" of the high-tech 21st century, from the beginning of which we are talking about the introduction of a new phenomenon in the evolution of political marketing (and the market), what an unconditional political internet advertisement is. This extremely modern and popular form (type) of political advertising is the result of the so-called. A "digital revolution" in technology, which makes it impossible without today's successful political and election campaigns.

So, the global conclusion that follows from and implies so far can be summarized in **four** broad directions: **the first is that, since ancient times, the authentic roots of political advertising in all subsequent historical stages until the 20th century grew only as separate (and very initial) forms of election political advertising.** This represents a "history" of political marketing (and advertising), or a stage of laying the primary social, political, and party prerequisites for the development of this advertising marketing from the late 19th and the following 20th centuries. **The second** relates to the fac**t that the original varieties (and forms) of some organized political advertisement arose first and foremost in the USA and then in Western Europe (Germany) thanks to the earlier formation and development of political parties and the emerging statehood, and as a result of the institutionalization of election campaigns**; **The third** reflected in the fact **that absolutely all forms of advertising in politics are manifested either partially in specific political practices or during election campaigns, which is clearly evident in the second half of the last century. And the last direction** is related to **the various theoretical studies of political advertising**, which with very few exceptions have been totally developed since **the early 1950s,** when a number of major scientific developments in this field (mainly in the USA and Western Europe).

Despite its dynamic practical development and theoretical coverage in the second half of the twentieth century, the term "political advertising" still remains unclear in some scientific relationships. However, this is also the case with the certainty of advertising in general, which requires that we pay attention to this issue because it is directly related to the definition of political advertising.

As you might imagine, there are a number of definitions of the term "advertising", among which the most popular of foreign authors are the following four: (a) According **to the American Marketing Association (AAM),** advertising is any paid form of impersonal presentation of ideas, goods or services from a well-established source; (b) According **to the European Association of Advertising Agencies (EARA)**, advertising represents any paid form of controlled influence through the mass media, on the presentation and imposition of goods and services in the interest of an explicit source (Manolov, 2009, p. 278); c) according **to the so-called a "strong" theory** of advertising (**John Phillips Jones)**, it is an effective tool for influencing buying behavior through a hierarchy of steps, including brand awareness, favorable branding and brand awareness (Zhelev, 2013, p. 34); d) according to western authors **Philip and Christian Palda (2005),** pre-election (political) advertising can be defined as the efforts of candidates to present themselves to the public through payment to the media, through the propaganda of propaganda posters, and through the use of “by door to door” (p. 367); e) according **to the Russian scientist S. Lisovsky (2000)**, advertising in politics (political advertising) is a form of political communication that, in an election environment, addresses the electoral groups through a specific political platform aimed at forming different psychological influences. On voters (on their feelings, emotions, sympathies, etc.) (p. 15-16); f) according to **American researcher L. Kaid** (Kaid, 2004), the concept of "political advertising" should be understood in several essential respects: as a communication process propagated through mass communication channels in order to influence political attitudes, beliefs and behaviour; promoting the ideas of parties or candidates in the election campaign; also as a platinum or free form of communication with the electorate (p. 155-157); g) according to the **elite advertiser R.**

Reeves (Hopkins, Reeves, 1994), "as we have already said," advertising is the art of introducing an exceptional sales offer in the minds of the largest number of people or the lowest its production costs' (p. 266). Here, as with many other marketing terms and definitions, the definitions are dozens, not to say hundreds, which is why we will express our opinion without ignoring the positive in them (definitions).

It should be summarized that, **in our view, R. Reeves' definition is one of the most accurate and meaningful because of its two main components: the introduction of an (exclusive) proposal in the mind of the individual, as well as the 'sale' of that proposal to as many people as possible.** In this sense, it can be said without exaggeration that R. Reeves's view of advertising is of fundamental methodological importance among most attempts to define political advertising.

The difficulty in considering this theoretical case (such as the certainty of political advertising) is obvious, especially as we know that it has only been developing in Bulgaria for about thirty years. However, this does not prevent our scientists and experts from considering substantively a number of aspects of the phenomenon of political advertising**.**

In one of the few monograph chapters for political advertising in Bulgaria, the Bulgarian advertiser D. Doganov and the Hungarian F. Palfi (2000) (in their book "Advertising as it is") consider that political advertising pursues the following main goals:

"Promoting and involving the political ideas, programs and platforms of the public; expanding and consolidating the influence of parties, organizations and movements; imposing their leaders and building a positive image; winning votes in elections and referendums, etc." (p. 329) (the emphasis is mine – G.M.), which (goals) are most strongly deployed in election campaigns. In this way, the authors present to us an expanded version of political advertising, some of which can also be interpreted as a certainty – for example, the promotion of more political ideas.

The essence of political advertising according to N. Raleva and Caneva L. (1993) in a simplified form – the nature of political advertising has to orient potential voters in terms of a political situation (p. 81) The purpose is to increase the party's votes. This one is the first thing. Second, as part of the publicity, political advertising contains three basic elements: a source of information in the face of parties and politicians; a written message on the radio, on television through the relevant signs, symbols, slogans, etc.; and the addressee – the voter as the object of influence. That is, political advertising is understood as political marketing. The Bulgarian political scientist T. Burudzhieva (1994) also expresses an interesting opinion, according to which the essence of political advertising is "borrowing a number of techniques of influence, the principles of the expression of the advertising channels and the construction of the message. ..." (p. 188-189) (the emphasis is mine – G.M). At this point, the political scientist elaborates his point of view very well, pointing out that three characteristic features occupy an important place in political advertising: information aimed at highlighting the implementation of the respective political program; suggestion through the use of psychological techniques for influencing voters; and the satisfaction that voters experience from all that the political party (or candidate) concerned presents to them (Burudjieva, 1994, p. 188-189). In other words, T. Burudzhieva (1994)

substantially substantiates the nature of advertising in politics according to the requirement of election campaigns, in the context of political marketing.

From the views presented for political advertising, several significant conclusions can be drawn: the first is that, in the above three positions, the authors proceed from the certainty of advertising in general, which is transformed into the definition of more political advertising; the second is due to the fact that political advertising is still too timidly distinguished as a phenomenon of pre-election political advertising (in Doganov and Palfi (2000) this timidity is partial; in Ralev and Kaneva (1993) a little more; and in Burudzhieva (1994) – most prominent); and the final conclusion is that in these publications priority is given to the general characteristics of political advertising, while little attention is paid to its specificities**.**

There are a number of reasons why political advertising is used indefinitely, but I think one of them is significant: **there is no distinction between the terms "political advertising" and "election political advertising", which are two forms of the same content.**

In this context, **contemporary political advertising is in general such advertising, which is used both by political parties, organizations and movements, by state institutions and bodies, by pressure groups and by non-governmental organizations, by different groups of people or** individuals (involved in a specific political activity) that aim to promote different political ideas, decisions, programs and platforms. In other words, the concept of "political advertisement" has much broader parameters (both in scope and in application), which frame all objects of this advertisement, despite the fact that it is used non-permanently, i.e. only when needed.

From these positions, we can also formulate the definition of election political advertising as such specific type of information, which aims to inspire, influence and involve as many voters as possible in the various election platforms (ideas, values, programs) of the respective parties. , and to create a positive image of their candidates.

In its **design, development and operation, pre-election political advertising seeks to maximize the electorate's** "certain political action ..." or, as T. Burudjieva (1994) writes, political advertising "relies on the widespread use and exposure of some major groups motives for human activity – economic (mostly financial interests), selfish (instinct for self-preservation, comfort and economy of effort, security, sexual instinct, etc.), altruistic (symptoms, desire to protect, etc.)" (p. 189), which otherwise could not happen if the general rules and mechanisms of advertising did not apply.

An important requirement for the production of quality political advertising is to comply with the established rules for its creation, which are universal in nature. In Bulgaria, they have been synthesized by St. Kirilov (1994) as ten rules for successful advertising, which are:

1) **The advertising must be true –** this rule is the most important, because it testifies to the ethics, correctness and inadmissibility of drafted advertisements.

2) **The advertising must be understandable –** if this condition is not fulfilled, then the different advertising audience would not feel the advertising power of the broadcast message.

3) **The advertising must be attractive** – the important thing here is to keep the user's attention while ultimately being convinced that it is the right choice.

4) **The advertising must be unambiguous –** maximum clarity and comprehensibility are needed is this case to get more people involved in its ad charm.

5) The advertising has to meet the needs of the audience – in the presence of a different audience, the advertising itself should be very professionally prepared to meet the diverse needs**.**

6) **The advertising must create favourable attitudes** – such may be present if the content of the advertisement is complied with so as to have a qualitative effect on the audience.

7) **The advertising must strike a balance between the rational and the emotional approach** – it is about effectively "measuring" the logic and the feelings when designing the advertisement, focusing on what the target audience will perceive.

8) **The advertising must differentiate us from competitors** – the advertising product should contain something new, original and unique compared to that of our opponents if we are to achieve a lasting positive effect.

9) **The advertising must be in accordance with the culture and lifestyle of the audience** – this is important to observe, as there are cases when the ad is "imported" from abroad (not in accordance with the national specifics), and its results are catastrophic.

10) **The advertising must take into account the presence of safeguards in the audience**, which means that the maxim of "humanizing the advertising" or avoiding excessive arrogance, intrusiveness and annoyance to avoid the opposite effect applies here. (i.e., people and the audience quickly turn away from it) (p. 17-19).

To these important rules for political advertising can be added at least as much as I read. However, more important is **that the rules should be used professionally (not indiscriminately) and differentiated (and not necessarily all) according to the nature of the election campaign (national, local, etc.), because this is the right approach that can greatly guarantee the desired electoral success**.

Political advertising, like commercial advertising, also uses a whole set of corporate elements, symbols, and signs that are valid only for it. These are called "advertising constants", are applied on an ongoing basis, systematically and comprehensively, and serve as the "identification code" of everyone involved in political advertising. These **advertising constants** are well systematized by the Bulgarian scientist St. Krastev (2000, p. 29-31) and are: **company`s name**, i.e a mark that distinguishes it from others; **trade mark** – officially registered and protected by law element of company presentation, used in combination with the name (BSP, NMSS, UDF, GERB); **slogan** – a message used alone or in combination

with advertising means (SDS – "Time is Ours"; BSP – "Stop the Ruin"; NDSV – "Honesty in All", GERB – "Visible Results"); **company`s block** – a combination of logo and advertising slogan and explanatory label (address, phone, fax); **color mark** – corporate color or color combination (banner of political entity); **reserved font** – formats and fonts specifically selected for company prints that are constantly used by companies (parties and organizations); **company`s documents** – letterheads, envelopes, labels, business cards, invoices, forms, etc., which are shaped with the signs, logo and colors of the company ( the party); **company`s conditions** – premises, buildings, offices, signs, etc. of the company, necessarily shaped by its (respectively parties, movements, etc.) symbols; **company`s traditions** (rituals, ceremonies, customs) – promotions, anniversaries, presentations and other important events in the life of the company (party anniversaries, national dates, historical events); **corporate clothing** – compulsory preparation of corporate clothes to be used for work on specific occasions (party hats, scarves, T-shirts, banners, etc**.); company`s vehicles** – cars, buses, trains, airplanes ("Campaign Trains" in the USA; the yellow NDSV`s company bus and the DPS`s purple in our country); and **corporate sound signals and promotional gifts** – protocol souvenirs and more. (the political party badges, chemicals, etc., which are painted with the symbols of their own political party).

It is beyond any doubt that the advertising constants outlined are crucial to the effectiveness of political advertising. However, their importance is much better if they are effectively combined (and put into practice) with the rules of political advertising. Because if the advertising constants are the "flesh" (matter) of advertising in politics, then the rules are the "spirit" (ideas) of political advertising, so their joint use in politics is an important unwritten law in the preparation of election campaigns.

2. Leading theorists of political advertising in the twentieth century

The development of political advertising in the twentieth century does not escape the theoretical coverage of its major problems. This is typical for the second half of the last century, when along with the strong manifestation of various advertising forms in politics, the theoretical developments in advertising in general, including in the specialized literature in our country, evolved. (Such are the theories of contemporary Bulgarian advertising scientists Dimitar Doganov (2000), Svetlozar Krastev (2000), Boyan Durankev (2013), Simeon Zhelev (2013), etc.). For this reason, we will here synthesize contributions to the nature of advertising as a whole and to political advertising in particular of the four recognized scholars in the scientific field – Claude Hopkins (1994), Rosser Reeves (1994), David Ogilvy (2016) and Jacques Seguela (2004).

One of the pioneers in the theory of advertising is the American Claude Hopkins (1994) (1866-1932) – the man, who in his book "Scientific Advertising" (1923) gives a reasoned answer to a number of "theoretical" secrets in the field of advertising knowledge. In fact, the author develops a broad theoretical field that goes from defining advertising, going through its goals, content, psychology, etc. and ending with what the role of art is in advertising.

To the fundamental question "What is advertising?" Hopkins (1994) responds concisely and reasonably: "Advertising is the ability to sell". The principles of advertising are principles of the ability to sell. (...) The sole purpose of advertising is to make sales. The advertising is profitable or not profitable, depending on the actual sales it has generated. (...) Advertising is a multiplied ability to sell. The advertising calls for thousands, the seller talks to one. (...) Every advertisement must be a super seller" (p. 23). In addition, Cl. Hopkins (1994) adds that advertising should always be not complicated, but simplified, not 'fancy', but unpretentious, not wordy, but understandable in order to appeal to as many people as possible.

In general, the great advertiser Claude Hopkins – writes Prof. B. Durenkev (2013, p. 31) – **enriches the theory of advertising** in a number of fundamental relationships: definition of the concept, clarifying the relationship marketing – advertising strategy, the importance of advertising research, the importance of art in advertising, the importance of psychology for advertising creativity, etc. With these developments, Hopkins has long earned himself the name of a classic in advertising, and his book, Scientific Advertising, is rightly called "the Bible" of Advertising as the world's first monograph on advertising theory and practice.

The other famous American theorist and practitioner of advertising and the pioneer of television advertising, Rosser Reeves (1994) (1910-1984), made a true "theoretical revolution" with his concept of the so-called "Exclusive offer for sale" (EOS). This concept is crucial for the whole advertising theory therefore not only has not lost its relevance, but today continues to be the alpha and omega of all adman (theorists and practitioners).

In his capital work "Realism in Advertising" (1961), the scientist R. Reeves (1994) very thoroughly and reasonably expands his conceptual views on the nature of advertising and the formulated EOS. According to him, the definitive synthesis of advertising can be summarized as follows: **"Advertising is the art of introducing an exclusive offer for sale to the largest number of people at the lowest cost"** (p. 266). This certainty stems from his development of the EOS, which he draws on three basic pedestals (parts): one is that advertising has to make to the buyer **an offer;** the other is that the offer should be **exclusive** or one that the competitor cannot do because it is inherent in the product being offered; and, lastly, that the proposal must be so strong **as to induce the purchase of new**, millions of consumers (Hopkins, Reeves, 1994, p. 193-194). With this trinity, in the development of the definiteness of advertising, R. Reeves (1994) further elaborates on his conceptual thesis, which has since become the classic definition of the phenomenon of advertising. Moreover, this definition of advertising becomes universal in that it is valid for absolutely all types of advertising, including especially political ones. Summarizing the contributions of R. Reeves (1994) to the theoretical development of advertising, it should be noted that they have complex dimensions, which are: EOS, creativity in advertising, psychological impact (through advertising), advertising, liaison, advertising effect, advertising life, competitive advertising, the difference between EOS theory (advertising argumentation) and brand theory (expression of emotions), etc.

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The rich artistic perception of **R. Reeves**, the essence and meaning of advertising can say much more rational and meaningful things. But we will not miss that no one else, namely him, **remains the founder of political advertising in contemporary political history**. This is mainly due to his theory of EOS, which, especially in political advertising, is still widely used by various political actors in election campaigns around the world.

In the second half of the twentieth century, the star of David Ogilvy (1911-1999), who is the next prominent theorist and practitioner of contemporary advertising. David Ogilvy is called "the genius of advertising". He develops in several works his advertising views, among which is distinguished his monograph "Ogilvy for Advertising" (1983), wherefrom the very beginning he answers the essential question of what constitutes good advertising

According to him, good advertising is one that draws attention to the product, not itself. **That is, "**the advertisement that sells the most ..." and which "... will encourage you to buy the product" (p. 29) (mine is emphasized – G.M.). In support of this claim, the great advertiser D. Ogilvy (2016, p. 134-139) recommends **sixteen helpful pragmatic tips** on advertising quality, which are: 1) brand recognition (people learn the name of the product); 2) displaying the packaging (distinguishing the packaging); 3) food on the go (appetizing food advertising); 4) close-up (mandatory close display of the advertised product); 5) shock start (conquering people with the first frame); 6) when you have nothing to say, sing it (use music as background for advertising); 7) sound effects (positive resonance); 8) voice in a frame or in a frame (better in a frame); 9) captions (the text of the inscriptions should be repeated); 10) Avoid visual tones (showing something not seen before); 11) changing the stage (but without confusing people); 12) mnemonic (describing a visual scheme, repetitions over a long period of time); 13) display of the product in use (if possible to show the final result of the advertised product); 14) everything is possible on television (reproduction by the technicians of the desired); 15) misunderstandings (clear TV ads so they don't misunderstand you); and 16) the big scandal (precise determination of financial costs to prevent money scandals, especially in television advertising). These useful advertising tips are not necessarily a panacea, but they are especially valuable when applied expertly and professionally in the preparation of television advertising. This reflects their universal theoretical and pragmatic value in the production process of different types of advertising. We will also point out another contribution by D. Ogilvy (2016) to "unravelling" the secret of successful advertising, which comes down to the implementation of several essential requirements: recommendations, demonstrations, news, information, layout, headlines, advertising text, and inscriptions (p. 134-139). And while these requirements are developed only for print business advertising, they have their own special value, which always manifests itself with a more lenient mark when there is quality development of the advertising product.

It is curious to note that D. Ogilvy (2016) **literally hates political advertising, which he calls "outrageously dishonest."** Because at a time when television commercials are the deciding factor for who will be the next president of the United States, this (political) advertising is as evil as newsletter forgery (p. 134-139). Obviously, the eminent advertiser denies and does not accept political advertising as an indisputable marketing fact, since it is

clearly manipulative to the electorate. However, this does not at all diminish his overall great contribution to the theory and practice of advertising, for which Ogilvy is rightly called the "genius of advertising" in the world.

In the 1960s and 1970s, a strong "theoretical" impetus in the evolution of advertising in Western Europe was given to the work of well-known French advertiser and image-maker **Jacques Seguela** (2004) (1934). Similar to his colleagues in the United States, whose contributions we have already reviewed, the French specialist pays close attention to the nature of advertising in business and politics. This is particularly evident in his two leading books, "Hollywood Washes Best." Business and Politics Alphabet "and" There were elections once a upon a time... ", in which J. Seguela (2004), relying on American practice (and Hollywood advertising and other techniques), brilliantly develops some of the most successful advertising strategies for election campaigns in European countries. And one more thing: Jacques Seguela (2004) simultaneously manifests himself as a significant advertiser and as a well-known image-maker, which is vividly evident in his work and which we will not consciously "divide" in order not to discount the contributing moments in his views on advertising.

In particular, Jacques Seguela's "stellar algorithm" (2004) finds expression in the maxim "turning a brand-object into a brand- person." Depending on which the brand person should become a star brand through three key factors – physics, character and style. " These factors are crucial for shaping the political image of candidates and for producing quality political advertising, which is why we will pay more attention to their importance.

What does **it mean to turn brand-object into brand-person?**

According to the advertiser Seguela (2004), while the Old World was counting down to shake up to see who would leave the game, the New World was already calculating and thinking about marketing. In the early 1960s, America sent us its "American Marines" to trade, branding masters with the so-called "Text strategy". And our advertisers threw themselves into mimicking their fashion the way teenage girls had tapped on chewing gums and nylon socks, with the ad going to advertise. Of course, d was quick to shift spontaneity because an avalanche of arguments and tests that eliminated disarming naivete, which was spun headfirst generation of buyers. This is where the intuition comes out of the scene, and the computer chases away the talent. And the time came for the advertisement, which pretended to be journalism and the first slogans that tasted like real advertising. As a result of which mathematicians and theoreticians stormed the vacant places of artists and poets. There were riots both on the street and in advertising. Police batons started splashing! However, you can't too long obey the crowd of figures without going into esotericism. And so, very soon, the advertisement seized its tail, and fortunately, the time of 1968 (p. 40-41)

As is well known, unsuccessful revolutions have the gift of pushing the development of consciousness forward, thus continuing their path further. And here the born by the barricade young advertising involve and start measuring the swamp with stones that paved the way for her first sensual campaigns. Thus, instinctively, they rejected the theories of the rationalists and prevented them from participating in their triumph. Of course, for every success, there are reasons that, although very different, they still look alike. Because they

all belonged to the great saga of dreams (Seguela, 2004, p. 40-41), to which many have aspired.

Of course, it could be expected that after these undeniable victories of talent, the imagination would regain power, but it still allowed him to be caged. And his opponents' motive was that it could only counter the easily intuitive intuition of established theories. Because the new ambition of a person was to achieve pleasure, to feel good in his car, to fit comfortably in his clothes, etc., in two words to feel good in his skin. Therefore, the slogan of the fetish of the past centuries, "I think, so I am", was already read "I am, so I think" (Seguela, 2004, p. 42).

There is no dispute that an era **flew by, in which wealth was hegemonic with its cult – money, its outward brilliance – success, its cause of satisfaction – social status. The verb "I am" appeared on stage and his religion was a pleasure. From that moment on, the man began to strive for self-realization, and his main reward was to merge with society** (Seguela, 2004, p. 42) (mine is emphasized – G.M.).

Such is, according to J. Seguela (2004), the "advertising philosophy" of transforming the brand object into a personality brand that is inevitably linked to and derives from the profound technological changes in the modern market economy of the West, from the powerful development of economic marketing as a science and, of course from the serious changes in the social-psychological layers of the mass public consciousness. And one more thing: these changes give priority to the positive development of the individual, the character and the personality, whereby the leading position is taken by the qualities of man as a "standard for being" in the modern civilized world.

Drawing on the compelling charisma of Hollywood products in cinema and advertising, the Frenchman J. Seguela (2004) also asks the second, no less essential, a question from his algorithm: **How does a brand-person become a star brand?**

The answer to this question is in a synthesized, yet deeply meaningful form, which the French advertiser gracefully reveals through his understanding of what a star is in art, marketing, advertising and society.

Where did the star's overwhelming and enormous power come from? Asks Seguela (2004) and replies: From her triple nature, since the star has three invincible weapons (p. 58-60), which he examines in the following order:

First of all, the star is convincing, because it is its natural function, and it does not need to be possessed by that passion to persuade. Which the old generation of advertisers possessed – it is enough to appear to make us follow it or to think something for us to do. In other words, the star makes us buy it, since that is the point of its existence. Moreover, it is the driving force of its existence. In addition, the star has established itself as the only absolute commodity, and as the only one that can be sold many times over. Because her gestures, image, voice, even the past, above all, generate a net income. Moreover, this huge money machine is almost inexhaustible: the more a star sells, the more one buys, the more every act of consuming it makes it more desirable. Sort of like those fatal women who know how to turn love into an inexhaustible source of insatiable desire. Therefore, no matter how sophisticated, an ordinary commodity can never exceed a certain price, while a star has the

gift of selling us dreams and dreams never have a price. This is the only product that no one is asking for. Because its sale price is limited only by the number of screening rooms.

The second nature of a star is its durability. Because she is endowed with the privilege of remaining immortal. It seems as if there is some mockery of death in the fact that the Pantheon brings together people of art, historical figures and dream heroes. Here, the ability to exist is vital for the star as long as she (the star) reigns for only one day. What is more, only the stable, sound and reasonable are bought on the stock of stars, as well as on the stock exchange. For example, we look at Lolobrigida's breasts, stroking Loren's legs, dreaming of making love with Bardot. But we love Morgan, Schneider or Deneuve. But sex doesn't make love, and it's not enough to be a succulent beauty to be a star. It takes a lot more than a pair of breasts to make your billboard look. Or, to exist, it means playing fifty, one hundred, two hundred roles without the audience getting bored of you; to invest your soul every time without losing it; to surprise every time, but to be left alone; to update without changing. That is, to become master of time, or to exist, meaning never to grow old and never to die (Seguela, 2004, p. 59).

The star's third nature is to fascinate. Communicating and seducing are two character-related skills that are not only very important but also absolutely necessary to build a star.

To persuade, to exist, to fascinate – are there any advertisers who have not dreamed of seeing their brand endowed with this trope of success? In fact, the invention of the star is the most successful example of marketing in all of history. It's normal to use the lessons now, but how does a star form? There is nothing easier because you should ask for the recipe from the great leader Sam Goldwin – the father of Metro Goldwin Meyer and the inventor of the star system. His theory is very simple: to make an ordinary person extraordinary, it is enough to make the three constituents of his personality unique, namely: physics to make him convincing, character to be able to exist, and style to be enchanting. Because stars are not born, they are made. But it takes mind, perseverance, method and talent.

All of this applies to brands as well – concludes Jacques Seguela (2004, p. 60).

Hardly will sound overblown, if we summarize telegraphically, that with **his theoretical work, French advertiser Jacques Seguela (2004) has become one of the most brilliant European theorists of advertising (including, especially political) and of the most significant practitioners of the advertising phenomenon in the past 20th century.** We have to point out this indisputable fact, because there are still few experts who ignore Seguela's achievements, especially in the theoretical field, which is probably one of the reasons for provoking contemporary discussion about political advertising in the modern world.

* * *

In the 1950s, the theory and practice of advertising and political advertising went through a "revolutionary stage" that was not limited to the creativity (and activity) of the prominent Western advertisers so far. During this stage, a huge number of prominent advertising theorists make their huge contribution to the evolution of advertising (including political), like the Americans Bill Burnbach, Leo Burnett, Ted Levitt, the British J. Pierce, Alan

Parker, Ridley Scott, J. Hogarthy, the French M. Bongran, M. Sorel, Jean Dunner, Jean Rene and many others have left a lasting gap in the theoretical interpretation and practical development of the advertising phenomenon from the second half of the last century until now.

The qualities of this classified advertising scheme are indisputable, but one of its greatest achievements is its comprehensive focus and detailed layout, which definitely give it a leading methodological character.

Of course, we neither intend nor can analyze all existing classifications of advertising, so let's just summarize that out of all the above we rely on that for its use in the public sphere, and especially in the political, where different types of advertising have their own differentiation, modifications, purpose and weight.

3. Classification (types) of political advertising

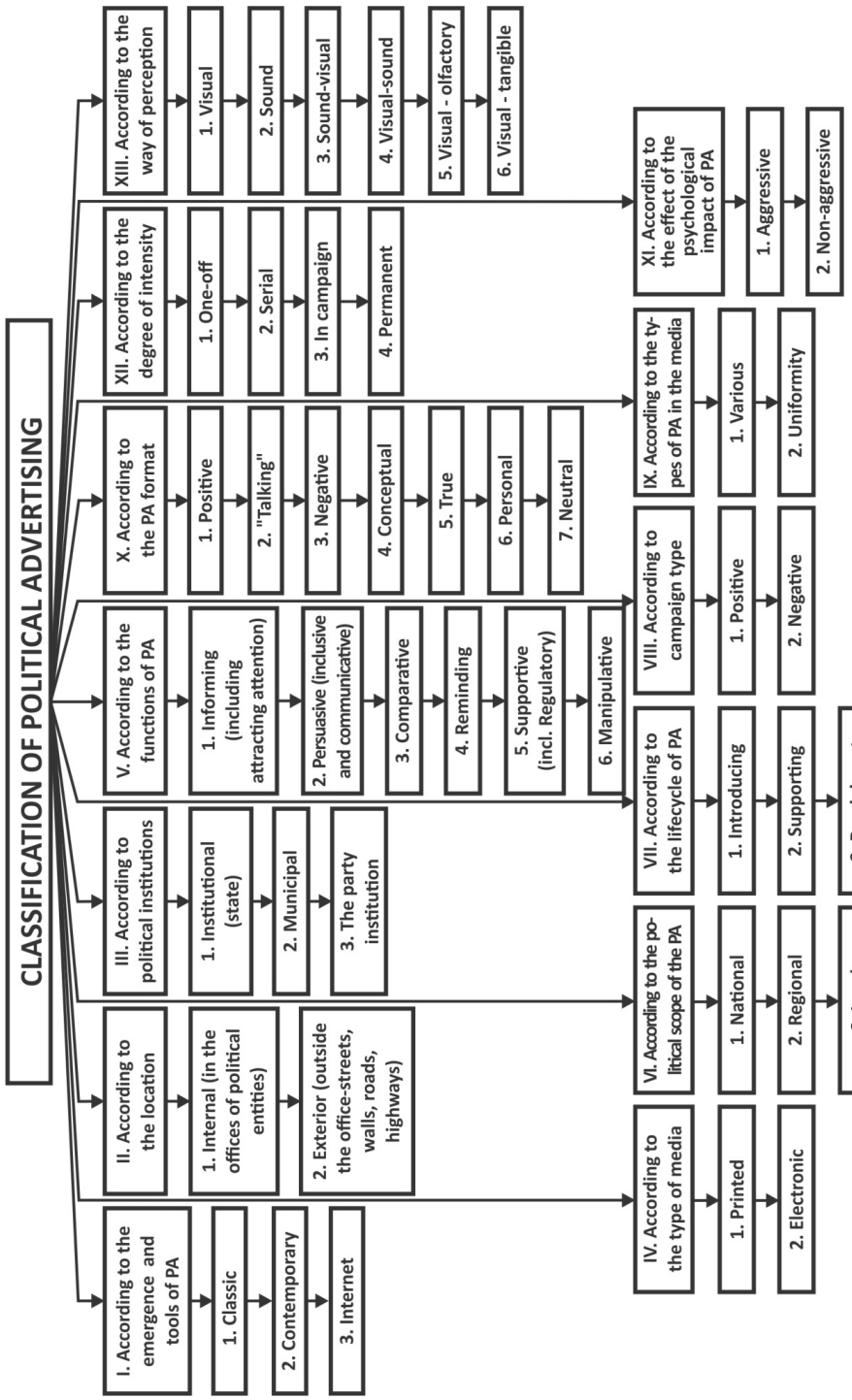
As can be expected, the question of types of political advertising still remains negligible. Here are just two indicative examples that strongly support the thesis of inaccurate (and imprecise) attempts to classify political advertising.

The French expert **M. Bongran** (1991) is one of the few political marketing professionals who classifies political advertising as a type of advertising medium in the following order: **first,** official advertising (posters, letters, etc.); **second**, classic advertising aids (print, television and radio**); third**, a poster (in various variants); **fourth,** printed matter (newspapers, leaflets, leaflets, etc.); and **fifth**, audio-visual aids (plates, cassettes, videotapes, videos, etc.) (p. 74-78), by which the classification is generally limited.

This, though true, is far and away not enough, since the author (M. Bongran (1991) does not specify the classification criteria at all, saves the tools and forms of advertising, and finally – repeats the same forms in different units of the classification systems schemes (as is the case with posters and posters) In general, quite a few ambiguities and omissions exist in M. Bongran's (1991) classification of types of political advertising...

The Bulgarian political scientist T**. Burudzhieva** (Burudjieva, Kaneva, 2007, p. 216), using the term "advertising forms", makes the following differentiation of political advertising: First, general forms, which are: **press – announcements**, announcements, paid materials – articles, interviews, extramural debates, reports, photo material; **outdoor print advertising** – leaflets, posters, billboards; television – active advertising, news, debates, press conferences, videos, spots; **radio music** videos, breaks between political discussions, journalistic and journalistic advertising techniques, and more. And second, the main forms of political advertising, such as: **political video** – vision and sound at the expense of speech, rhythm, dynamics (primarily focused on attracting attention); **political spot** – focuses on advertising text, slogan, voice (rather announces, the candidate is fully represented); and a **political billboard** – relatively low cost, the requirement for duration does not exist, repeatability is provided with very little effort, there is a possibility for a wide variety of topics, images and ideas, etc.

Scheme 1


CLASSIFICATION OF POLITICAL ADVERTISING
I. According to the emergence and tools of PA
1. Classic
2. Contemporary
3. Internet
II. According to the location
1. Internal (in the offices of political entities)
2. Exterior (outside the office-streets, walls, roads, highways)
III. According to political institutions
1. Institutional (state)
2. Municipal
3. The party institution
V. According to the functions of PA
1. Informing (including attracting attention)
2. Persuasive (inclusive and communicative)
3. Comparative
4. Reminding
5. Supportive (incl. Regulatory)
6. Manipulative
X. According to the PA format
1. Positive
2. "Talking"
3. Negative
4. Conceptual
5. True
6. Personal
7. Neutral
XII. According to the degree of intensity
1. One-off
2. Serial
3. In campaign
4. Permanent
XIII. According to the way of perception
1. Visual
2. Sound
3. Sound-visual
4. Visual-sound
5. Visual - olfactory
6. Visual - tangible
IV. According to the type of media
1. Printed
2. Electronic
VI. According to the political scope of the PA
1. National
2. Regional
3. Local
VII. According to the lifecycle of PA
1. Introducing
2. Supporting
3. Reminiscent
VIII. According to campaign type
1. Positive
2. Negative
IX. According to the types of PA in the media
1. Various
2. Uniformity
XI. According to the effect of the psychological impact of PA
1. Aggressive
2. Non-aggressive

This classification is very meaningful and rich in leading and mainstream advertising forms, but it also suffers from a certain incompleteness, which does not allow for a more complete and complete explanation of most types of political advertising.

Otherwise, things would stand if it were much differentiated, and in this typology more broadly. If we apply a whole set of criteria to help identify **political classification** varieties as accurately and in-depth as possible, we believe it can be divided into **thirteen main types**: by origin and tools; by location; according to the type of political institutions; by type of media; according to the functions of the PA; by territorial scope; according to the life cycle; according to the type of election campaign; by types of PA in the media; according to the format of the communication to the PR; according to the effect of the psychological impact of PR; according to the degree of intensity; and according to the way of perception of the PA (see Scheme 1). Here, however, we will make a fundamental reservation that addresses the important distinction between means and forms in the characterization of types of political advertising, which is: in a sense, means are the channels (communications) by which advertising is transformed into different categories of people and social classes, or whether it is print, television, radio, etc .; and in the other sense, the forms of political advertising are the specific types and types of advertising used by election campaign staffs during the various campaigns. And further, it must be remembered that, since political advertising is less frequently used in election periods, subsequent classification (in most cases) is made on the basis of pre-election political advertising, although it is referred to in the same way as a name.

So there **are several conclusions** to be drawn from the above classifications**: the first** is that some of the classifications are of general use because they are valid for advertising in general (for example, territorial reach, lifecycle) and therefore extrapolated to political advertising, while others are specific to election advertising only; **the second** is of a more specific nature, for example political advertising itself could be differentiated as current and pre-election, which we did not do, since current advertising is much less used as opposed to pre-election; **the third** is related to the ways in which the types of advertising are implemented, which, apart from being different, depend too much on the campaign staffs' orders and, respectively, on the use of various advertising forms, while being very precise (i.e not all together); **the fourth** concerns cinema advertising, which could also be classified as the relevant classical species, provided that it is not forgotten that it still "marched" with success in the first half of the twentieth century; **the fifth** concerns that another broad classification of political advertising (such as that of M. Bongran (1991) – formal and informal but which we consider inaccurate) may apply; **and the final conclusion** directly addresses the new forms of political advertising via the Internet (or, as we defined it, Internet political advertising), which are increasing their importance year by year in election campaigns and are literally revolutionizing, revising and replacing much of the past advertising in politics.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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METHODICAL PRINCIPLES OF ESTIMATION OF INTELLECTUAL LEADERSHIP OF THE GLOBAL ECONOMY ACTORS

The study of the economic aspects of leadership is a topical issue both in practical applications or management theories and in general economic science for understanding the issues of entrepreneurship, competitiveness, international economics, globalization. The phenomenon of leadership is interest in the context of determining its essence, mechanisms, role in the processes of world economic development and evaluation. The separation of this kind of leadership as an intellectual is caused by the increasing importance of human resources in general and their intellectual components, in particular, in supporting the development of a modern economy. Intellectual factors, directly or indirectly, due to the influence on other factors, are becoming key in ensuring high positions in today's highly competitive environment. Identifying the influence and role of intellectual factors in achieving leadership positions in the global economy is enabled by the analysis of the intellectual component in different approaches to determining leadership positions. Methodical approaches for estimation of the intellectual leadership of multilevel entities in the global economy are offered. The presented methodology is based on the identification of the three levels of intellectual leadership implementation: the level of resources, the level of results and the level of final results. Each of these levels is characterized by an appropriate system of indicators for different subjects, which allows them to determine their positions according to different criteria at different levels of competition. This research can be used by economists, management specialists.
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Introduction

Changing general conditions of economic activity, formation of qualitatively new trends of networking and technology are accompanied by the aggravation of competitive struggle at all levels, rapid change of competitive positions, significant stratification of the competitive environment, change of rules and methods of competition. Given the increasing interdependence and interpenetration of national economies, these new trends require the attention of diverse actors in the global economy to new phenomena and many economic and managerial processes.

In such highly competitive conditions, an important task for different actors is not merely the achievement of economic development, but, first of all, the achievement of leadership positions. Leadership is becoming a competitive advantage and not only a goal but also an instrument of competition that can bring even greater gains. Identification of leadership becomes relevant for actors of different levels: as individuals (in politics, business and other circles), as well as companies, universities, regions, national economies. The necessity of identifying the key factors for achieving intellectual leadership and forming a method for its evaluation is emerging. It is worth highlighting the main levels at which subjects can realize their leadership ambitions. All these dynamic processes require thorough analysis and identification of common trends in the development of mechanisms for the achievement and assessment of intellectual leadership of multilevel entities in the global economy.

Data and methodology

The content of this study, scientific findings, conclusion and recommendations are based on the broad application of the systematic approach to the study of the phenomena. The proposed work is based on a synthesis of existing approaches to understanding the essence of intellectual leadership. In order to achieve the research goal, a methodological approach is proposed that involves a multilevel assessment of the intellectual leadership of various subjects of the global economy. The complex of indicators for the estimation of intellectual leadership at each level is substantiated. The main sources of information for this study are reports from international organizations (UN, WEF, World Bank, Bloomberg, etc.).

The purpose of this research

The aim of the work is to develop a methodological approach to assessing the intellectual leadership of various actors in the global economy.

Literature review

Intellectual leadership is the subject of research by a large number of scholars. Mostert M. (2014) in the paperwork research of the preconditions of the company's leadership are

investigated, and the necessary resources for it are determined, taking into account the further intellectualization of global economic processes.

The leadership of intelligence-based companies is the subject of research of Tichy N. (2002). These works consider the approaches of companies to achieve leadership positions in the context of constant market transformation, taking into account the latest knowledge and using them as a prerequisite for ensuring the competitiveness of the company.

In paperworks of Boydell T. et al. (1991) issues of the development of leading companies in the context of the transition to a knowledge economy are considered, these issues are rising at the end of the twentieth century, with the formation of a modern stage of world economic development.

The intellectual leadership of organizations is also studied in the works of Senge P., Kleiner A., Roberts C., Ross R., Smith B. (1994). The basis of these works is the idea of determining the prerequisites for leadership in the formation of new markets for high-tech products, innovative products, etc.

The transformation of society and the need to form a new paradigm of leadership are considered in the works of Pongpearchan P. (2015). Determine the preconditions for achieving leadership positions of individual companies, and even retain these positions by existing leaders. The role of intelligence and knowledge in managing a company to provide leadership and competitiveness is grounded in the article of Frost A. (2010). However, it focuses more on internal management processes in the company, not taking into account environmental factors.

The essence of transformational leadership is explored in the article Chris Roche (2016), where the necessity of transformation of the company in response to the transformation of the external environment is grounded, taking into account the key trends of strengthening the influence of the intellectual component on the formation of market conditions. The practice of implementing intellectual leadership for business entities is covered in the work of Senge, P. M. (1990). Studying a new paradigm of leadership in companies is a prerequisite for its provision. The role of intelligence in achieving leadership positions is studied by Mostert M. (2014). His work expresses the idea of the exceptional role of intelligence to ensure the leadership of companies and economies as a whole.

The research of intellectual leadership is the basis of scientific research of Macfarlane B. (2010.). However, he concentrates only on the leadership of scientific and educational institutions, not taking into account other subjects of economic activity. A similar subject is also explored in the works of a whole group of scholars Wepner S.B., D'Onofrio A., Wilhite S.C. (2008) but these studies do not take into account the opportunities of other subjects of the economy for the implementation of intellectual leadership.

Global innovative space became the subject of study in a large number of research papers of both domestic and foreign scientists. B. Klinger and D. Lederman (2006) explore the empirical relationship between economic development and innovations inside the Global Technological Frontier. Boutellier, Gassmann et all (2008) explore the challenges and main trends in the formation of a GIS, analyze the key areas for the accumulation of innovation and the formation of intra-industry networks. Cooke (2017) identifies opportunities for the

creation of global innovation networks and territorial ICT-based innovation systems. Jensen (2017) explores the role of global innovation in the global dynamic environment, the opportunities for collaboration to shape global innovation and global knowledge flows.

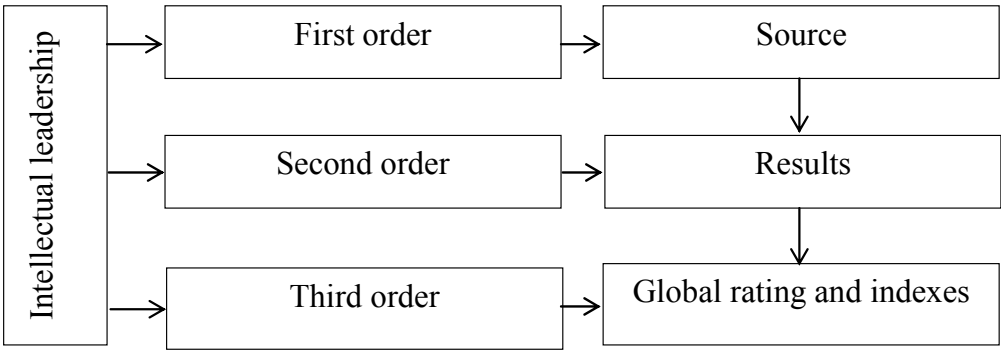
Results

The phenomenon of intellectual leadership is quite complex in terms of definition and structure; thus, its evaluation requires a systematic approach, based on the consideration of peculiarities of intellectual activity. The author's approach is that intellectual leadership in the modern environment needs to be determined by levels that characterize certain stages of intellectual activity and have their own peculiarities. Such stages are represented by three levels: the level of resources, the level of results of intellectual activity, the level of final results. As for the subject, in this study, we will consider, for the simplicity of analysis, only a country or a national economy among the whole variety of entities (country, region, industry, institution, corporation, etc.).

The level of resources is in fact, characterized by the presence of basic intellectual resources. Their presence and potential characterize in general the ability of the country (or any other subject) to intellectual activity. At the same time, the availability of intellectual resources is an important precondition for leadership but does not yet mean actual leadership. More realistically, it can manifest itself at the next level, which characterizes the results obtained by this subject. The level of results of intellectual activity involves evaluating specific results: patents, licenses, know-how, publications, etc. The final results should be those that relate not only to purely intellectual activity but also to the whole economy or society as a whole. The next step in the assessment should be the determination of key indicators at each of these levels (Figure 1).

Figure 1

Levels of Intellectual Leadership Implementation*



* systematized by the authors

In our view, only such a systematic approach to assessing each of these levels with a variety of indicators you to characterize the intellectual activity and evaluate the overall competitive position of different parties. All indicators of the assessment of intellectual leadership, thus, take into account either the potential of intellectual resources or the results of the implementation of intellectual activity.

The leadership of the first order can be defined as resourceful. At this level, the country's ability to achieve intellectual leadership is determined through the formation of intellectual potential and mechanisms for its growth. The key development resources are divided into financial, human and, in fact, intellectual.

An assessment of the intellectual potential of human resources can be carried out using indicators such as: the number (proportion) of people with higher education (according to different age estimates); number of students (at different levels of training); the share of the population covered by education; level of literacy of the population; the share of the population employed in the high-tech sectors of the economy; the share of workers who increased their qualification. The ability of countries to actively participate in the development of knowledge economy is estimated through the definition: the number of Internet users; the number of users by mobile phones; the level of export of high-tech products; information transfer rate, Kb/s per user; readiness for change.

In addition, at the national level, state participation in the development of intellectual potential is manifested through:

- the level of R & D expenditures;
- the cost of education and higher education, in particular;
- level (share) of education expenses per student;
- the share of enterprises introducing innovations.

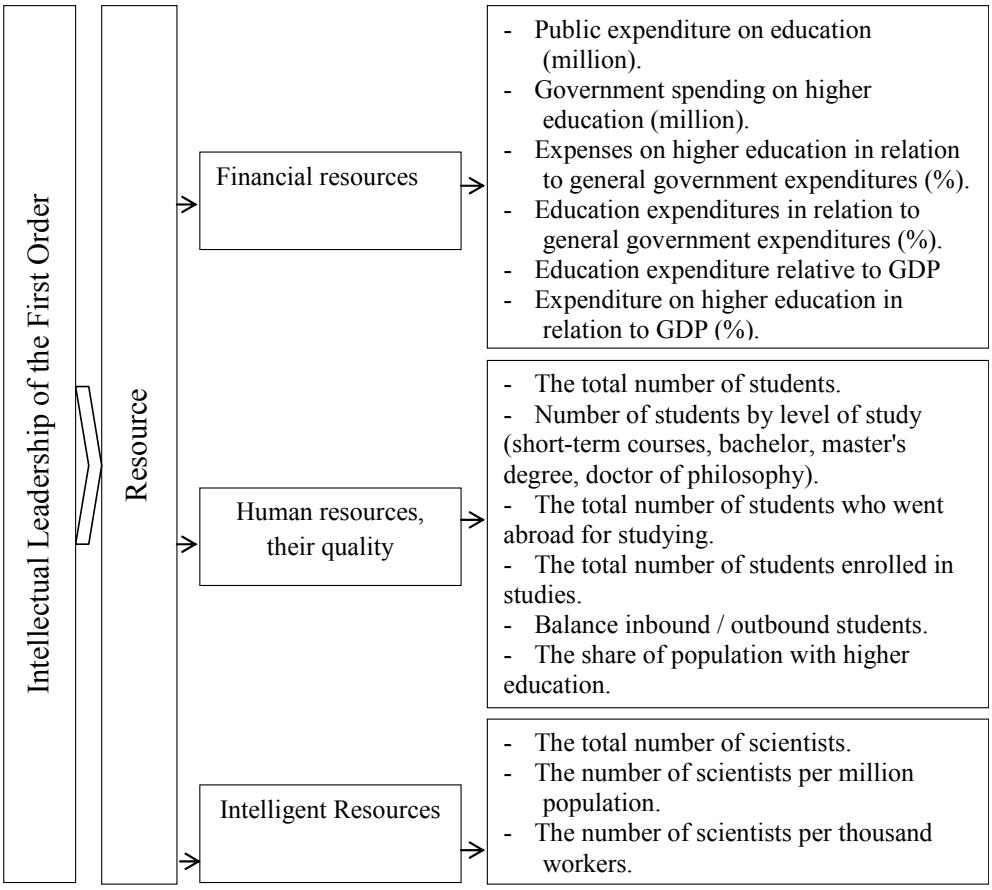
In addition to the above indicators, leadership should be considered depending on the sector of its implementation. It may be productive, factor, trade, financial, socio-economic, informational, scientific and technical, technological leadership, etc.

Thus, the development of a comprehensive system of indicators for intellectual leadership of countries still has a considerable scope for revision, to take into account all potential components and reserves of this type of leadership. The intellectualization of the economy in the transition to a "knowledge economy" becomes an objective necessity, which necessitates the development of a system of indicators and development benchmarks. This allows us to assess the current state of accumulation of intellectual resources, the dynamics of their development, the prospects of implementation; to highlight the main directions of increasing the efficiency of their implementation and further intellectualization of the economic system.

The following diagram illustrates the whole set of indicators characterizing intellectual resources. With such a set of indicators, one can estimate the potential of each country or any other entity (Fig. 2.).

Figure 2

First-order Intellectual Leadership System*



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An assessment of the intellectual potential of human resources can be carried out using indicators such as: the number (proportion) of people with higher education (according to different age estimates); number of students (at different attainment levels); the share of the population in education; level of literacy of the population; the share of the population employed in the high-tech sectors of the economy; the share of workers who increased their qualifications (Sedlyar, 2014).

The financial resources allocated by the country to increase intellectual potential should also be characterized by the following system of indicators: public expenditures on education (million); government expenditure on higher education (million); higher education expenditure as a share of general government expenditures (%); education expenses relative as a share of total public expenditures (%); education expenditures

relative to GDP (%); higher education expenditure relative to GDP (%); the level of education expenses per student in absolute terms and in relation to GDP per capita; share of enterprises implementing innovations.

Actually, intellectual resources are a set of resources that can professionally carry out the intellectual activity: the total number of scientists; the number of scientists per million population; the number of scientists per thousand workers.

In general, the development of a comprehensive system of indicators for intellectual leadership of countries still has a significant scope for further elaboration, to take into account all potential components and reserves of this type of leadership. The intellectualization of the economy in the transition to a "knowledge economy" becomes an objective necessity, which necessitates the development of a system of indicators and development benchmarks. This allows to assess the current state of accumulation of intellectual resources, the dynamics of their development, the prospects of implementation; to highlight the main directions of increasing the efficiency of their implementation and further intellectualization of the economic system.

Assessment of resource potential is only the first stage because further, intellectual leadership is also manifested through the results of activities. Second-order intellectual leadership is formed on the basis of the results of intellectual activity and includes indicators that reflect the infrastructure, educational, scientific and technological readiness for the implementation of innovations and the implementation of intellectual potential. In part, these indicators may indicate both the results of intellectual activity and in turn, serve as a resource or a necessary basis for the formation of new results of intellectual activity.

Educational and scientific indicators at the same time serve both resources and results, but as resources based on results. These include the number of world-class universities, the number of scientific publications in general and in science-editions, the number of Nobel laureates. Infrastructure indicators primarily include opportunities for using technologies for innovation development, in particular: the number of Internet users (% of population); number of mobile telephony users (persons); number of mobile telephony users (per 100 people); number of fixed telephone users (persons); secured Internet servers (per million of population). The last group of indicators includes technological indicators, in particular: the number of technical staff in R&D; technical staff in R&D (per 1 million of population); registration of trademarks (residents, non-residents and total number); high-tech exports (in millions of dollars and as a percentage of exports); ICT products and services (export and import); applications for industrial designs (residents and non-residents); patent applications (residents and non-residents).

In addition to resource potential, intellectual leadership is also manifested through the results of activities. In the system of structural and functional characteristics of the global intellectual space, it becomes an expression as a second-order leadership. Second-order intellectual leadership is formed on the basis of the results of intellectual activity and includes indicators that reflect the infrastructure, educational, scientific and technological readiness for the implementation of innovations and the implementation of intellectual potential. In part, these indicators may indicate both the results of intellectual activity and

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Educational and scientific indicators at the same time, serve both resources and results, but as a resource based on results. These include the number of world-class universities, the number of scientific and technical publications, the number of Nobel laureates. Infrastructure indicators primarily include opportunities for using technologies for innovation development, in particular: the number of Internet users (% of population); number of mobile telephony users (persons); number of mobile telephony users (per 100 people); number of fixed telephone users (persons); number of fixed telephone users (per 100 people); secured Internet servers; secured Internet servers (per million). The last group of indicators includes technological indicators, in particular: the number of technical staff in R & D; technical staff in R & D (1 million USD); registration of trademarks (residents, non-residents and total number); high-tech exports ($,% of exports); IKT products and services (export and import); applications for industrial designs (residents and non-residents); Patent applications (residents and non-residents) (Fig. 3).

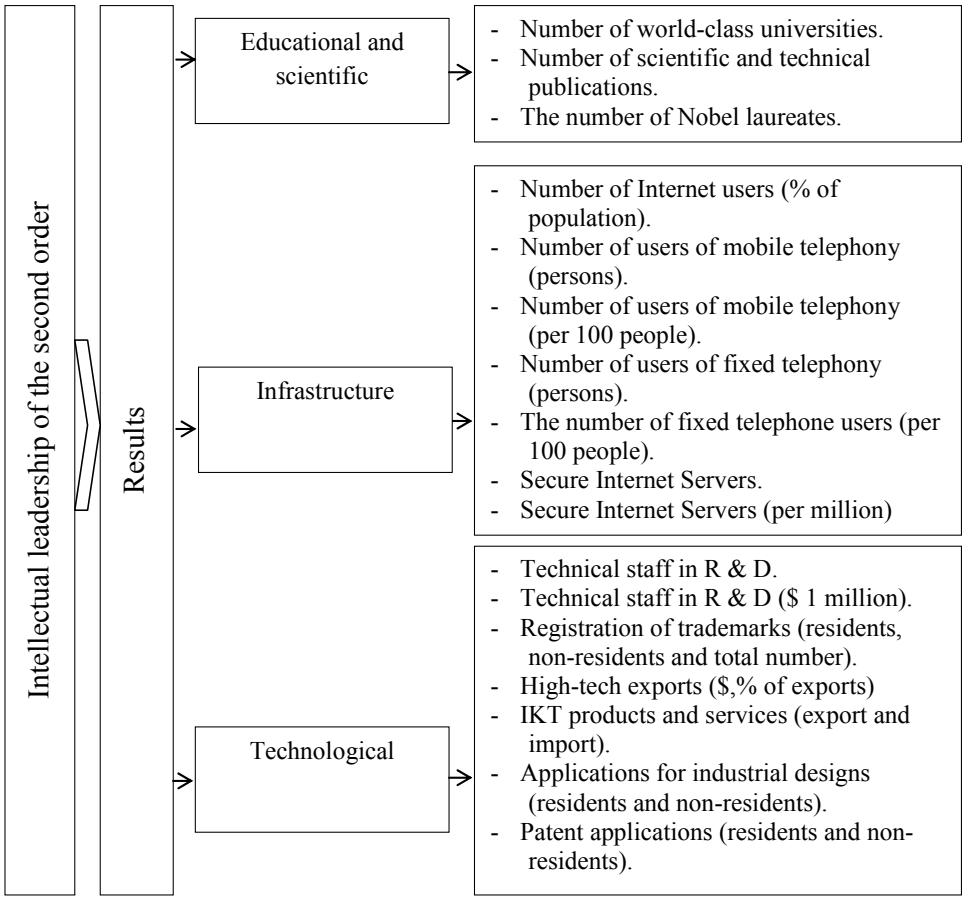
As stated above, the third level of intellectual leadership is the level of final results, which are manifested not only by themselves but also in relation to general economic indicators. Most often, this is manifested in a variety of indexes, rankings, and so on. At the global level, partial assessment of individual leadership in its generalized format and confirmation of its necessity for the growth of the economy are found in the well-known world indices. In particular, the Global Innovation Index contains an analysis of the role of human capital in the growth of economic performance, in particular, indicators of innovation. Another index that takes into account the individual component of leadership is the Global Talent Competitiveness Index, which is based entirely on the study of the state of human capital in the country (INSEAD…). Of course, these indices only generalize the existing trends, rather than consider individual leadership as a separate element of the economic system.

The problem of leadership becomes relevant not only for business organizations. The intensification of competition on a global scale raises the issue of reaching leadership positions and in other areas of activities, which specifics require their own leaders and professionals. One of such spheres is the sphere of intellectual activity – the system of education and science. There are numerous university rankings, ratings and indices of innovation, which become tools for ranking and identifying leaders in a highly competitive intellectual environment. The emergence of leadership issues in its modern sense to a higher level makes it possible to assert the existence of new leadership formations in the geopolitical environment and understanding of the international economy.

In recent years, the issue of leadership of countries and regions, its objective basis in the framework of global trends, is intensifying. For example, at the World Economic Forum in Latin America in 2017, the preconditions for regional leadership and its key criteria were identified. These include labour productivity and migration policy, which is based on the development of education and skills; security; competitiveness. Competitiveness for a given region is determined by the need to develop leadership in renewable energy sources (Thomson St., 2017).

Figure 3

The system of indicators of the intellectual leadership of the second order*



* systematized by the authors

Confirmation of the importance of intellectual factors in achieving leadership at the global level can be the discovery of this component in the world ranking. Table 1 summarizes the main world rankings and analyzes the share of indicators that characterize intellectual activity, the components of human capital in manifestations (Table 1).

Table 1

Global ratings and indexes

	Global ratings and indexes	Organization that calculates the indicator	Indicator	Weight
Intellectual component of human resources	Human Development Index, HDI	UN	– Literacy level indicator	1 subindex from 3 5 indicator from 21
	Index of education level in the world	UN	– Literacy level indicator – The share of those who study	2/3 1/3 in total weight
	The Social Progress Index	Project The Social Progress Imperative	– Availability of basic knowledge and literacy of the population – Duration of women training – Duration of studies at university – Global University Ranking – Inequality in the availability of education	5 indicator from 48
	The Global Innovation Index	WIPO	– Human capital and research in the subindex of innovation costs	1 indicator from 6
	The Bloomberg Innovation Index	Bloomberg Rankings	– Tertiary efficiency (5%) (coverage rate for all subjects for students)	1 indicator from 7
	The Global Competitiveness Index, GCI	WEF	– Health and elementary education – Higher education and vocational education	2 groups of indicators from 12
	The Legatum Prosperity Index	Legatum Institute	– Indicator of quality of education	1 subindex from 8
	Satisfaction with Life Index, SWL	OECD	– Indicator of accessibility of education	in 1 subindex
	Academic Ranking of World Universities (ARWU)	Higher Education Institution of Shanghai Jiaotong University	– Takes into account the activities of leading universities and their scale	100%
	Webometrics ranking of world's universities	Cybermetrics Lab Spanish National Research Council, CSIC	– Takes into account the activities of leading universities in the Internet and their scale	100%
	Report of the World Trade Organization	WTO	– Includes primary and secondary education coverage	2 indicators from 8
Results of intellectual activity	The Global Innovation Index	WIPO	– Sub-index of innovation costs – Sub-index of innovative results	100%
	The Bloomberg	Bloomberg Rankings	– Intensity in research and	5 indicators

	Global ratings and indexes	Organization that calculates the indicator	Indicator	Weight
	Innovation Index		development (20%) – High-tech density (20%) – Concentration of researchers (20%) – Patent activity (5%) – Technological opportunities (10%)	from 7
	Country rating by number of patents	WIPO	– Takes into account the specific indicators of the results of intellectual activity	100%
	Country ranking by number of Internet users	It is based on statistics	– Takes into account the specific indicators of the results of intellectual activity	100%
	Country rating by number of users by mobile phones	It is based on statistics	– Takes into account the specific indicators of the results of intellectual activity	100%
	Ranking of countries by level of export of high-tech products	It is based on statistics	– Takes into account the specific indicators of the results of intellectual activity	100%
	The Global Competitiveness Index, GCI	WEF	– The level of technological development – Innovation potential	2 groups of indicators from 12

* systematized by autors

Of course, the list provided above is not exhaustive, but it represents the most weighty and popular world rankings. All of them reflect the processes of increasing the role of the human factor and its transition to a new level of leadership. The world's leading countries are demonstrating a creative transformation, which becomes a platform for the formation of a successful society and a prosperous nation. This is confirmed in the Human Development Index study, which examines three components: health and longevity; education and access to it; living standard, estimated through GNI per capita based on purchasing power parity in US dollars.

Even such generalizing rating systems as the Global Competitiveness Index, the Social Progress Index, the Prosperity Index, the World Trade Organization report, etc., in different ways, include indicators that characterize the performance of the country's intellectual activity. For instance, one of the important indicators that is defined in the World Development Indicators study, is the export rating of high-tech products. According to generally accepted standards, high-tech products include products in which the share of research and development works is not less than 3.5%. The volumes of trade in high-tech products thus serve as an indicative effective indicator of the level of intellectual activity of each country.

Trends in the sales of high-tech products show the potential accumulated in countries and the future trends of further development. Thus, not only the structure of trade but also the

internal reserves of the state play a significant role in determining the place of the state in the world arena, in order to maintain leadership in the future among the countries that trade high-tech goods. This is reflected in the World Intellectual Property Organization report, which analyzes the patent activity of countries and the number of patent applications from both residents and non-residents. Thus, both internal capabilities and external sources of intellectualization of the economy are studied.

The level of implementation of the potential of countries, their structure of trade, the direction of development are reflected in global rankings that take into account the above indicators. For example, they are reflected in the definition of the Global Intellectual Property Indicators, which explores the innovative costs of the world and their innovative efficiency.

A consolidated analysis of the indicators of various world rankings allows to conclude that the countries with the highest indicators of development of human potential, financing of research works, trade in high-tech products and services become, respectively, the world's engines of development. It the new technologies, the effectiveness of their implementation, human potential that determine pace and results of development, the country's place on the world stage. With it, the relationship between the general level of the country's development, the level of efficiency of intellectual activity and social development of countries, is identified. The leaders in ratings of education or social progress are countries that are in a group of key innovators (World, 2015).

The presented method allows to confirm and analyze the dynamics of the key trend of modern world economic development – the broad intellectualization of production and trade, the priority development of science, the spread of complex mental labour (Lukyanenko, 2013). That is what forms the centres of development of world civilization and becomes a prerequisite for the formation of a knowledge-based society.

The leading countries of the world form a rather harmonious policy of supporting the intellectual component of the economy and ensuring its innovation. At the same time, the analysis of these indicators by regions shows a rather significant gap. For instance, in the countries of Africa, Latin America and Western Asia, the indicators of innovation are rather low. However, in order to increase the effectiveness of such activities, it is necessary to adhere to the basic principles: innovation policy should be aimed at maximizing innovations in all branches of industry; innovation policy should support all types and stages of innovation; creative destruction; low prices for import of information and communication technologies; support for the creation of key innovations; development of a national innovation strategy and organizations of its support (Global, 2015).

In recent decades, the state policy of the leading countries of the world is aimed at a significant increase in the level of intellectual component of economic activity. Most government programs are aimed at stimulating innovation through increased funding, investor engagement, patent promotion, increase of population’s education levels, and the return of scientists who have migrated. Intellectualization of the economy is the basis of the major state programs of a large number of countries. The success of such a program is beyond doubt, and experience requires further study of all methods and tools used in its implementation.

Conclusions and suggestions

In general, the assessment of intellectual leadership can be done on the basis of a system of indicators, which are summarized in three key levels: resource, results and final results. Each of these levels involves taking into account its subsystem of indicators that detail the resources, results of intellectual activity and their combined impact on the final results of the country's economy.

In the vast majority of scientific works, intellectual leadership is understood only as part of the activity of educational institutions or is implemented on an individual level. However, in our opinion, in today's conditions, intelligence-led leadership becomes a prerequisite for ensuring the competitiveness of any economic entity: the individual, enterprises, the economy, the region, etc. The approach taken to the assessment of intellectual leadership in our work can mainly be used to determine the prerequisites for leadership in countries and regions, assess their competitiveness and development prospects.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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POTENTIAL OF SUSTAINABLE REGIONAL DEVELOPMENT IN VIEW OF SMART SPECIALISATION

Potential of sustainable regional development is studied through demographic, economic, social, socio-cultural and ecological indicators in order to determine the strategy development areas of regional SMART specialisation on the example of Cherkasy oblast (the central region of Ukraine).
Cherkasy oblast was selected for the study because it is one of the pilot regions for the implementation of the SMART specialisation strategies.
The following methods were used in the course of the study: the system-structure analysis, comparative-geographic method, mapping (GIS – MapInfo Professional, Surfer Golden Software, and program for gravity modelling of the potential field calculation), interpolation, correlation and description-statistical method.
The results of the study are intended for national and regional policy-makers, representatives of self-governance, researchers dealing with regional development problems, NGOs, representatives of small and medium business, public activists and others.
The proposed results of the study of the sustainable regional development potential in view of SMART specialisation on the example of Cherkassy oblast may be used in the countries of the Eastern Partnership (Belarus, Georgia, Moldova, Azerbaijan, Armenia).
JEL: M14; M15; G21

1. Introduction

Modern tendencies of innovation development are characterized by their ecological nature dew to opportunities of achieving sustainable development. Achieving the regional sustainable development means overcoming regional disparities caused by environmental damage and deep crises due to poverty and gender inequality, unemployment, etc., as well

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as preserving the environmental, economic, social and socio-cultural benefits for the future generations. Regional innovation policy (SMART specialisation of the region) can become a key element for achieving the sustainable development goals of the region. To this end, in our opinion, it is necessary to study the potential of sustainable regional development in order to identify the territorial disparities and thereby to determine areas for implementation of the SMART specialisation strategy in each separate district of the region, depending on the specificity of the identified territorial problems. This publication reviews the internal territorial problems of the region and indicators of ecological, economic, social and socio-cultural development of the Cherkasy region. The identified territorial problems require urgent solutions for equalizing the regional situation. Implementation of the SMART specialisation strategies is one of the effective methods for improving the acute socio-ecological and economic problems in the region.

The aim is to study the regional aspects of building the sustainable development potential of the region as a prerequisite for developing SMART specialisation regional strategies on the example of Cherkassy oblast.

2. Literature Review

With the steady growth of the importance of regions in the world, scientists do not yet have a consistent approach to the regional development concept. Regional development is characterized by the continuity and irreversibility, transformation of capital and accumulation of new values. Sustainable development characterized by balancing in the economic, ecological and social spheres of the region is one of the regional development concepts. Implementation of the sustainable development concept in the regional development management provides dynamic balanced nature management process and preservation of valuable resources for future generations (Bedrunka, 2020, p. 11-18).

It is difficult to measure sustainable development with one characteristic because of it's the multidimensional nature. In the period from 2003 to 2013 sustainability of sixteen regions of Poland was assessed on the basis of three components: social, economic and environmental. This allowed identifying the internal structure of sustainable development, as well as externalities affecting the region. This analysis allowed classifying the regions and identifying territorial disparities in the regional development in Poland (Cieślak, 2019, pp. 565-575).

Potential of the sustainable regional development is studied for achieving the goals of sustainable development, in particular, poverty reduction. Diversification of crops is a cost-effective way to reduce the uncertainty of farmers' incomes. While implementing the concept of sustainable development in combating poverty in the agrarian regions, it is necessary to consider gender equality, food security, as well as climate vulnerability (Feliciano, 2019).

One of the approaches to achieving sustainable development is based on SMART specialisation. SMART specialisation of rural regions is very important for the balanced, sustainable development of the state. This was confirmed by the research in 19 districts of

Latvia. The quantitative assessment included the differences in the development of the regions in Latvia. This allowed finding the integrated index of smart development based on four indicators: resources, population, economy and management. The qualitative assessment was based on the results of an expert survey among the population and representatives of the government and business. The research findings reveal SMART-specific activities, which allow implementing the sustainable development concept in rural areas, taking into account socio-economic development and territorial differences in the regions (Šipilova, 2017, pp. 82-105).

Natural resources, human resources, goods and technology are unconditional factors of economic growth. However, innovation is yet another evident factor of economic growth, providing opportunities. This should be taken into account in the regions trying to overcome the crisis (Kreslins, 2016).

The SMART specialisation is an approach of the European Union to achieve sustainable regional development. It involves close cooperation and dialogue between government, business, science and community, as well as a shared vision of the region's economic, innovative and scientific potential (Brzóska, 2012).

The issues of SMART specialisation are not the focus of only EU officials. This concept is presented in the works of Ya. Bzhuska, I Pick, P. David, D. Frey, B. Hol, M. Cardas, and G. Tobor including attempts to use it.

The SMART specialisation strategy is the subject of discussion of the innovation policy and regional innovation systems. It is also an instrument of innovation policy for the growth of competitiveness and economic development in the region (Asheim, 2019, pp. 8-25).

The research discovered that the creation of food industry centres based on the SMART specialisation could be beneficial for the regional economic development in Australia (Esposto, 2019).

This article presents the organizational and institutional features of SMART specialisation development. It is discovered that in the course of SMART specialisation strategy implementation problems can arise in various regions from less developed, medium and to advanced. It has been found that SMART specialisation in less developed regions focuses on the policy of learning, and in the more developed ones – on the policy of reorientation and transformation of the regional systems (Trippl, 2019).

Approaches to the SMART specialisation strategy are used in the cohesion policy of the European Union for the period of 2014-2020. This experience is a unique example of industrial policy in the modernization of the industrial sectors (Foray, 2018, pp. 1505-1520).

The study is aimed at identifying factors that best explain the effectiveness of regional innovation. Linear regressions as statistical methods are used for developing methodology. As a result, regions are divided into innovative, strong, medium and weak. Activities for improving innovation interventions in these regions are proposed (Farinha, 2018, pp. 2114-2124).

The study analyzes shortcomings in approaches to SMART specialisation. They are traced in the regional innovation systems existing in the European policy. There is a number of unsolved problems that can negatively affect the innovation policy. This is important for policy officials operating in the multilevel governance systems. The SMART specialisation can be used in different regions, but it is important to understand what challenges and problems will face the policymakers in this area (Pugh, 2018, pp. 530-547).

The SMART specialisation is very difficult to categorize because of its multidimensional nature. However, Poland has identified regional SMART specialisation within the internal potentials of the regions. In total, 81 SMART specialisations were identified. The SMART specialisation study is based on the endogenous potential of the regions. The regional policy should strengthen the competitive industries. However, SMART specialisation strategies are often aimed at supporting underdeveloped or emerging sectors of the economy (Banski, 2018, p. 5-30).

SMART specialisation makes it possible to overcome structural deficiencies in the European social market economy. This is stated in the Europe 2020 Strategy agenda. Also, this agenda specifies the importance of determining the key areas of the resource regions and their readiness for SMART specialisation. Due to cluster analysis, it is found that the developed regions are ready for SMART specialisation by attracting investments into the private sector. Regions of the second type are ready only for public-private partnership. Regions of the third type require state support for increasing investment attractiveness before implementing SMART specialisation (Eder, 2017, pp. 727-734).

Universities and research institutions are drivers of innovation development in the regions. However, they do not pay enough attention to SMART specialisation strategies (Vallance, 2018, pp. 219-238). Using the potential of universities can successfully affect the economy of the remote regions. The role of universities in the regional development is increasing with the actualization of SMART specialisation in the EU (Kempton, 2015, pp. 489-496). Research institutions, as well as educational institutions, play a crucial role in promoting the economic and technological development of the regions. Today knowledge plays a very important role in regional innovation processes. The transfer of knowledge from research institutions to local communities in the social, economic and environmental aspects remains important. Human capital is a major factor in the regional innovation. Innovation is not only a technology but also a change in the human lifestyle (Koprivsek, 2017, pp. 117-135).

When implementing the SMART specialisation strategy, the regions are required to identify the unique regional features for gaining competitive advantages. Material, social and intellectual assets concentrated in the industry and universities are the foundation for SMART specialisation (Knop, 2016, pp. 1876-1882).

The SMART specialisation strategy involves identifying links between technological areas in the region. This is necessary to identify the related industries in the region and to form regional ties with other regions (Iacobucci, 2016, pp. 5-28).

For several years, key issues in the implementation of SMART specialisation in the European Union focused on supporting entrepreneurship (Mäenpää, 2018, p. 20). The study

of urban areas revealed that companies operating on the basis of SMART specialisation have positive performance indicators. However, apositive effect of SMART specialisation on the company performance was observed not in all regions. Positive developments are typical for highly urbanized regions (Nilsson, 2017, pp. 153-174).

Business development is needed to maintain the balance of regional systems. It provides people with jobs and maintains optimal living standard in the region. However, there are a number of barriers for initiating businesses based on high technology of the fourth industrial revolution. Ineffective state support is the main barrier to the development of innovation business. Recommendations were developed for improving the condition of small and medium enterprises in Ukraine (Antoniuk, 2017).

Economic conditions are different in every region. Therefore, every region has its specifics of implementing SMART specialisation strategy. The success of implementing the SMART specialisation strategy depends on the relationship between the local and regional governance (Philip McCann, 2014, p.409-427).

Implementation of the SMART specialisation policy allows eliminating a number of disadvantages of the territorial planning, in particular, achieving balanced territorial development (Polishchuk, 2019).

3. Methodology Data description

The need in identifying the scope of sustainable development potential is relevant for all areas of life, society and all subject areas. However, currently in Ukraine, such areas as the industrial sector, nature-resource sector, innovation, information, structural changes, energy efficiency and economic security are of the top priority (Alymov, 2014).

In order to unify the activities of the regions, the European Commission has developed the manual of RIS 3 Guide (David, 2007). We tried to offer recommendations on the implementation of the SMART specialisation strategy based on the study of the potential of sustainable regional development.

In developing SMART specialisation strategies in the region, it is necessary to understand the territorial differentiation of the potential for sustainable regional development.

Objective assessment of the potential of sustainable development of the oblast region included two main stages: a selection of statistical information and rating assessment of the potential components of the sustainable regional development (Pokliatskyi, 2016).

Statistical information was selected and systematized from the data of the Main Department of Statistics in Cherkasy oblast for 2017-2018. The relevant statistical information was organized according to the following subsystems: economic, social, ecological, socio-cultural and demographic potential.

The economic subsystem included 8 indices characterizing production potential, small business, export-import potential, investment attractiveness and incomes of the population.

The social sphere of the districts of the Cherkasy oblast was evaluated by 9 indices, characterizing such areas as consumption of goods and services, provision of housing to population, housing improvement and public utility services, education infrastructure, situation in the labour market and public health status.

The ecological situation was assessed by four indices characterizing the level of air pollution, the waste management situation and a contamination level of water bodies.

Socio-cultural component included six main indices characterizing the state of infrastructure and tourism, criminal level and family well-being.

The demographic potential was assessed by five indices characterizing population density, natural and migratory population movement, gender-age harmony, economic activity and working capacity of the population.

These indices were used to rate components of the sustainable development potential. As there are many indices pertaining to the components of the sustainable development potential, and they have different dimensionalities, the first step of the methodology is to perform their preliminary rationing (bringing into a similar form). As a result of sequence scaling the districts receive weighting factors from 0 to 1 with dimensionality 0.05 and are sequenced from 1 to 20 for indicators-incentives and in a reverse order for indicators-disincentives.

Each group of indices was divided into five subgroups with high, upper-middle, middle, lower-middle and low indicators. Reducing these indicators into indices allowed estimating situation of the districts in comparison to each other in the oblast region.

Indices of every component of sustainable development potential were calculated as follows:

Index of a favourable economic situation:

$$I_{econ} = (I_1 + I_2 + I_3 + I_4 + I_5) / 5 \quad (1)$$

where I_1 is an index of production potential; I_2 is an index of export-import potential, I_3 is an index of small business development; I_4 is an index of investment attractiveness; I_5 is an index of population income level;

Index of social sphere development:

$$I_{social} = (I_1 + I_2 + I_3 + I_4 + I_5 + I_6) / 6 \quad (2)$$

where I_1 is an index of goods and services consumption; I_2 is an index of housing provision to population; I_3 is an index of housing improvement and public utility services; I_4 is an index of education infrastructure; I_5 is an index of public health status; I_6 is an index of situation in the labour market;

Index of favourable socio-cultural development of the population:

$$I_{culture} = (I_1 + I_2 + I_3) / 3 \quad (3)$$

where I_1 is an index of infrastructure and tourism state; I_2 is an index of family well-being; I_3 is an index of criminal level;

Index of a favourable ecological situation:

$$I_{ecology} = (I_1 + I_2 + I_3) / 3 \quad (4)$$

where I_1 is an index of air pollution level; I_2 is an index of waste management situation; I_3 is an index of contamination level of water bodies;

Index of demographic potential:

$$I_{demography} = (I_1 + I_2 + I_3 + I_4) / 4 \quad (5)$$

where I_1 is an index of population density in districts; I_2 is an index of natural and migratory population movement; I_3 is an index of gender-age harmony; I_4 is an index of economic activity and working capacity of the population.

The results of calculations of these indices demonstrate that by quantitative parameters, the districts of the Cherkasy oblast are located in each of the subsystems in the order of favourable level increase (decrease). The integral indices of the sustainable development potential reflect the objective assessment of the potential of sustainable development, according to official statistics.

However, the regional study involves spatial analysis of expanding the phenomena in the region. Therefore, regional indices of the localization of socio-economic phenomena were used, and corresponding mapping diagrams were plotted.

For example, the index of localization of sales volumes (goods, services) was calculated as follows:

$$I_{local} = (X_i/X_j) / (Y_i/Yj), \quad (6)$$

where X_i is sales volumes in district *i* located in the oblast region *j*; X_j is sales volumes in the oblast region *j*; Y_i is the population size of district *i* located in the oblast region *j*; Yj is the population size of the oblast region *j*.

Other indices were calculated in the same manner. Mapping method was used to visualize the results obtained for Cherkassy oblast districts.

The gravity modelling method was used to design mapping interpolation of index values for 20 districts according to the demographic potential index.

4. Research Results

The demographic potential is a set of population characteristics necessary for its reproduction. The natural movement of demographic potential is changed with a change in social conditions.

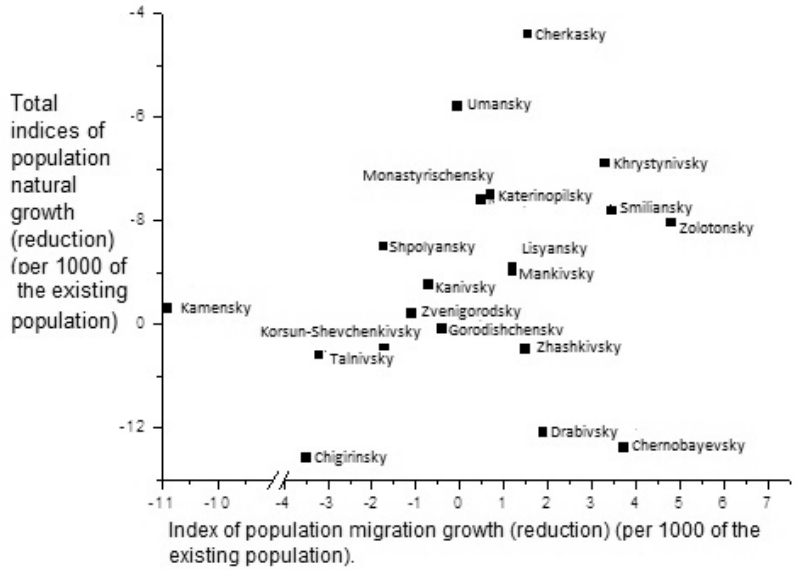
The integral index of demographic potential was calculated by the following indices:

- population density index calculated by the population size available as of January 1, 2018;

- index of natural and migratory population movement calculated on the basis of general coefficients of the natural population growth (reduction) and coefficients of migration growth (reduction) of the population (per 1000 of the existing population) in 2017. The areas of Cherkassy, Umansky, Khrystynivsky, Smiliansky, Katerinopolsky, Monastyryshchensky and Zolotonsk districts are most dynamic by these indices (Fig. 1);
- index of gender-age harmony includes the male to female sex ratio (per 1000 persons) in 2018;
- index of the population economic activity and working capacity calculated by the average population age in 2018.

Figure 1

Natural and migratory population movement in Cherkasy oblast, 2017 (according to the data of the Main Department of Statistics in Cherkasy Oblast)



The gravity model of the demographic potential field (Fig. 2, Fig. 3) shows the available regional centres as growing centres of attraction, which are the cities of Cherkasy, Smila, Uman, Zvenigorodka and Vatutine.

Figure 2

The gravity model of the field of the demographic potential of Cherkasy region, 2017 (according to the data of the Main Department of Statistics in Cherkassy Oblast)

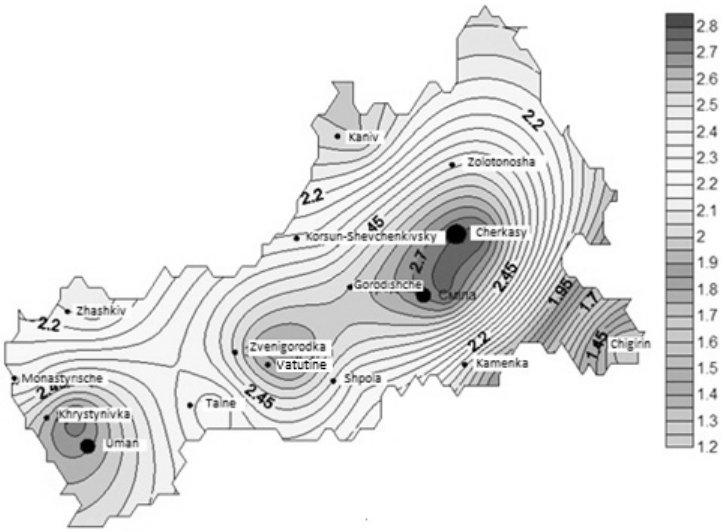
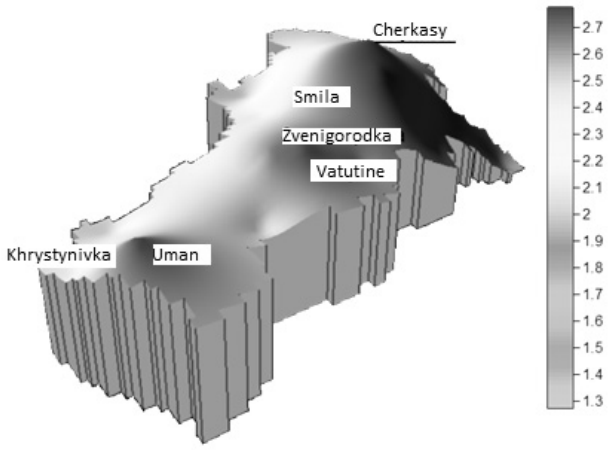


Figure 3

The three-dimensional gravity model of the field of the demographic potential of Cherkasy oblast, 2017 (according to the data of the Main Department of Statistics in the Cherkasy Oblast)



4.1. Economic subsystem

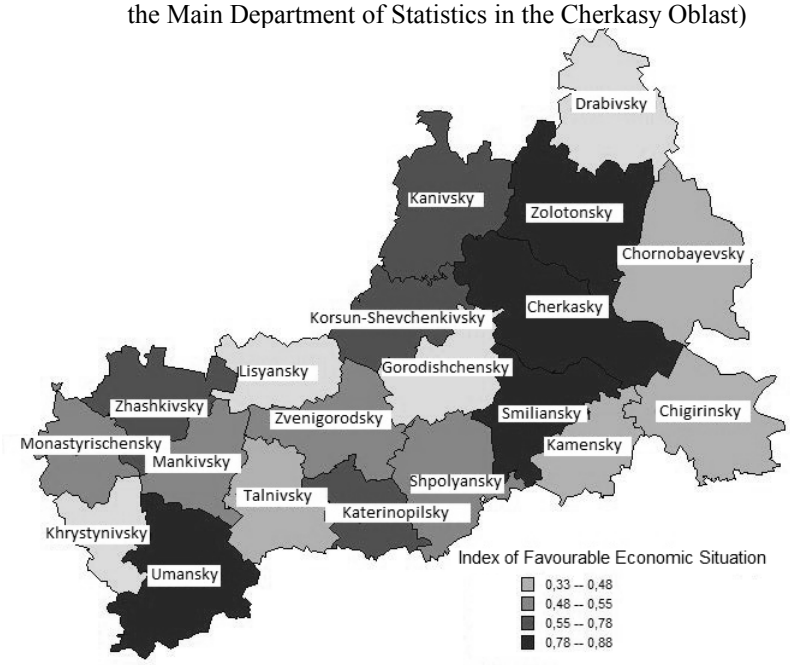
The economic component of the sustainable development potential of the region is revealed through indices reflecting the economic conditions of the population, development of the social sphere and the capacity to meet the needs of the population (Pokliatskyi, 2016). In order to display the economic component, the following indices were selected:

- index of production potential calculated by the sales volumes (goods and services) in 2018 (millions UAH), the number of legal persons and economic entities in 2018;
- small business index (the number of small businesses in 2018);
- export-import potential index (export and import of goods and services (millions USD);
- investment attractiveness index (investment in fixed assets, thou UAH);
- population income index (average monthly nominal wage of full-time staff, UAH)

The highest values of the index of the economic component are observed in Cherkassy, Zolotonsky, Smiliansky, Kanivsky, Korsun-Shevchenkivsky, Zhashkivsky and Umansky districts. Three leading districts are Cherkasky, Smelyansky and Zolotonosky (Figure 4).

Figure 4

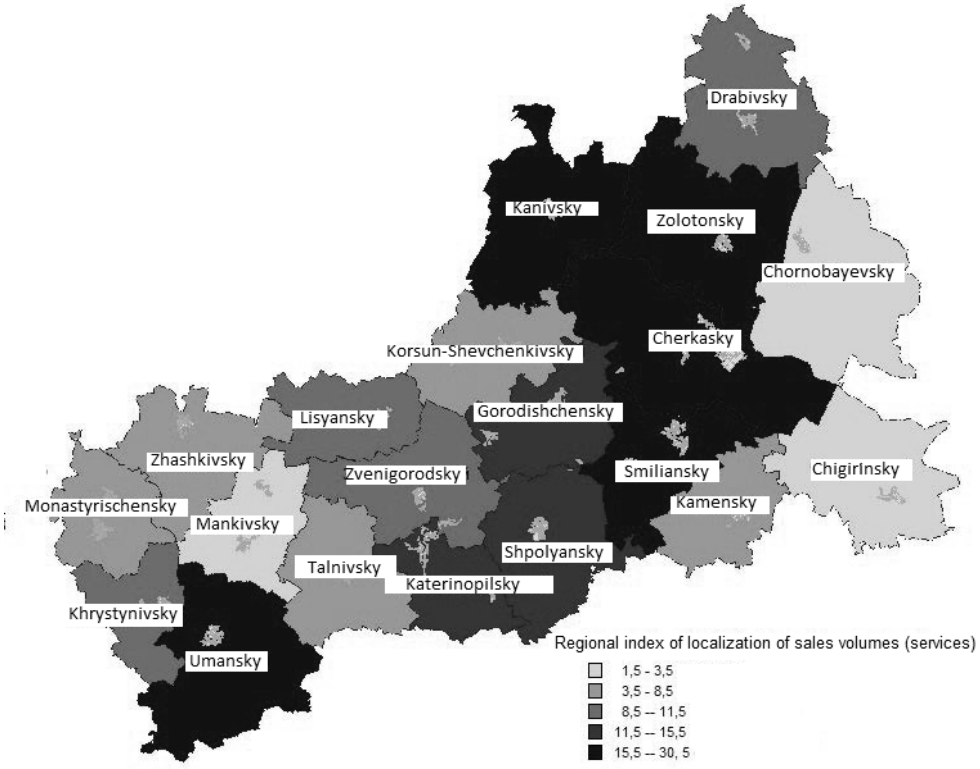
Index of Favourable Economic Situation in Cherkasy Oblast, 2017 (according to the data of the Main Department of Statistics in the Cherkasy Oblast)



The index of localization of sales volumes of services has similar values for these regions (Fig. 5)

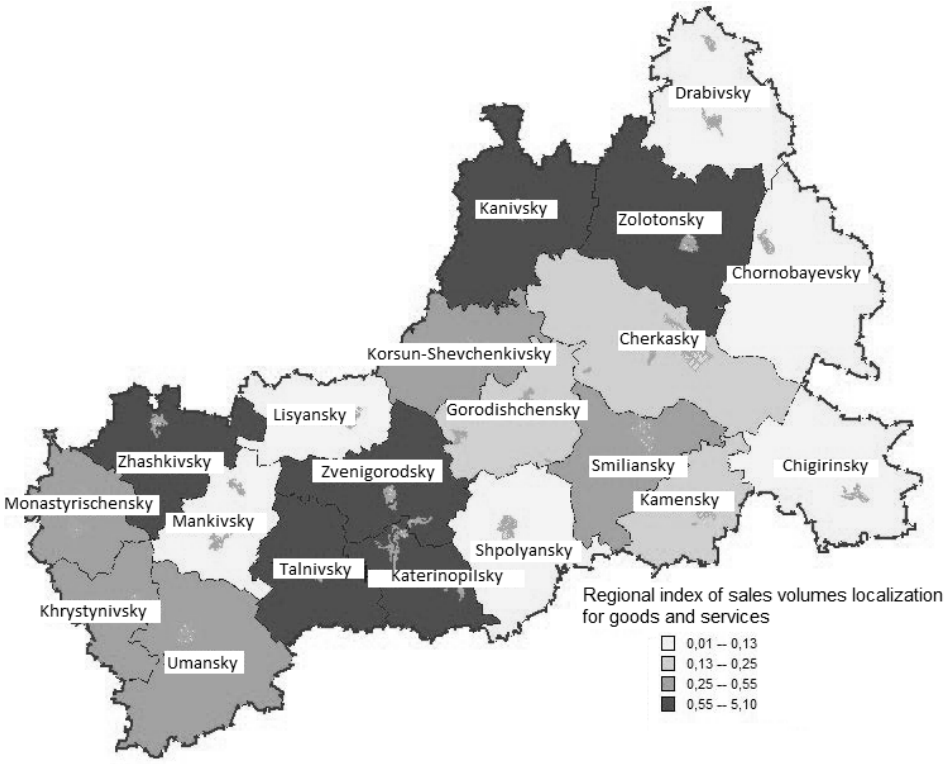
Figure 5

Regional index of localization of sales volumes (services), 2017 (according to the data of the Main Department of Statistics in Cherkasy Oblast)



At the same time, the localization index of sales volumes of industrial products has inverse values: districts with low values of the previous index of sales volume of services to population have high values of this index (Fig. 6)

Figure 6
Regional index of sales volumes localization for goods and services, 2017 (according to the data of the Main Department of Statistics in Cherkasy Oblast)



4.2. Social subsystem

Human capital is a major factor in regional innovations. Innovations are not only technologies but also a change in people's lifestyle (Koprivsek, 2017, pp. 117-135).

Human capital, as the main resource of society, cannot fully develop without social sphere, which in fact is crucial for the growth of the potential of sustainable regional development.

The integral index of the situation in the social sphere was calculated on the basis of the following indices:

- index of consumption of goods and services, which characterizes the living standard of the population and ability of the residents to meet their vital needs (calculated on the basis of the volume of services provided to population per capita in cities and districts (in market prices, UAH);

- index of housing provision (calculated by average values of the total housing area per person in m^2, in 2017). This index demonstrates an improvement of living conditions, which depends on the working capacity of the population, its social health, productive use of free time, marital and demographic situation (Pokliatskyi, 2016);

- index of amenities and public utilities condition. It is calculated by indicators of the dilapidated housing stock (m^2 of the total area), emergency housing (m^2 of total area), equipment of the housing with water supply (cold and hot), heating as of January 1, 2017 (share of the equipped total area). Availability of the necessary amenity elements is one of the conditions for the creation of the appropriate psychological climate and a sign of physical comfort of the inhabitants of the region;

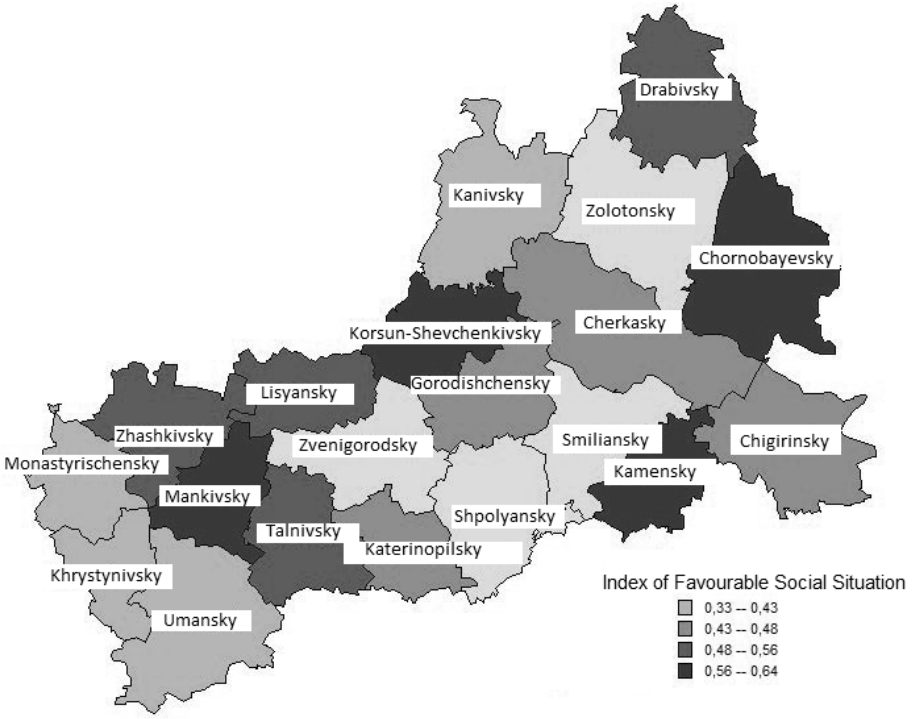
- index of education infrastructure. Educational sector allows people improving their worldview and forming relations in the society. It is calculated by coverage of children with pre-school educational institutions (as a percentage to the number of children of the corresponding age); the number of students of general educational institutions per 10 thousand population; the number of students in higher educational institutions of I-IV accreditation levels in 2017;

- the public health index. Health depends on many factors and well reflects the living standards of the population. It is calculated by the mortality rate of children under the age of 1 year by cities and districts in 2018;

- index of the labour market situation. The situation in the labour market indicates the employment level of the population, its integration into public activities. It is calculated by the indices of the registered unemployment rate (the number of citizens with the status of the unemployed during the reporting period, (persons in 2017) and occupational injuries (per 1000 employees).

According to the index of favourable social situation, the following districts with a favourable (Zolotonsky, Zvenigorodsky, Shpolyansky and Smiliansky) and unfavourable (Drabivsky, Chornobayevsky, Kamensky, Korsun-Shevchenkivsky and Mankovsky districts) social component were identified (Fig. 7).

Figure 7
The Index of the favourable social situation in social component Cherkasy Oblast, 2017
(according to the data of the Main Department of Statistics in Cherkasy Oblast)



4.3. Ecological subsystem

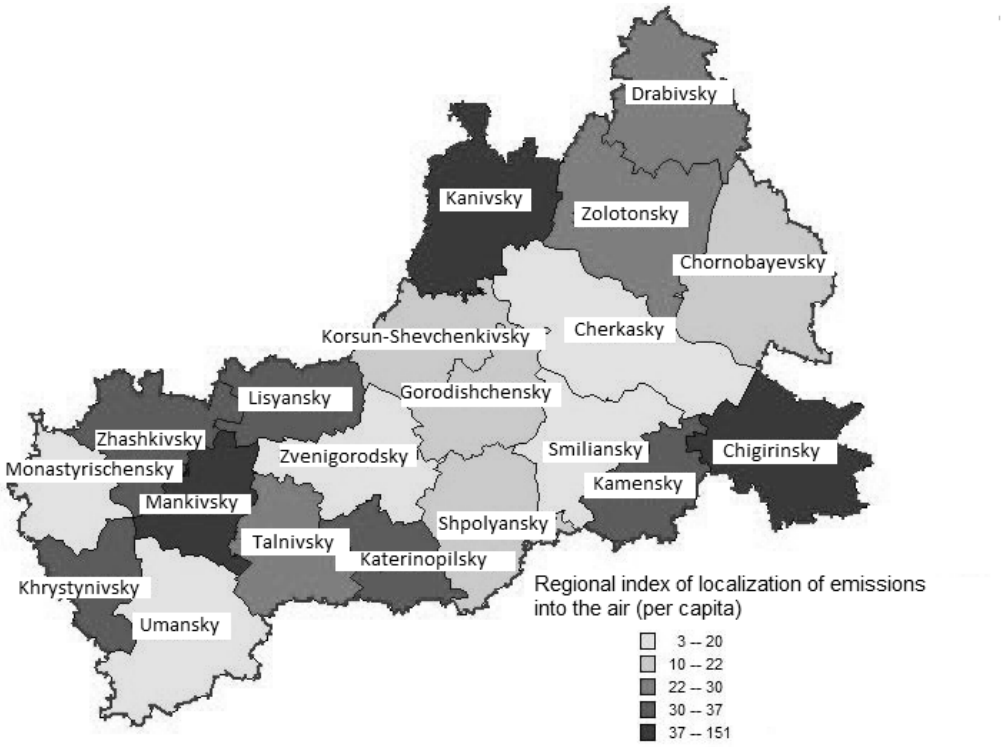
Ecological factor plays a very important role in shaping the potential of sustainable regional development.

Ecological component in the Cherkassy oblast districts was evaluated by three indices: index of air pollution characterizing the volumes of emissions from stationary and mobile sources in the districts, calculated per capita; the index of the waste management situation (the availability of wastes of I-III class); the index of the state of water resources, calculated by indices of freshwater use and the capacity of water treatment facilities (mln.m^3) (Pokliatskyi, 2016).

Mapping of localization index of emissions in the atmosphere (per capita) is differentiated and versatile. It shows that the highest levels of contaminations are observed not in the central regions but in the periphery (Fig .8).

Figure 8

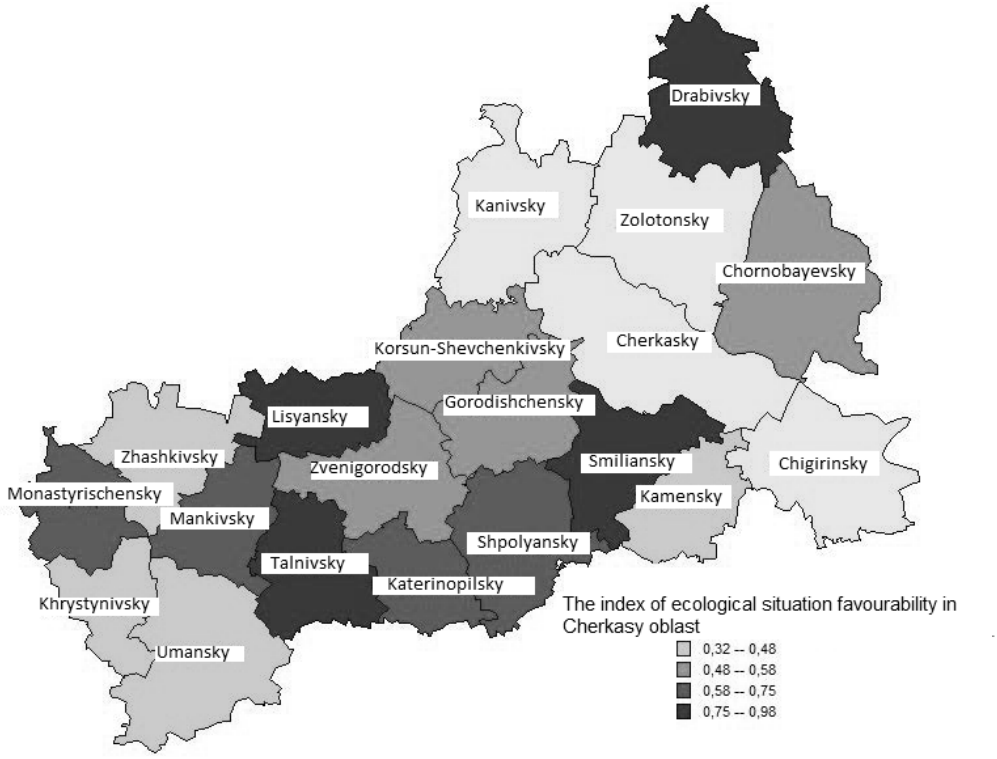
Regional index of localization of emissions into the air (per capita) in Cherkasy region, 2017 (according to the data of the Main Department of Statistics in Cherkasy oblast)



The general ecological subsystem of the potential of sustainable regional development is as follows: the highest indices of ecological favourability are in Drabivsky, Smiliansky, Lisyansky and Talnivsky districts. The most vulnerable ecological situation is in the Kanivsky, Zolotonsky, Cherkasky and Chigirinsky districts associated with indices of industrial and economic development (Fig. 9).

Figure 9

The index of ecological situation favourability in Cherkasy oblast, 2017 (according to the data of the Main Department of Statistics in Cherkasy Oblast)



4.4. Socio-cultural subsystem

Culture meaning cultivating human values, by which humans improve their intellect, develop physically and spiritually, is of great importance in the development of the region. Culture not only creates the intellectual potential of the society but also forms the norms of behaviour, resistance to social pathologies, a sense of community and belonging to a certain territorial community (Pokliatskyi, 2016).

The integral index of social well-being was calculated on the basis of the following indices:

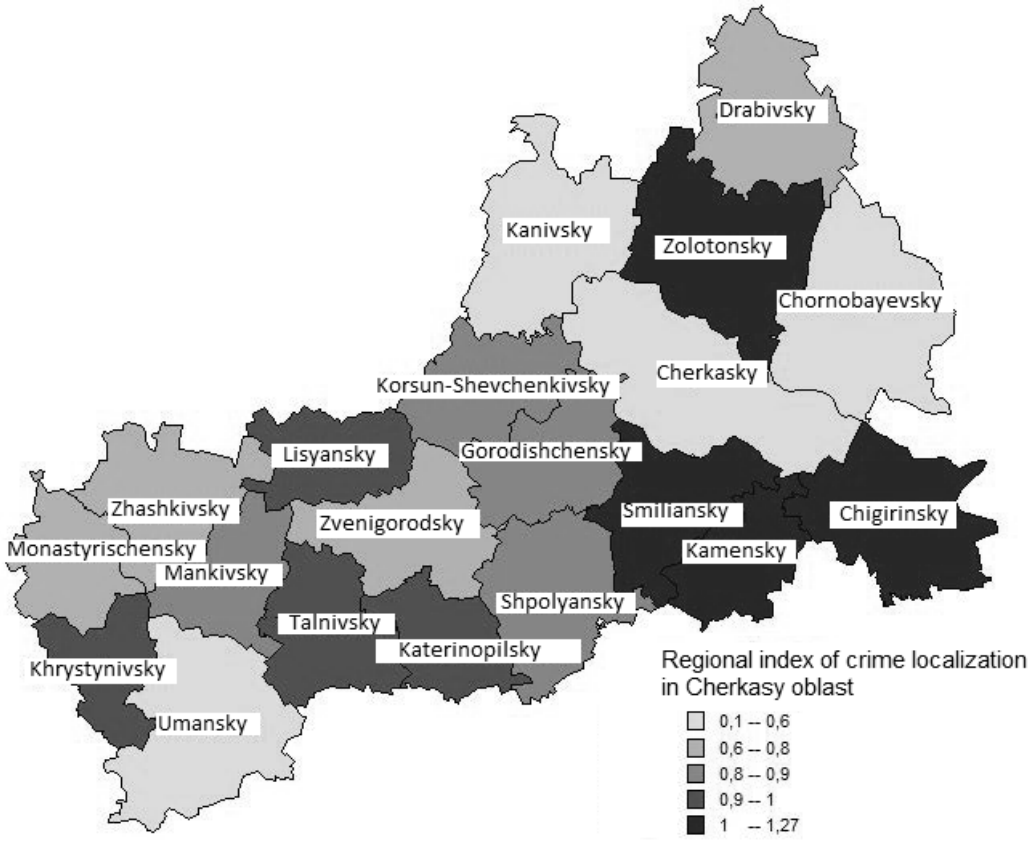
- Index of the state of infrastructure and tourism. Cultural sector constantly confirms its own significance for the population and its status of the system-forming social institution. In general, urban population leisure is potentially more diverse and rich as compared to rural areas.

- Index of the crime situation. Crime expansion is one of the main factors threatening the safety of the society. The regional index of crime localization in the Cherkasy oblast indicates a high social risk in Zolotonsky, Smiliansky, Chigirinsky and Kamensky districts. Such indices are associated with a significant concentration of population of various property status groups on a small area, an intensive manifestation of deviant behaviour, a higher degree of aggressiveness in the society (Fig. 10)

- Index of family well-being. Family well-being in the modern world acquires new features, when the institution of marriage has transformed from the traditional type to the modern one with typical "postponement" until completion of socialization: completion of education, acquiring a profession, attaining certain social status

Figure 10

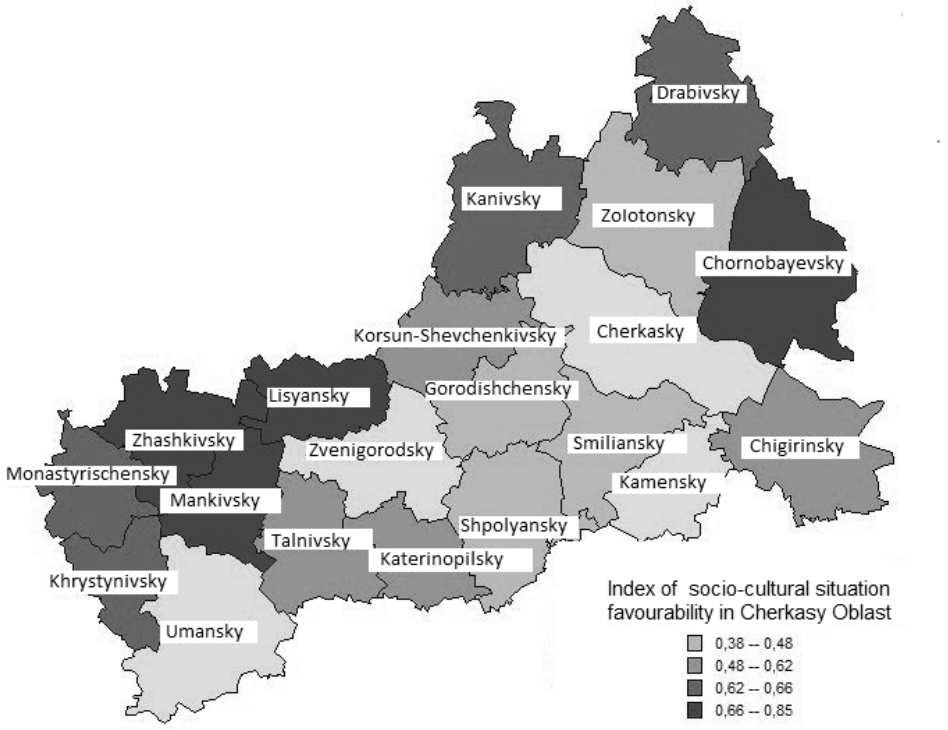
Regional index of crime localization in Cherkasy oblast, 2017 (according to the data of the Main Department of Statistics in Cherkasy oblast)



As it is seen from the mapping (Fig. 11), the northern areas of Cherkasy oblast demonstrate the highest indices of social well-being, which can be associated with bordering on the capital region. At the same time, the central and southern areas of the oblast have low social well-being indices which can be attributed to the remoteness from the capital region and proximity to the depressed and poor Kirovograd oblast.

Figure 11

Index of socio-cultural situation favourability in Cherkasy Oblast, 2017 (according to the data of the Main Department of Statistics in Cherkasy Oblast)



Conclusions

The following steps for encouraging changes in the regional economy are determined in the regional SMART specialisation strategies:

- state support centred on innovations and development based on knowledge, problems and needs;
- instruments are provided for attracting private investments to the R&D area;

- regional and state authorities accept innovation approaches to development (Brzóska, 2012).

Study of the internal differentiation of sustainable development potential in the Cherkasy oblast has revealed the 'foci' of social, economic and environmental advantages or disadvantages among districts of the oblast region.

This stands for the need to consider this territorial inequality in developing SMART specialisation strategy. Grouping of the districts of Cherkasy oblast allowed us to identify groups of districts according to the indices of the economic, social and ecological subsystems, each requiring recommendations for implementation of the SMART specialisation strategy.

Material, social and intellectual assets concentrated in the industrial and educational institutions of strong regions are the foundation for SMART specialisation. The Zolotonsky, Cherkasky, Smiliansky and Umansky districts belong to this category due to their high indices of the economic component. Active investment in innovations is proposed in these districts for the private sector.

Typically, the regional policy should strengthen the competitive industries. However, SMART specialisation strategies are often aimed at supporting underdeveloped regions. These are Drabivsky, Gorodishchensky, Lisyansky and Khrystynivsky districts because of their low indices of the economic subsystem. It is recommended to provide training for representatives of the local government to identify the potential of SMART specialisation in the districts.

Kanivsky, Zolotonsky, Cherkasky and Chigirinsky districts demonstrate low indices of the ecological subsystem. These districts have high economic development indices. Consequently, economic development in these districts is achieved at the cost of environmental losses. Recommendations on implementing SMART-specialisation strategy in these districts include the use of environmental innovative technologies able to reorient industry for not only to increasing capital but also for preserving the natural resource potential of the region.

Human capital is a major factor in the regional innovations. High indices of the social subsystem are observed in Chornobayevsky, Korsun-Shevchenkivsky, Kamensky and Mankivsky districts. For these districts, it is recommended to develop the potential of national and cultural crafts in combination with innovations strengthening specifics of the national identity. Kanivsky, Zolotonsky, Cherkasky and Chigirinsky districts have low indices. These are the districts developed economically but weak in the social component. For these districts, it is recommended to implement social programs for adapting the population to rapidly changing economic conditions. In particular, programs are proposed for adaptation of boarding school graduates, assistance to families in difficult living conditions, programs of providing housing for young families, programs for reducing unemployment.

A strong correlation between the population density index and the integral index of economic development was revealed in the Cherkassy oblast. To a certain extent the field of the demographic potential index "repeats" the mapping of the index of economic

attractiveness. In fact, the indices overlap, demonstrating the joint socio-economic process. Basically, this is a completely interrelated and logical phenomenon as the population is concentrated in the largest cities offering opportunities for economic activity. At the same time, types of economic activity are common in the districts with relevant labour and intellectual demographic potential for this. Such districts are Cherkasky, Zolotonsky, Smiliansky and Umansky. At the same time, the ecological component indicates a deterioration of living conditions in these districts. The environmental situation in these districts is unfavourable. Therefore, it is appropriate to implement SMART specialisation focusing on harmonization of environmental indices and elimination of the existing ecological losses.

Indices of the field of the demographic potential of the districts and high indices of economic development do not guarantee welfare in the social and socio-cultural spheres. Districts with high indices of social and socio-cultural development are the districts with the lowest (with the exception of Kaniv) indices of economic and industrial development and demographic potential. High indices of crime localization in some districts with increased economic favourability (Zolotonsky, Smiliansky) affect this situation. We hope that socially 'quiet' districts of the Cherkasy oblast will be able to improve their economic situation due to the implementation of the SMART specialisation strategy.

The externalities influencing the formation of the sustainable development potential of the Cherkasy oblast include the geographical location, namely, remoteness from the state border (which is a barrier to development) and proximity to the metropolitan area (the most favourable externality). It is precisely those districts bordering on Kyiv oblast that have the highest socio-cultural and social benefits: Zhashkivsky, Lisyansky, Korsun-Shevchenkivskyi, Kanivsky, Drabivsky, Chornobayevsky (the latter is affected by bordering on the Poltava oblast in the east). Western districts bordering on Vinnitsa oblast have the highest development indices (Khrystynivsky and Monastyrishchensky) as compared to the central and southern districts. The lowest indices of socio-cultural attractiveness are in the central and southern districts, which can be explained by the proximity to the depressed Kirovograd region.

Cherkasy oblast has two regional nuclei with high indices of economic development. These are Cherkasy and Uman. At the same time, these regional centres have weak internal territorial ties. An important way of overcoming the territorial disparities in the development of Cherkasy oblast with their acute socio-economic consequences is to form, implement and continuously improve the mechanism of stimulating sustainable development in the context of SMART specialisation, which should be based on fostering the development of innovative green technologies, nature conservation levers and overcoming social and economic disparities at the basic territorial level.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
ECONOMIC STUDIES

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EFFECTS ON THE ECONOMIC GROWTH IN BULGARIA DURING THE TRANSITION TO LOW-CARBON ECONOMY IN THE ENERGY SECTOR[5]

The paper analyses the potential macroeconomic effects that the transition to a low-carbon economy would generate on investment activity and employment in the energy sector in Bulgaria. Global and European initiatives and regulations are reviewed. They trace the changes in the structure of the energy sector and may be assessed as an external shock to the country's economic growth. Using the production function approach, the relationship between real GDP, on the one hand, and capital and employees in the energy sector, on the other hand, is modelled and estimated in 1997-2017. The econometric estimate shows that a negative effect on the real GDP growth rate would be expected due to the contraction of the energy sector. Such effects may stem from the reduction of investments because of a decrease in production and profits in the sector, while employment levels have no significant impact on gross value added. This puts much more emphasis on conducting government policies on maintaining the technological level of the sector than on the negative social consequences of increasing unemployment in the energy sector.
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Introduction

At a global and European level, more and more initiatives are being launched to build a new economic model that focuses on sustainable development rather than the traditional goal of accelerating economic growth. The UN Agenda 2030, adopted in 2015, contains 17 Sustainable Development Goals, which include intentions for affordable and clean energy. The 2015 Paris Climate Agreement is accompanied by a Roadmap that envisages coals to be excluded by the energy mix no later than 2030, which requires a carbon tax of at least $50 per ton. In addition, since 2015, the European Commission has been making proposals that have to a great extent already become acquis communautaire and are linked to the European carbon emission market, the construction and management of the Energy Union and the creation of a new model in the electricity market. As part of the Clean Energy Package of 2016, an agreement was reached to reduce greenhouse gas emissions in the EU by 40% until 2030 compared to 1990 with a binding pan-European target of 32% share for energy from renewable sources.

In this regard, there would be some challenges for Bulgaria in the short and long term. As Simon Kuznets's ecological curve (Kuznets, 1955) shows, there is empirical evidence that when an economy is catching up, there is an increase in environmental damages. Such effect is later confirmed by other economists such as Kenneth Arrow (Arrow et al., 1995). The 2018 Report of the Club of Rome states: "More human economy (more people and commodities) means less natural ecosystem. There is an obvious physical conflict between the growth of the economy and the preservation of the environment." (p. 68). Bearing in mind that in 2017, according to Eurostat, Bulgaria ranks third in the EU in the production of harmful emissions of carbon dioxide and the share of coal in the country's electricity mix is 43% by 2017, inevitably the transition to a low-carbon economy would cost the loss of economic growth and jobs in the country. However, accurate estimates are missing at ьnational level. An additional negative effect may be caused on the country's catching-up development and convergence towards the euro area, which may be delayed by environmental considerations.

The purpose of the paper is to evaluate and measure the effect on the economic growth in Bulgaria due to limitation of carbon dioxide emissions in the economic sector D. "Electricity, gas, steam and air conditioning supply" up to NACE. The sizing of the environmental impact allows both to outline the future prospects for the country's economic development stemming from the state of the energy sector and to frame the subsequent macroeconomic policy challenges. The paper begins with an overview of economic research on the relationship between the state of the energy sector and macroeconomic development. The specific global and European energy initiatives that outline the challenges facing the sector are also reviewed. On this basis, we evaluate the economic effects of changes in the energy sector based on the production function approach and the Solow growth model using data for the period 1997-2017. In conclusion, the results are discussed, and the dimensions of the transition to a low-carbon economy in terms of GDP and employment effects in the country are outlined.

Effects of the Energy Sector on the Macroeconomic Development

The macroeconomic changes that the transition to a low-carbon economy would bring about can be considered in several aspects. First, we focus on sector processes that pose macroeconomic effects and then on purely macroeconomic changes related to the impact on economic growth, employment, investments and foreign trade. We attempt to systematize the research studies both in terms of direct effects on economic growth and the macroeconomic dimensions of environmental transformations in the energy sector.

Despite the declared need for creating a new model of sustainable economic development in the scientific literature and the emphasized positives of the transition to a low-carbon economy, the ensuing effects of these processes should be evaluated in regard to the time period and the level of economic development. Ambiguous economic effects can be clearly identified in the short and long term while the level of technological development and welfare of particular countries also matter. According to some authors, such a divergence in the ecological adjustment of the energy sector is due to the different degree of energy intensity of production processes and the use of coal in electricity production (Cooper et al., 1999). Differences are also observed due to the rates and specifics of economic growth. A study in China finds that the limit of 7% annual economic growth turns out to be crucial for neutralizing the negative effects of the transition to a low carbon economy (Li et al., 2018).

The differences between the short and long-term effects on economic growth from the transition to a low-carbon economy raise the more serious question about the specifics of the traditional economic development model (Ivanova, Chipeva, 2019). The traditional economic growth model does not account for the benefits of the circular economy and the negative environmental effects (Fontana, Sawyer, 2016). However, higher economic prosperity means more greenhouse gas emissions and resource consumption (Chancel, Piketty, 2015). This is a direct consequence of the paradox of Jevons (Bauer, Papp, 2009) according to which people tend to consume more resources when they are more efficient, and thus exceeding much of the savings achieved which potentially leads to even greater consumption of resources in a growing economy. Consequently, there is a conflict between the traditional goal of accelerating economic growth and achieving a sustainable economic development, which sets the macroeconomic dimensions of the transition to a low-carbon economy (Göpel, 2016). In these circumstances, economic growth cannot be viewed as an indicator for achieving sustainable development goals which poses challenges the GDP to be viewed as a measure of national wealth and the GDP growth to be related to the increase of employees (Sotirova, 2019).

In the short run and from a sector point of view, the replacement of fossil fuels with biofuels would lead to a significant change in the energy mix. As a result of the partial or total cessation of the operation of the coal-fired power plants, it is expected that unemployment will rise, ceteris paribus, the employment in the energy sector will be restructured, and the price of electricity will increase because of the increased benchmark market prices for the emissions of carbon dioxide. Such processes would have not only economic but also social effects (Hardt, O'Neil, 2017) especially given the high sensitivity to energy poverty in some countries such as Bulgaria. Meanwhile, other authors argue that an increase in market prices for carbon dioxide emissions creates investment incentives and

leads to positive redistributive effects for consumers. So they cannot be considered as pure welfare loss (Kober et al., 2016), and more broadly they lead to technological advancements that boost economic growth (Duarte et al., 2018).

On the other hand, the use of fertile land and forests for the production of biofuels would put pressure on the agricultural sector and would further limit the possibilities for domestic production of fruits and vegetables (Beluhova-Uzunova, Shishkova, 2019). In a broad context, this is even emphasized as a prerequisite for forced emigration, especially from developing countries and Africa (Liberti, 2013). The requirements in the construction sector to build the so-called "Green buildings" with high energy efficiency could increase production costs and hence real estate prices in short run. At the same time, stimulating green investments and promoting so-called investments for impact, based on environmental, social or management criteria, could put pressure on the investment plans of financial institutions.

Globally, the transport sector is responsible for about 30% of carbon pollution. The shift to electromobile transport is being considered an inevitable measure for achieving sustainable development. However, with a low level of income, purchasing electric vehicles would remain limited. Moreover, raising the price of electricity while restricting the use of coal would lead to a further increase in the costs of this type of transport. In foreign trade, this would adversely affect transport services which are currently subject to various restrictions, especially in the European Union.

The 2018 Report of The Club of Rome proposes reforming the rules in the World Trade Organization and imposing customs restrictions on trade with goods and services whose production or consumption process cause environmental damages. Taking such measures will also limit foreign trade globally. This is particularly true for investment goods that are used in domestic production and together with rising energy prices will adversely affect local competitiveness in foreign markets. Higher exports are often a source of pollution. It is estimated that around 30% of environmental damage and threats to biodiversity is attributed to international trade (Lenzen et al., 2012). Similarly, the proposals to introduce an internationally harmonized but nationally imposed carbon tax would have a direct effect on the industry and its competitiveness. The contradictory effects of such taxation as a way to limit greenhouse gas emissions are highlighted in a study for Australia. The negative impact on key macroeconomic indicators such as GDP, employment, household consumption, exports and imports of goods and services is combined with not sufficient reduction in air pollution which demonstrates its controversial relevance (Asafu-Adjaye, Mahadevan, 2013).

In the long run, the transition to a low-carbon economy is associated with greater efficiency of resource utilization, including through technological improvements and innovations; employment restructuring and its directing to high-tech sectors. Achieving greater resource efficiency is a prerequisite for a continuous increase in the economic growth rates during the transition to sustainable development which is completely in line with the neoclassical growth model of Robert Solow (Solow, 1956). Thus, it is argued that increasing the share of energy from renewables and increasing the efficiency of energy utilization would lead to increased competitiveness and more workplaces in developed Western European countries such as Finland, France, the Netherlands, Spain and Sweden (Wijkman, Skånberg, 2016).

Other researchers view the increase in resource productivity as an argument for reducing the unemployment and raising public welfare because of the restructuring of employment and directing employees to higher-income groups (von Weizsacker et al., 2009). In the same vein, it is argued that economic growth should not be viewed as "victim" of improved resource efficiency but rather that this increased efficiency is a prerequisite for accelerating it (McDonough, Braungart, 2013). Meanwhile, it should not be overlooked that the usage of technologies in developing countries is directly dependent on the penetration of technology in developed countries which corresponds with some lag. This would further exacerbate the occurrence of long-term effects of low carbon transition, and short-term losses may have leading importance for lower-income countries such as Bulgaria (Rezai, Sigrid, 2016). Such negative consequences justify the question on the use of financial resources to limit and tackle the negative effects on economic development posed by ecological measures, which poses challenges to fiscal and monetary policy (Zhelyazkova, 2017). In particular, the role of macroeconomic policy in the process of adapting the national economies to the new realities in the field of the usage of energy resources has been studied for Poland which is one of the EU countries with the largest share of coal in its energy mix (Böhringer, Rutherford, 2013).

Innovations and Regulations Imposing the Transition to Low-Carbon Economy

The coal power plants are a major source of carbon dioxide emissions, given off into the atmosphere. These specifics place their activity at the centre of actively pursued policies at national and international levels that are related to climate change and the transition to a low-carbon economy.

In retrospect, several international instruments have a direct impact on electricity production. The United Nations Framework Convention on Climate Change (UNFCCC) focuses on increased greenhouse gas emissions and the prevention of negative impacts for the environment, and it was adopted as early as 1992. In the same year, the first United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro, adopting a program for the environment and development in the XXI century. The specific targets for reducing the harmful emissions are set out in the Kyoto Protocol[6] Adopted in 1997 to the UN Convention. Its primary objective is to reduce the harmful carbon dioxide emissions, given off in the atmosphere, by at least 5% globally in comparison to their corresponding levels in 1990. Each country should reduce its share by a certain percentage. In order to achieve these goals, market mechanisms are at the forefront, and any country or company in its territory may sell or buy carbon dioxide allowances (quotas) on domestic or international markets. The Paris Agreement on Climate Change, which came into force on 4 November 2016, sets out the EU's leading role in combating climate change through the active financial support to developing countries. The main objective is to limit the global warming process by up to 1.5°C. Despite the relevance of the

[6]. The Kyoto Protocol enters into force on 16.02.2005. Bulgaria ratified the document in 2002. Bulgaria majorly aims to reduce the emissions (measured as carbon dioxide equivalent) by 8% in 2008-2012 in comparison to 1990.

initiatives undertaken, they are treated by an ambiguous way globally and very often the direct negative economic effects outweigh the serious commitment to conducting long-term sustainable development reforms.

The EU is undergoing a major shift in the energy sector. It is triggered both by the climate change debate and carbon dioxide reduction policies at the global level and by the measures taken at a national level. In the Europe 2020 Strategy adopted in 2010 the European Commission sets out in the EU's economic development model the achievement of "the 20/20/20 targets until 2020": 20% reduction of greenhouse gas emissions, a 20% share of renewable energy resources in gross final energy consumption and a 20% improvement in energy efficiency. Member States with a lower GDP per capita than the EU average should cover lower targets with the gap being covered by the EU Member States with a higher GDP than the EU average. In this respect, changes in the energy sector are also linked to the implementation of the Europe 2020 strategy in terms of production structures, foreign investment in the country, R&D expenditure and others (Rangelova, 2011).

The Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants has a direct effect on the operation of coal plants. This Directive was replaced by the Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) with effect from 7 January 2013 for new installations and from 1 January 2016 for existing installations. Hence, the EU regulatory framework has an impact on coal plants as follows:

- *Meeting EU environmental standards.* A number of thermal power plants in Europe have already rehabilitated their production facilities in order to reduce harmful sulfur dioxide emissions and dust concentrations. Despite the measures taken, new investments are needed to meet the standards on permissible levels of mercury in the atmosphere. These one are the cost of the project for the Rehabilitation of Units 1-4, construction of desulphurisation units of Units 1, 2, 3 and 4, and modernization of units 6 and 8 of "Maritza East 2 TPP" EAD that worth EUR 226 million.

- *Greenhouse gas emission allowance (quotas) trading*. The quotas operate on a "limitation and trade" basis, and they are regulated under the Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community. During the current third phase of the EU Emission Trading System, the total number of allowances decreases by 1.74% each year between 2013 and 2020. The corresponding decrease set for the period between 2021 and 2030 is 2% when carbon dioxide emissions in the EU, in line with the objectives of the Paris Agreement, must be reduced by at least 40%. However, it is too ambitious goal bearing in mind the current situation. The reduced number of allowances and the increased electricity production in the EU in recent years have dramatically increased the cost of carbon dioxide emissions: from 5 euros/tonne (mid-2017) to nearly 28 euros/tonne in 2019, an increase of more than 5 times.

- *The increased share of renewables in electricity production.* Bulgaria has achieved the target set for the share of renewable energy in the gross final energy consumption – 16% by 2020. Already in 2012, renewable energy sources accounted for 16.1% of gross

final consumption. Only for the period of March to June 2012 more than 1000 MW photovoltaic power plants were brought into use. In 2013 the share of renewable energy resources was 19% and in the following years it remained above 18%. The rapid deployment of renewable energy sources at national and European level is also supported by the preferential prices at which electricity produced is purchased. The Plan for the Development of the Electricity Transmission Network in Bulgaria for the period 2019-2028, prepared by the "Electricity System Operator" Ltd, draws attention that the bringing into use of renewable energy sources will continue beyond 2020 but at a slower pace and through economic regulated schemes for the purchase of electricity produced. The Clean Energy for All Europeans legislative package adopted in 2016 sets the primary objective of at least 27% of total energy consumption in the EU by 2030 to be generated from renewable sources. The scenarios examined in the Energy Roadmap till 2050 envisage the electricity from renewable energy sources to be at least 55% of gross final energy consumption in 2050. With an achieved high energy efficiency, their share will reach 64%. The scenario with high energy efficiency and the possibility of storing electricity estimates 97% share of renewable energy in gross final consumption.

The Effect of the Global and European Initiatives on the Energy Sector in Bulgaria

With the EU regulatory framework examined, the Member States where coal-fired power plants produce most of the required electricity are the most affected by European legislation in the energy sector. Among them is Bulgaria. The lignite coal power plants have the largest share in the country's production mix in 2017 (43%) with the largest contribution being the "TPP Maritza East 2" Ltd, "ContourGlobal Maritsa East 3" Ltd and "AES – 3C Maritza EAST I" Ltd. In addition to the European directives listed the operation of these power plants has been severely hampered by the recent price regulatory periods, as well as by some specificities related to the organization of the local electricity sector.

In the electricity system of Bulgaria, TPP "Maritza East 2" has a function to regulate power, and it operates daily. This calls into question its functioning through the use of market principles. The main expense of the company is related to the purchase of greenhouse gas emission allowances, and together with the cost of the main fuel, their purchase forms 76% of the cost of the electricity produced by the power plant. "Maritza East 2 TPP" is included in the National Investment Plan, agreed with the European Commission, and according to it, the TPP receives a certain number of free quotas after the implementation of investment projects. These free grants shall be reduced each year. The estimated expected number of grants awarded in 2013-2020 is 15 727 524 tonnes carbon dioxide (about 30% of total emissions) of the quantities emitted by the plant.

In 2015 the Electricity System Security Fund was established and, according to changes in the Bulgarian Energy Act, it receives 5% of the revenue from electricity produced and sold by all market participants. According to the national legislation, "Maritza East 2 TPP" also pays transmission and access fees totalling EUR 5.24 per MWh. Since 2019 the Energy and Water Regulatory Commission in Bulgaria has also introduced an additional charge for the access to the electricity grid for producers of EUR 1.07 per MWh, excluding VAT, which is

due by the electricity producers (except for those, producing solar and wind power). These fees have a direct impact on the financial receipts at "Maritza East 2 TPP" and reduce revenues from the sale of electricity, which necessitated the granting of a loan of EUR 248 million from the Bulgarian Energy Holding Ltd in 2018. However, the granting of the loan may also jeopardize the operation activities of other enterprises in the structure of the vertically integrated organization, as the financial problems of the thermal power plant may be compounded by the increasingly restrictive EU legislative measures. In such an unfavourable scenario the financial deficit must be covered by the redistribution of dividends by the profitable companies, even though EU law prohibits the transfer of funds from one state company to another and to the final consumers of electricity.

The other two power plants in the Eastern region of Maritza river "ContourGlobal Maritsa East 3" and "AES – 3C Maritza EAST I" have no significant financial difficulties at this stage due to compliance with European directives or national legislation. The reason is the signed long-term contracts for the purchase of electricity produced by them at a higher price in order to guarantee the repayment of the investments made. Both plants get the necessary amounts of greenhouse gas emission allowances from international exchanges. Despite these specifics, the costs that "ContourGlobal Maritsa East 3" and "AES – 3C Maritza EAST I" have to make to meet the new requirements for limiting harmful air emissions will adversely affect the financial status of both plants. In the Annual Activity Report and Financial Statement Report of 31.12.2018 "AES – 3C Maritza EAST I" identified as future risk factors for the company's operations the changes in the legislation and the regulatory framework in the field of climate change and the changes in emission limits.

Another debate about the termination of the long-term contracts for power purchase from the two companies also raises a number of questions about their future functioning. All EU legislative initiatives aim at limiting the operation of coal power plants and their future decommissioning. In this context, companies such as "ContourGlobal Maritsa East 3" and "AES – 3C Maritza EAST I" will also have problems when borrowing from banks or finding funds from other private investors.

In addition, district heating companies and so-called factory power plants (companies from the industry, agriculture and health sector), operating on installations for cogeneration production of electrical and heating energy, also pay carbon dioxide emission allowances. According to the data, provided by the Energy and Water Regulatory Commission, thermal power stations on gas and thermal power stations on black and brown coal have a share of about 5% of the total electricity production in Bulgaria. Most of them use natural gas as a main fuel, and they are connected to the network of "Bulgargaz" Ltd and the corresponding gas distribution network. The electricity produced from high-efficiency cogeneration of heating and electricity until 2018 was bought at preferential prices by "National electricity company" Ltd (NEK EAD). Following legislative changes to the Energy Act, the public supplier purchases the generated electricity from the producers with a total installed electrical capacity of less than 1 MW. Producers with a total installed capacity of 1 MW and more than 1 MW participate in the market of balancing energy and the Electricity System Security Fund pays them compensations up to the amount of the quantities. These

quantities are determined by a resolution of the Energy and Water Regulatory Commission for setting a preferential price.

The cost of purchasing the primary fuel also influences the estimated market prices of the district heating plants. In 2019 an increase in oil futures prices was observed which had an impact on both natural gas prices and the electricity prices on the European Energy Exchange. In this way, the bilateral relationship between the prices of energy resources in regard to the economic activity is confirmed but also the impact of the state of the economy on their market price (Chevallier, 2011). On the other hand, greenhouse gas emission allowance costs have a greater impact in higher demand months when consumption cannot be covered solely by non-coal-fired plants.

The conducted review of the regulatory framework and its implications on the state of the energy sector in Bulgaria allows us to outline the sector financial dimensions of the transition to lower carbon production in the energy sector whose effects on economic growth we aim to model and measure.

Modelling of the Effects on the Economic Growth in Regard to the Changes in the Energy Sector

In the scientific literature, the most common method for assessing short and long-term effects on economic growth from the transition to a low-carbon economy is employing the Computable General Equilibrium Model. This class of models uses real economic data, and methodologically they are based on a baseline scenario for economic development and econometric analysis, which formalizes and evaluates certain relationships and interdependences between economic variables. Globally, such a model has been used by the World Bank Group to assess the effects of climate change in 2012 on 140 countries, including Bulgaria – the so-called Global Trade Analysis Project (GTAP, 2012; 2016a; 2016b). This model has also been employed by the OECD and the European Commission to explore a wide range of issues related to the green growth, climate change and environmental sustainability. The famous Dynamic Integrated Climate-Economy models by the 2018 Nobel Laureate for Economics, William Nordhaus, as well as by a number of other researchers in the field, such as Berck et al. (1991), Berrittella et al. (2004), Diao et al. (2008) and Fadali et al. (2012) are also built on a similar methodology.

However, the implementation of such a method for Bulgaria has encountered a number of difficulties related to the relatively short time-series of statistical data, administratively imposed restrictions on the provision of information about the energy sector in the country as well as its diverging development in recent years. Following the purpose of the paper to highlight the macroeconomic impact of the transition to a low-carbon economy, we use the Solow growth model approach and the Cobb-Douglas production function. In this way, by including labour, capital and total factor productivity, we can cover the macroeconomic variables on which the transition to sustainable development is dependent on.

We use the two-factor production function of Cobb-Douglas to describe production in the energy sector as follows:

$$lnY_e = lnA_e + \alpha lnK_e + \beta lnL_e \quad (1)$$

where:

Y_e stands for the gross value added in the energy sector;

A_e is the total factor productivity of the sector;

K_e is the quantity of physical capital used in the energy sector;

L_e is the number of employed persons in the sector;

α and β are respectively the elasticity of production in regard to capital and employees.

The total factor productivity is an implicit economic variable, and it includes a wide range of determinants of economic development such as social infrastructure, scientific and technological progress, and human capital. As we aim to examine the direct macroeconomic effects of the state of the energy sector, we are abstracting from its direct changes.

The value of capital in the energy sector is modelled by the so-called perpetual inventory method (Ganev, 2005):

$$K_{e_t} = K_{e_{t-1}}(1 - \delta) + I_{e_t} \quad (2)$$

where:

$K_{e_{t-1}}$ is the value of energy sector capital in the previous year;

δ is the depreciation rate;

I_{e_t} is the gross fixed capital formation in the energy sector.

When determining the level of energy sector capital from the previous period $(K_{e_{t-1}})$, we use the ratio between the current level of capital in the sector from the previous year $(K_{e_{t-1}})$ and production in the sector two years ago $(Y_{e_{t-2}})$ which, given the steady-state level of capital in the energy sector over the long term, is assumed to be constant. In the scientific literature, this ratio is known as an incremental capital-output ratio, as defined in Minasyan (2008), and it is expressed as:

$$\sigma = \frac{K_{e_t}}{Y_{e_{t-1}}} \quad (3)$$

where σ is the share of the current level of capital in the gross value added of the energy sector from the previous year and it is a positive value $(\sigma > 0)$.

Therefore, the value of the capital in the energy sector in the current year (K_{e_t}) is determined as a constant share (σ) of the gross value added two years ago $(Y_{e_{t-2}})$ given a constant depreciation rate (δ) and the newly formed capital (I_{e_t}):

$$K_{e_t} = \sigma Y_{e_{t-2}}(1-\delta) + I_{e_t} \quad (4)$$

We find the coefficient σ using the OECD methodology (OECD, 2014), which is based on the calculation of the share of the gross capital formation of the sector from the gross value added and its real growth rate:

$$\sigma_t = \left[\left(\frac{I_{e_{t-2}}}{VAD_{e_{t-2}}}\right) * \left(\frac{Y_{e_t}}{Y_{e_{t-2}}} - 1\right)\right] * 100 \quad (5)$$

where:

$VAD_{e_{t-1}}$ is the gross value added of the sector from the previous year.

Employment in the sector is based on statistical data.

Econometric Estimation and Results

Following the modelling of the production function of the energy sector in the country, we estimate econometrically the effect on the real GDP from the level of capital and employment in the energy sector. Thus, we also want to measure the expected effects on real GDP growth rates.

The regression equation we estimate is in the following form:

$$logY_t = \alpha + \beta_1 logK_{e,t} + \beta_2 logL_{e,t} + u_t \quad (6)$$

where:

Y_t is the value of the real GDP at constant prices as of 2010, calculated by the production method;

u_t reflects the value of residuals.

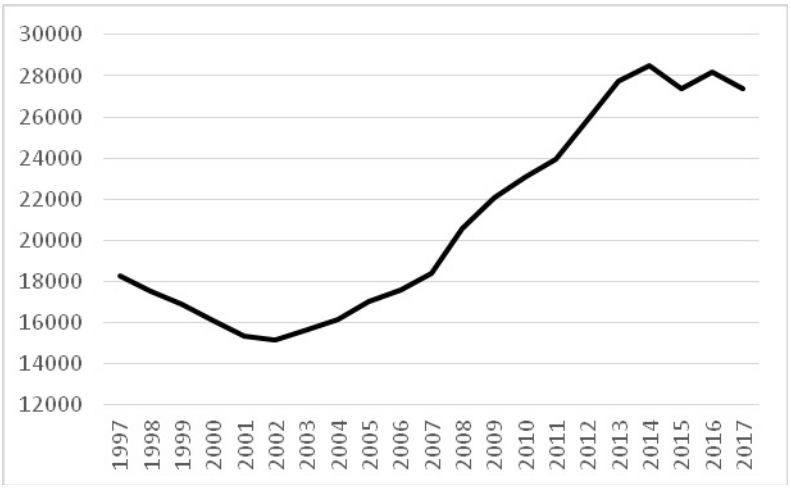
The econometric estimation of equation (6) is based on calculations of the value of capital in the energy sector based on equation (4) as well as statistics on the number of persons employed in economic sector D."Electricity, gas, steam and air conditioning supply" up to NACE. The statistical data in 1997-2017 are from Eurostat.

The data show that the level of capital in the energy sector in Bulgaria decreased before 2000 due to the contraction of investments under unfavourable economic environment. The gradual opening of the energy sector, the entry of foreign investors and its liberalization

lead to almost a double increase in physical capital in 2003-2014. There has been a severe decline in the investment activity in the country as a consequence of the global financial and economic crisis. Thus, we observe a decline in the physical capital, which again demonstrates a strong bilateral relationship between macroeconomic and sector state. However, labour productivity in the energy sector remains on average 3 times higher than labour productivity in the country as a whole due to the high capital intensity of the sector.

Figure 1

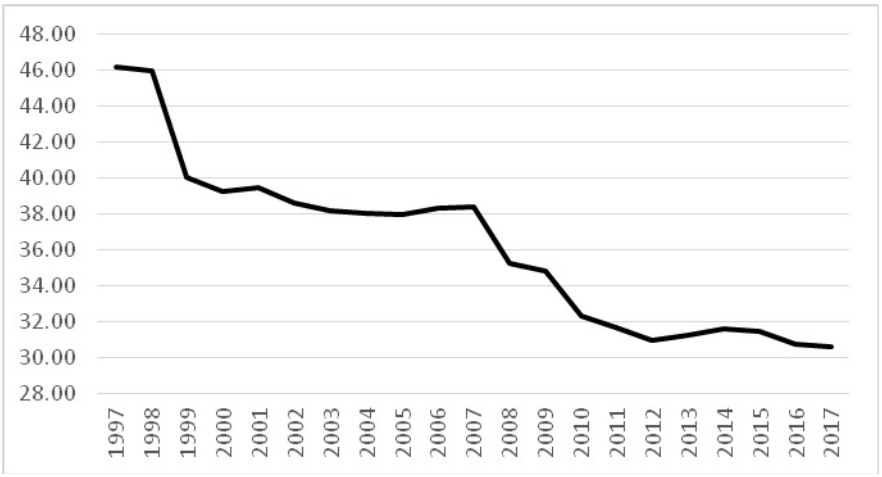
Capital in the energy sector in Bulgaria in 1997-2017 (million BGN)



Source: Author's calculations.

Figure 2

Employees in the energy sector in Bulgaria in 1997-2017 (thousands of people)



Source: Eurostat.

Employees in the sector D. "Electricity, gas, steam and air conditioning supply" up to NACE are experiencing continuously declining which, with the increase of physical capital and persistently high labour productivity in the sector, leads to a relative retention of the sector's gross added value. The average real annual growth of the gross value added of the sector in 2000-2017 is 0.6% with an average decrease of the employed persons in the sector by 1.5% during the same period and a capital increase of 2.8%. This data shows that the sector is becoming more capital intensive with a reduction of employees which allows a relative increase in gross value added averaging 4% as a share of GDP. At a preliminary stage, this also indicates that a reduction in the number of employees in the sector during the transition to a low-carbon economy would not have a significant impact on its gross value added. However, a much more critical factor for sector development are the investments in physical capital.

The results of the estimation of equation (6) using the Ordinary Least Squares (OLS) method are presented in Table 1.

Table 1

Results of the OLS estimation of equation (6)

Dependent variable – $logY_t$, Time period: 1997-2017					
Independent variables	Coefficient	Std. Error*	*t*-Statistic	Prob.	VIF
Constant	10.144	1.552	6.538	0.000	
$logK_{e,t}$	0.392	0.130	3.023	0.007	1.85
$logL_{e,t}$	-0.866	0.094	-9.168	0.000	1.85
Adjusted R^2	0.81				
F-statistic	43.57				
Durbin-Watson statistic	0.52				
BPG *p*-value	0.34				
Number of observations	21				

** Newey–West HAC standard errors*

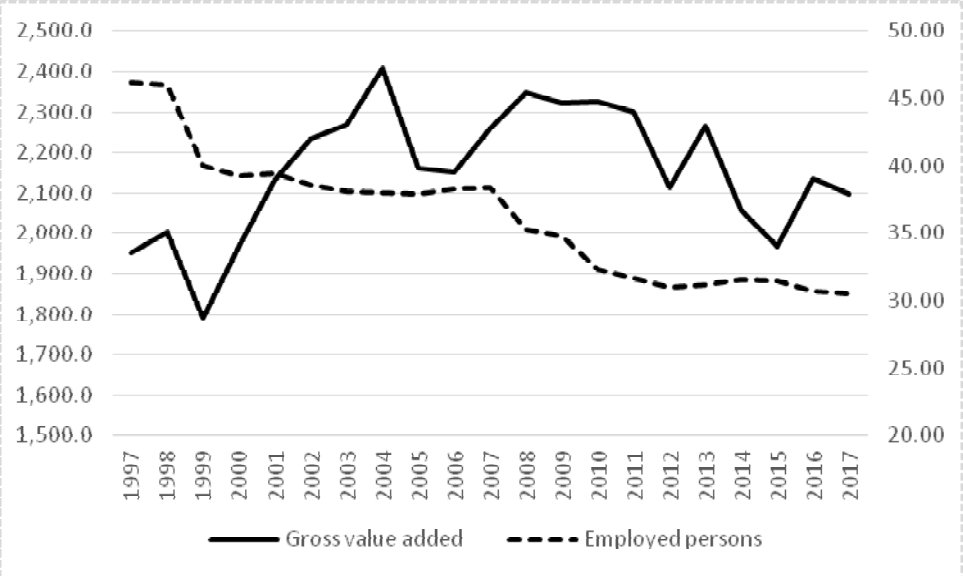
The variables included in the equation are statistically significant at a significance level α=0.01. The results of the Breusch-Pagan-Godfrey (BPG) test show a lack of heteroscedasticity. The variance inflation factor (VIF) is below two for all variables, which means that the degree of multicollinearity is low. The Durbin-Watson test provides information about the presence of autocorrelation. To deal with this problem, the standard errors are calculated using the Newey-West autocorrelation and heteroskedasticity correction method. Econometric residuals are normally distributed with the Jarque-Bera test statistics being 0.02 with p-value 0.98.

The estimated regression coefficients show that a 1% increase in the capital of the energy sector would lead to a 0.39% increase in the real GDP in Bulgaria and a 1% increase in employed persons in the energy sector would lead to a 0.87% decline in the real GDP. The positive sign on the capital variable is expected to have in mind that the sector is capital intensive, but the negative sign of the variable that measures the employed persons in the

energy sector raises serious questions. As we have already mentioned, it is statistically visible there is a shrinkage of employees in the sector, which does not have a serious deterrent effect on gross value added (Figure 3) and it is accompanied by a relative retention of the investments in physical capital (Figure 1).

Figure 3

Gross value added (million BGN – left scale) and employees in the energy sector in Bulgarian in 1997-2017 (thousands of people – right scale)



Source: Eurostat.

A purely technical explanation may also be the inclusion of only the energy sector employees in the regression equation (6) while isolating the effect of all other employees on the actual production in Bulgaria. That is, if one employed in a non-energy sector is more productive than one employed in the energy sector, the negative sign before L_e describes the fact that the entrance of new employees in the energy sector would lead to a lower national output than if the same employees had started working in another sector of the national economy. This effect can also be viewed as a loss of national output because the increase in the number of employees in the energy sector must be accompanied by a decrease in the number of employees in other sectors, assuming that the labour force is approximately constant.

In order to test this hypothesis, the equation (6) was estimated again, adding another control variable, the difference between total employed persons in the country and the employees in the energy sector ($L_t - L_{e,t}$). The corresponding argument can also be made about the addition of the physical capital in the rest of the country among the control variables. However, due to the strong correlation - the correlation coefficient between total capital and

capital in the energy sector is 0.94, the econometric results would be degraded. Therefore, we limit ourselves to estimating only the following equation:

$$logY_t = \alpha + \beta_1 logK_{e,t} + \beta_2 logL_{e,t} + \beta_3 log(L_t - L_{e,t}) + u_t \qquad (7)$$

The results from the Ordinary Least Square estimation of equation (7) are presented in Table 2.

Table 2

Results of the OLS estimation of equation (7)

Dependent variable – $logY_t$, Time period: 1997-2017					
Independent variables	Coefficient	Std. Error*	*t*-Statistic	Prob.	VIF
Constant	-1.05	2.386	-0.440	0.665	
$logK_{e,t}$	0.171	0.076	2.225	0.038	2.61
$logL_{e,t}$	-1.057	0.098	-10.727	0.000	2.68
$Log(L_t-L_{e,t})$	1.728	0.294	5.885	0.000	1.07
Adjusted R^2	0.95				
F-statistic	122.80				
Durbin-Watson statistic	1.31				
BPG *p*-value	0.71				
Number of observations	21				

** Newey–West HAC standard errors.*

All variables remain statistically significant, except the intercept of the estimated equation (7). The model's parameters have been improved with the Durbin-Watson test showing that the autocorrelation is lower and it was most likely caused by a missing variable – in this case, employees that are employed in other sectors of the economy. However, the standard errors are still calculated using the Newey-West autocorrelation and heteroscedasticity correction method. The econometric residuals are again normally distributed, with the Jarque-Bera test statistics 4.38 and p-value 0.11.

The estimated regression coefficients of equation (7) show that a 1% increase in the capital of the energy sector would lead to a 0.17% increase in the real GDP. At the same time, equation (7) does not reject the hypothesis for the negative sign of the variable that describes the employees in the energy sector. Economic logic indicates that when one employed person leaves the energy sector the probability of being unemployed is low and he/she becomes employed in other sectors of the economy due to his/her high professional qualification. In technical terms, starting from equation (7), it is possible that the effect described is due to the positive sign of the difference between the total employed in the economy and the employed in the energy sector $(L - L_e)$ combined with the negative sign of the employed persons only in the energy sector (L_e). Therefore, the expected macroeconomic impact of the shrinking investments in the energy sector will be much higher than that of employment where mainly regional effects can be observed given the

regional specifics of energy production and the demographic characteristics of the Northwest and Southeast region of Bulgaria (Rangelova&Bilyanski, 2018).

Conclusion

The results of the econometric estimation of the modelled dependencies between real GDP and capital and employment in the energy sector show that a fall in the level of physical capital in the sector by 1% can be expected to reduce real GDP in Bulgaria by between 0.17 and 0.39%. Due to the specifics of the sector, its high capital intensity, high labour productivity and a low number of highly qualified workers, no direct effects of employment contraction on economic growth can be expected. Despite the limitations of the econometric evaluation method and the specifics of the statistical data used, they make it clear that, as a matter of priority, government policy should put an emphasis on the technological adaptation of the energy sector and the retention of its investments. Seeking alternatives to provide energy sources that are not directly dependent on high carbon production can be a way of putting off potential negative effects on economic activity in Bulgaria. This emphasizes the importance of the provision of financing for investments in energy projects and the attraction of foreign investors, which should be put as a priority of the government in the field of energy policy. Last but not least, it must be emphasized that our research interest is driven by drawing the direct effects of the restructuring process of the energy sector at a macroeconomic level and we do not exclude that many other factors could also have an effect. Taking them into consideration, it will be possible a more detailed assessment to be made and more clearly the costs of the transition towards a sustainable development of Bulgarian energy sector in the context of decarbonisation and the circular economy to be highlighted.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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Galya Taseva[1]

PASSIVITY OF CREDITORS AMONG NON-FINANCIAL ENTERPRISES IN BULGARIA

The aim of the article is to study creditor passivity among non-financial enterprises in Bulgaria. The analysis is based on data from a national representative empirical sociological survey among 1000 non-financial enterprises of different size and main activity. The results of the survey reveal that a significant part of the companies (little more than one-tenth of respondents) do not have a precisely defined approach to reducing the risk of overdue receivables.

The profile of companies showing creditor passivity is outlined. On the whole, it can be summarized that the share of firms lacking a certain approach to reducing the risk of overdue receivables is higher for enterprises with lower turnover and value-added, with fewer employees, operating in sectors with lower entry barriers, firms that have failed to expand their markets and their production capacity in recent years and are characterized by weak innovation activity.

There are statistically significant links between the lack of a certain approach to mitigating the risk of overdue receivables and various indicators of the relative market power of firms.

The study also identifies dependencies between the passivity of firms as creditors and their innovation activity, the specifics of the corporate culture, in particular, the management of the motivation of the employees, the maintenance of the image of the company in the public space, the concern for building a long-term relationship with the trade partners. These dependencies also testify to the importance of the quality of management and, in particular, to the role of having a comprehensive vision of the company's development for effective credit risk management.

JEL: G30; G32; G39

Introduction

Trade credit is part of the natural business environment. It is associated with a number of benefits for companies, but also with serious risks arising from the overdue payments. According to Van Horen (2007), companies' ability to quickly recover their financial resources invested in receivables accelerates their cash flow and mitigates the negative effect commercial lending can have on the growth of an enterprise. Over the last decades, maximizing the value of the company has established itself as a leading goal of their operation (Nenkov, 2016).

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In Bulgaria, as well as in a number of eastern and central European countries, intercompany indebtedness and delayed payments between businesses are sharply increasing in the transition to a market economy. Different factors are considered in the theory (see, e.g. Taseva-Petkova, 2017). Overall, the literature focuses mainly on the macroeconomic factors of creditor passivity and less attention is paid to the in-company determinants of the behaviour of non-financial enterprises as creditors.

But even after the transformation of economies, the problem of late payments between enterprises in the Eastern and Central European countries persists. Moreover, overdue inter-company liabilities are one of the most significant problems faced by firms in the Member States in the European Union. One reason for this is the passivity in the behaviour of the creditor companies, which justifies the necessity of its research. Despite the serious problem of overdue intercompany payments in Bulgaria, there is also a deficit of research in the field.

A report of the European Commission to the European Parliament and the Council on the implementation of Directive 2011/7/EU on combating late payment in commercial transactions clearly identifies signs of creditor passivity in the behaviour of companies and some of the factors that determine it: "Approximately half of all creditors do not exercise their right to demand interest on late payments and compensation for recovery costs provided for in the Directive, for fear of harming their trading relationship. The external evaluation also showed that for the same reason, many SMEs continue to accept long payment periods imposed by larger companies. This is an inherent feature of business culture, based on differences in the positions of firms in the supply chain, their size and degree of interdependence, as well as other factors such as the specificities of the market sector." (p. 4).

In the face of difficulties in selling the products and growing competition for market share among companies, as is the situation in the period of recovery from the crisis, the role of trade credit to stimulate sales is strengthened, but also the problems related to the passivity of creditors, which requires its analysis precisely during the post-crisis period.

The aim of the article is to study creditor passivity in non-financial enterprises in Bulgaria. In order to achieve this goal the following tasks have been set: 1) to study the dependence between the lack of approach to reduce the risk of overdue receivables and the basic internal characteristics of the enterprises in the country; 2) to analyze the in-company determinants of the creditor's passivity; 3) to outline the profile of companies that show passivity as creditors.

Theoretical overview

According to Bonin and Schaffer (1999), the reason for the creditor's passivity of companies during the transformation of the economies in the eastern and central European countries is the insufficient return on the liquidation of the debtor company. Schoors and Sonin (2000) identify two extreme cases of equilibrium: the first when all creditors choose to wait for and the second, when everyone prefers the forced collection of the receivables. In the basic model of Schoors and Sonin (2000), each creditor, comparing the present

values of the results for both approaches to determine whether to wait or collect the arrears. At the beginning of the transition, due to the lack of legislation on bankruptcies, an equilibrium is formed in the former communist countries, where creditors prefer the option to wait. In later periods, bankruptcy laws and procedures have been introduced in the countries, but creditor behaviour remains dominated by creditor's passivity.

The explanation of Schoors and Sonin is that creditors find themselves in a Nash equilibrium trap in which creditors prefer not to resort to enforcement. Changing this balance is linked to coordination costs, and they are a growing function of the number of agents whose conduct is coordinated. Thus, coordination costs are the reason for keeping the existing balance.

In transition countries, creditor passivity is fueled, in addition to the inherited bad debts, traditional soft budget constraints and weak banking regulation, and the coordination problems that arise in an economy with many banks and companies with financial problems (Mitchell, 1998b). Mitchell (1998) points out that if firms in difficulty expect to be rescued by the state in the future, their creditors may also prefer to wait for this rather than take immediate action to liquidate the debtor.

Pelinescu (2013) points out that at the beginning of the transition in Romania there is a tolerance of trade credit arrears by lending companies, which contributes to the expansion of the arrears network in the country's economy. According to Perotti (1993), Pelinescu (2013) assumes that the reason is the collusive behaviour of companies and the voluntary expansion of credit among themselves, despite the knowledge that they will not be paid. Companies expect the government to intervene with a collective bailout if firms threatened by bankruptcy become too much.

These expectations are realized in the applied compensation schemes, bilateral compensation and other compensation schemes implemented in Romania. According to Pelinescu (2013), companies feel tolerance for arrears, demonstrated by the government, so efforts to improve the financial condition of firms by restructuring their operations and improving management have less influence than needed.

According to Schoors and Sonin, creditor passivity also has a negative external effect on incentives for other creditors to be active in collecting their receivables. This external effect is practically intensified when economic agents face problems due to symmetrical shocks such as macroeconomic stabilization or a liquidity crisis. But even with a stable macroeconomic environment, the problem with creditor passivity does not disappear.

The propensity of creditors to be passive is an argument in favour of including an automatic clause ("automatic trigger") in insolvency law in order to make credible the threat of bankruptcy. A counter-argument against the introduction of such a clause is the risk of mass bankruptcy due to the existence of a huge reserve of bad debts in the balance sheets of banks and companies (Mitchell, 1998).

Bonin and Schaffer prove empirically that in Hungary, where, contrary to expectations, there were hard budget constraints, the effect of rigid legislation and the automatic bankruptcy mechanism that has been implemented in the country for 18 months in the

1992-1993 period, further exacerbates the problem of credit contraction and ruins economic activity (Bonin and Schaffer, 1999).

According to Alfandari and Schafer (1996), delayed payments exist because they are a liquidity buffer that is cheaper than, for example, bank loans but is only possible because creditors accept late payments. They distinguish three types of arrears – delayed payments, bad debts and "strategic arrears" or "collusive arrears" according to the terminology used by Perotii (1993). For Alfandari and Schafer (1996) delayed payments and bad debts are two different types of arrears that differ in their nature.

Bad debts are associated with companies experiencing serious financial difficulties. Most of all of these debts of companies in financial distress will not be paid in the short or medium term. Delayed payments are arrears where debtor companies pay later than the agreed term but still pay. They analyze the delayed payments as a stock and as a flow.

The stock of arrears as a result of late payments is generally stable over time because medium-term inflows of arrears (representing new debts that occur but are not paid on time) are generally the same as outflows (they are factually payments of arrears). In the absence of monitoring or loosening of monitoring, delayed payments would become bad debts, but Alfandari and Schafer think that the situation in Russia during the period considered by them is not such. According to them, the total value of trade credit in Russia during the transition period remains more or less at levels that are observed in Western economies. One of the reasons for this is that the companies in the country have learned to apply the basic methods of control and collection of arrears in the first year of transformation of the economy. For confirmation, they interpret World Bank survey results, which, according to their opinion, show that in mid-1994, companies are aware of the importance of credit control and apply the main control methods. This gives them a reason to assume that companies in the country are imposing "hard budget constraints" and that the market imposes financial discipline on businesses. They also analyze the creditor firms' motives for allowing delayed payments under effective monitoring. The most common answer to the question why companies do not take legal action to declare the debtor bankrupt when he delays payment is that the probability of payment of the claim is too low either because the debtor is heavily indebted to other creditors or because other creditors have priority in meeting their claims. Secondly, companies point to the need to support their customers. Alfandari and Schafer (1996) interpret this response as evidence of the creditors' reluctance to lose clients or as a manifestation of altruistic motives in their behaviour. They argue that temporary delays in payments to creditors can serve as a buffer to firms with liquidity problems or other financial difficulties. But they can also be the result of other reasons, for example, that customers can derive ex-post better payment terms from their suppliers.

There is a number of evidence in the literature that tolerance of arrears is a mechanism to deal with debtors' temporary liquidity difficulties. Suppliers provide a type of insurance to customers by providing them with liquidity through a continuous flow of supplies under deferred payment terms. The reason is that vendors are interested in the survival of their customers, especially when their loss is associated with high costs. Cunat (2003) develops a model that suggests that the cost of replacing suppliers and customers is too high. They are

related to the commencement of new business relations and may be both technological in nature and stemming from legal procedures, negotiation costs, exploration, etc.

Suppliers finance their clients even when banks are not willing to lend them. This is done by expanding sales with deferred payment, extending the terms of trade credits or allowing for overdue payments. Delay in debt payments is the main instrument for providing liquidity, which explains the wide spread of arrears. Suppliers tend to forgive debt or extend the term of trade credit when their clients' liquidity problems threaten their own survival. Firms with financial problems generally delay payment of their obligations, but rarely incur monetary penalties or termination of supplies by their business partners (Cunat, 2003). Boissay and Gropp (2007) confirm that trade credit serves to provide financing to firms with difficult access to credit, and also that vendors insure their clients against liquidity problems. As proof of the role of trade credit as a mechanism for providing liquidity insurance, it is assumed that companies continue to source raw materials companies that have not previously fulfilled obligations to them.

Failure to meet trade credit obligations serves to overcome liquidity shocks. Companies who have problems with their debt collection are more prone not to meet their own trade credit obligations, leading to the creation of chains of overdue payments. The results of their analysis show that companies are able to transfer more than a quarter of unexpected liquid shocks. In addition, firms with financing difficulties are more likely to transfer their unexpected liquidity shock by failing to pay their trade credit obligations, as opposed to larger and more liquid companies that have access to external institutional funding.

Short-term financing for companies is mainly provided by short-term bank loans and obligations to suppliers. The choice between these two options is an important element of working capital management (Nenkov, 2008, p. 174, 178).

The analysis of Boissay and Gropp (2007), unlike that of Cunat (2003), is not limited to bilateral supplier-customer relationships, they establish not only mutual but also multilateral insurance and liquidity provision between firms. All companies, including those with difficulty in accessing finance, provide liquidity insurance to their clients as they themselves are insured by their suppliers. Liquid shocks are passed along the trade credit chain until reaching a firm that has access to external, institutional funding that absorbs the shock. By extending the term of credit to clients who do not meet their obligations to them, liquid companies relieve the financial difficulties not only of their clients but also of companies with which they have no direct business relationship by injecting liquidity into the sector. The extension of the terms of trade credits in such cases is conditioned by the desire to provide customers with liquidity. However, in order to determine the optimal term of trade credits, it is necessary to determine the relationship between the extension of the credit terms and the change in the sales of the company, as well as the additional costs of financing the receivables and losses from uncollectible receivables (Aleksandrova, 2007, p. 271).

Liquidity is distributed to the corporate sector along the trade credit chain where it is most needed. Absorbing liquid shocks, large companies with access to institutional funding also prevent the need to liquidate assets.

Suppliers who are interested in maintaining business relationships provide more concessions to financially troubled customers than creditors in competing credit markets (Wilner, 2000).

Suppliers are lenient creditors compared to banks because they have an implied share in the capital of customers and are interested in maintaining a long-term relationship with them. Banks usually have collateral for their claims and have priority in settling claims in case of declaring the debtor bankrupt, making them more likely to resort to liquidation procedures in case of non-payment (Huyghebaert, Van de Gucht and Van Hulle, 2007; Cole, 2010). That is why more risky clients prefer financing from their suppliers, which gives them flexibility in case of financial problems.

Through the renegotiation of debts, suppliers are seeking to protect already-provided loans as well as future profits. In case of insolvency, the creditor and the debtor choose between the following alternatives: court proceedings or renegotiation of the loan where the debtor company continues to operate. Wilner (2000) compares the renegotiation with a Nash game where, in the absence of agreement, both parties suffer losses in the form of lawyer's fees. When the debtor has a small contribution to the creditor's profits, and he is less dependent on the client, the threat of stopping supplies is more creditworthy. In this case, the supplier is willing to make smaller discounts when the debtor has financial problems. The amount of discounts varies depending on the degree of dependence of the supplier on the debtor who has financial problems. But when interest rates rise in the economy, vendors are worrying more about their current profits than about maintaining business relationships and expected future profits. As the risk-free interest rate increases, discounts on renegotiations decrease. Moreover, by reducing the probability of debtors becoming insolvent, renegotiation of debts becomes less likely and therefore reduces discounts offered by suppliers as well as interest rates on trade credits.

A survey by Ivashina and Iverson (2014) also demonstrates the importance of trade relations and the desire to continue trading with troubled debtors for the behaviour of creditors. They pay special attention to trade credit theories that are built on the basis of the relationship between trading partners. Their research is also based on the assertion that modern debt markets allow for intense trading in debts of bankrupt companies.

Ivashina and Iverson (2014) confirm the hypothesis of suppliers' information advantages (Petersen and Rajan, 1997; Smith, 1987). Compared to banking institutions, vendor companies have a better opportunity to diagnose customer status through more frequent visits and receive accurate and timely information from orders and financial decisions of clients. All this helps suppliers to assess the degree of financial distress and the complexity of the potential restructuring process. For this reason, Ivashina and Iverson (2014) expect that creditor firms' decisions to keep or liquidate claims from bankrupt trading partners are related to expected insolvency results, including its duration, recovery rate, and restructuring.

By examining the behaviour of creditors, Ivashina and Iverson (2014) come to the conclusion that suppliers who grant significant amounts of trade credit (measured against their own capacity) have inside information about the borrowers.

They investigate the behaviour of suppliers in bankruptcy of debtors and prove that suppliers likely to have more insider information (suppliers that extend their trade credit more than their capacity) are significantly more prone to sell their receivables when having expectations of a low recovery rate. They also prove that these vendors sell their positions on average four months before less informed suppliers when recovery rates are lower. These results are particularly pronounced in cases where a financially troubled debtor relies heavily on trade credit as a source of funding instead of bank credit or other forms of credit. Generally, non-public companies use significantly more trade credit than public companies.

Ivashina and Iverson (2014) also examine how supplier behaviour and, in particular, decisions to sell receivables depend on the outcome of insolvency proceedings. Because they have an implied share in the business of the debtor company, suppliers are less likely to sell their receivables when the company reorganizes itself as an independent entity. Creditors are more likely to sell their receivables when the debtor is sold in bankruptcy. The conclusion reached is that the suppliers are interested not only in the recovery rates but also in whether the relationship with the debtor company is likely to continue in the future.

Marotta (2001) found that due to legal-institutional factors and, in particular, the ineffective protection of creditors' rights, companies in Italy rarely demand penalties for late payment of trade receivables. Wilner (2000) also points out that the majority of companies do not impose penalties for late payment, and when such penalties are required, their collectibility is less than 50%.

There are also alternative explanations of suppliers' reluctance to impose late payment penalties on their customers. An alternative explanation is, for example, the willingness of suppliers to limit the outflow of positive externalities to other suppliers which are generated by subsidizing the cost of maintaining inventories of their long-term customers (Daripa, Nilsen, 2005).

There are also assertions in the literature that suppliers' financial condition is also important for their behaviour in late payment by customers. For firms who are in a difficult financial situation, it is more difficult to take legal action against debtors and can not take advantage of the threat of termination of future deliveries (Petersen, Rajan, 1997).

Among the factors of creditors 'passivity in the literature are often mentioned companies' reluctance to show bad debts in their balance sheets (Schoors, Sonin, 2000; Mitchell, 1998a; Mitchell, 1998; Mitchell, 1999). The propensity of creditor companies to disclose information that affects their debtors can be interpreted in different directions.

Barbosa, Moreira and Novaes (2004) point out, for example, that in the ordinary course of business, suppliers receive information advantages over financial institutions in terms of the creditworthiness of their clients. They also analyze the incentives for suppliers to accurately disclose customer information they have due to the effect of this information on interest rates on bank loans and hence on suppliers' loans. For suppliers who have the opportunity to expand trade credit, a dominant strategy is to present customers as being riskier than they actually are. This would lead to higher interest rates on bank loans, which are a potential source of funding for their clients, and hence an increase in interest rates on trade credits, which are an alternative source of funding. If suppliers have not the opportunity to expand

trade credit, a dominant strategy is to present customers as risk-free. This would lead to an increase in bank credit for their customers and hence an increase in demand for the output they produce. Barbosa, Moreira and Novaes (2004) also point out that bank interest rates are irrelevant in an equilibrium situation where suppliers do not impose interest on credits to their clients.

However, the Barbosa, Moreira and Novaes (2004) interpretation of incentives for creditor companies to disclose information about their clients may be complemented by the fact that disclosure of unfavourable information on debtors' solvency would seriously reduce their ability to obtain funding from a bank, with which they could refinance their overdue liabilities to them, all the more so that banks have advantages in satisfying their debts in bankruptcy of debtors.

Empirical research

For the study of creditor passivity among the non-financial enterprises in the country, data from a national representative empirical sociological survey among 1000 companies was used, which was conducted in the summer of 2015.[2] The sample is stratified by region, main activity and size of the companies. The survey was conducted using the structured interview method.

In the sample are included companies with different sizes and main activity. The distribution of enterprises by their main activity is presented in Table 1.

The largest is a share of micro-enterprises (with up to 9 employees), which are two-fifths of the surveyed companies (40.5%), and the smallest is a share of large enterprises (250 or more employees) which are one-tenth (10.2%) of the surveyed companies.

The distribution of firms by number of employees is shown in Table 2.

Table 1

Distribution of companies by main activity

	Number	%
Agriculture, forestry, hunting and fisheries	46	4.6
Industry	101	10.1
Construction	59	5.9
Trade; Vehicle repair	380	38.0
Hotels and restaurants	78	7.8
Transport, storage and messaging	60	6.0
Others	276	27.6
Total	1000	100.0

Source: Author calculations.

[2] The research was carried out by the ESTAT agency within the framework of the project "Improving the quality of education and research in the field of business engineering for building a knowledge-based economy (innovation) and finance", with the financial support of the Operational Program "Development of Human Resources (Contract № BG051PO001-3.3.06-0053), realized by Higher School of Insurance and Finance and Partner Economic Research Institute of the Bulgarian Academy of Sciences

Table 2

Distribution of companies by number of employees

	Number	Per cent	Cumulative per cent
1 to 9 employees	405	40.5	40.5
from 10 to 49 employees	222	22.2	62.7
from 50 to 249 employees	271	27.1	89.8
250 and more employees	102	10.2	100.0
Total	1000	100.0	

Source: Author calculations.

According to the size of the turnover, the companies in the sample are distributed in the manner presented in Table 3. The issue of the amount of sales revenue is measured on a category scale which allows, to a certain extent, to circumvent the problem of companies' reluctance to disclose accurate information about its financial indicators.

Table 3

Distribution of companies according to the turnover

Turnover	Number	Valid per cent	Cumulative per cent
Up to BGN 100 000	297	42.7	42.7
From BGN 100 001 to 500 000	143	20.5	63.2
From BGN 500 001 to 1 000 000	72	10.3	73.6
From BGN 1 000 001 to 5 000 000	92	13.2	86.8
Over BGN 5 000 000	92	13.2	100.0

Source: Author calculations.

The data is processed with the SPSS software product. The nonparametric chi-squared test was used in the study. It is assumed a significance level of 5%.

The lack of a certain approach to reduce the risk of arrears of trade receivables is seen as an indicator of creditor passivity. Creditor's passivity is analyzed in a broader sense, not only as a behaviour of firms in a situation of arrears of a trade receivables but also as omitting the possibility of taking preventive measures to limit the risk of overdue and uncollectible receivables.

None of the companies that indicate that they do not have a certain approach to reduce the risk of arrears of trade receivables does not apply any of the measures outlined in the questionnaire to guard against late payment by customers. The distribution of the actions taken by non-financial enterprises in the country to protect against late payments from customers is presented in Table 4. The negligible rate of responses to taking other actions than those mentioned gives grounds to assume that the measures listed outline exhaustively the protection measures applied by companies in the country.

Table 4

Measures, taken to reduce the risk of overdue receivables

	Number of answers	Percentage of responses	Percentage of cases
They do not have a precisely defined approach	**107**	**4.8**	**10.7**
Require immediate payment on a purchase	697	31.0	69.7
Require an advance payment	451	20.0	45.1
Stop supplies for unfair debtors	315	14.0	31.5
They require a bank guarantee	183	8.1	18.3
They take legal measures to collect overdue receivables	177	7.9	17.7
They insure their trade receivables	93	4.1	9.3
They impose penalties for overdue payments	87	3.9	8.7
Have a department dealing with receivables management	81	3.6	8.1
They use the services of a factoring company	34	1.5	3.4
They use the services of debt collector firms	20	0.9	2.0
Others	5	0.2	0.5

* Data was processed using the multiple response technique
Source: Author calculations

There is a correlation between the lack of a certain approach against overdue payments and the legal-organizational form of enterprises. The results of the Chi-square test are presented in Table 5.

Table 5

Dependency between the lack of a precisely defined approach against trade receivables overdue and the form of company registration

Sig.	0.000
Cramer coefficient	0.176

Source: Author calculations

However, the results have to be accepted with some reservations as not all the requirements of the method have been met.

The different legal organizational forms of the business are related to differences in the organization of the management, the responsibilities and the risk that are assumed, the taxation, the possibilities for attracting capital, etc.

Through the Chi-square test, the relationship between the main activity of the firms and the lack of certain approach for protection against overdue receivables was examined. A weak, statistically significant relationship is established. The results of the Chi-square test are shown in Table 7.

Table 6

Two-dimensional distribution according to the lack of a precisely defined approach to protection against arrears and the form of registration

	They do not have a certain approach
Sole trader	33 17.2% 30.8% 3.3%
LTD	53 7.9% 49.5% 5.3%
General partnership	0 0.0% 0.0% 0.0%
Joint-stock company, Single-member joint-stock company	8 9.3% 7.5% 0.8%
Cooperative	5 22.7% 4.7% 0.5%
Others	8 33.3% 7.5% 0.8%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms.
Source: Author calculations

Table 7

Relationship between main business activities of firms and lack of a certain approach against overdue trade receivables

Sig.	0.019
Cramer coefficient	0.123

Source: Author calculations

The characteristics of the industry concerned, such as the degree of competition, the nature of customer relationships, established business practices and customs, the specifics of the production, the extent of the sector's risk, the differences in access to finance, are related to the ability of companies to implement different credit risk management actions. The distribution of sampled enterprises by main activity and the lack of certain approach against overdue trade receivables is shown in Table 8.

Table 8

Distribution of sampled enterprises by main activity and the lack of certain approach against overdue trade receivables (%)

	Percentage of companies in the sector that do not have a specific approach to protecting against arrears
Agriculture, forestry, hunting and fisheries	15.2
Industry	6.9
Construction	8.5
Trade; Vehicle repair	7.1
Hotels and restaurants	14.1
Transport, storage and messaging	13.3
Others	15.2

Source: Author calculations

Significantly lower are the percentages of firms that do not have a certain approach for protection against overdue receivables in the sectors Industry (6.9%), Trade; Repair of motor vehicles (7.1%) and Construction (8,5%). The highest is the percentage of companies showing passivity as creditors from the sector "Agriculture, Forestry, Hunting and Fisheries" (15.2%).

A likely explanation can be found in the size of companies with different core activities, which predetermines their market positions, the quality of their management and their financial capabilities. There is a statistically significant correlation between the type of core business activity and the indicators of firms size – the number of persons employed and the turnover.

Table 9

Dependence between core business activity and enterprise size indicators

	Number of employees	Turnover
Sig.	0.000	0.000
Cramer coefficient	0.255	0.244

Source: Author calculations

However, the results for the dependence between the main activity of the firms and the size of their turnover should be accepted with some reservations, as all the requirements of the Che-square method are not met.

The two-dimensional distribution of companies by their main activity and the number of employees is presented in Table 10.

Table 11 shows the two-dimensional distribution of the companies in the sample according to their main activity and the turnover.

Table 10

Distribution of companies by main activity and number of employees

	1 to 9 employees	from 10 to 49 employees	from 50 to 249 employees	250 and more employees
Agriculture, forestry, hunting and fisheries	16 34.8% 4.0% 1.6%	14 30.4% 6.3% 1.4%	14 30.4% 5.2% 1.4%	2 4.3% 2.0% 0.2%
Industry	7 6.9% 1.7% 0.7%	17 16.8% 7.7% 1.7%	39 38.6% 14.4% 3.9%	38 37.6% 37.3% 3.8%
Construction	8 13.6% 2.0% 0.8%	9 15.3% 4.1% 0.9%	30 50.8% 11.1% 3.0%	12 20.3% 11.8% 1.2%
Trade; Vehicle repair	191 50.3% 47.2% 19.1%	81 21.3% 36.5% 8.1%	88 23.2% 32.5% 8.8%	20 5.3% 19.6% 2.0%
Hotels and restaurants	24 30.8% 5.9% 2.4%	22 28.2% 9.9% 2.2%	29 37.2% 10.7% 2.9%	3 3.8% 2.9% 0.3%
Transport, storage and messaging	16 26.7% 4.0% 1.6%	18 30.0% 8.1% 1.8%	18 30.0% 6.6% 1.8%	8 13.3% 7.8% 0.8%
Others	143 51.8% 35.3% 14.3%	61 22.1% 27.5% 6.1%	53 19.2% 19.6% 5.3%	19 6.9% 18.6% 1.9%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) Percentage by line; 3) percentage per column; 4) Percentage of all businesses
Source: Author calculations

For the sector "Trade; Vehicle repair" predominate micro and small businesses. They are characterized by lower turnover and a much higher number of transactions and customers, as well as a lower value of receivables from individual debtors. This reduces their dependence on clients by enabling them to apply various protection measures against arrears. At the same time, the larger number of customers is conducive to the diversification and reduction of credit risk. In addition, companies in the trade sector have the ability to hedge risk more easily by matching trade receivables and payables, although they are reluctant to admit that in the event of customer arrears, they may in turn delay payments to suppliers.

Table 11

Distribution of companies by main activity and turnover in BGN

	Up to BGN 100 000	From BGN 100 001 to 500 000	From BGN 500 001 to 1 000 000	From BGN 1 000 001 to 5 000 000	Over BGN 5 000 000
Agriculture, forestry, hunting and fisheries	6 20.7% 2.0% 0.9%	6 20.7% 4.2% 0.9%	7 24.1% 9.7% 1.0%	8 27.6% 8.7% 1.1%	2 6.9% 2.2% 0.3%
Industry	4 6.1% 1.3% 0.6%	8 12.1% 5.6% 1.1%	7 10.6% 9.7% 1.0%	18 27.3% 19.6% 2.6%	29 43.9% 31.5% 4.2%
Construction	6 16.2% 2.0% 0.9%	4 10.8% 2.8% 0.6%	6 16.2% 8.3% 0.9%	11 29.7% 12.0% 1.6%	10 27.0% 10.9% 1.4%
Trade; Vehicle repair	139 49.3% 46.8% 20.0%	61 21.6% 42.7% 8.8%	25 8.9% 34.7% 3.6%	26 9.2% 28.3% 3.7%	31 11.0% 33.7% 4.5%
Hotels and restaurants	22 43.1% 7.4% 3.2%	11 21.6% 7.7% 1.6%	9 17.6% 12.5% 1.3%	6 11.8% 6.5% 0.9%	3 5.9% 3.3% 0.4%
Transport, storage and messaging	6 18.8% 2.0% 0.9%	11 34.4% 7.7% 1.6%	1 3.1% 1.4% 0.1%	7 21.9% 7.6% 1.0%	7 21.9% 7.6% 1.0%
Others	114 57.3% 38.4% 16.4%	42 21.1% 29.4% 6.0%	17 8.5% 23.6% 2.4%	16 8.0% 17.4% 2.3%	10 5.0% 10.9% 1.4%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

The χ-square analysis demonstrates a statistically significant correlation between the size of the firms according to the number of employees and the lack of a certain approach to guard against the risk of delaying the collection of receivables.

The distribution of enterprises, according to the lack of a precisely defined approach to protection against arrears and their size by the "number of employees" criterion, is presented in Table 13.

Table 12

Dependence between the lack of a precisely defined approach to guard against the risk of delays in the collection of receivables and the size of firms according to the "number of employees" criterion

	They do not have a precisely defined approach
Sig.	0.000
Cramer coefficient	0.144

Source: Author calculations

Table 13

Distribution of companies according to the lack of a precisely defined approach for protection against overdue receivables and their size by the criterion "number of persons employed"

1 to 9 employees	65 16.0% 60.7% 6.5%
from 10 to 49 employees	15 6.8% 14.0% 1.5%
from 50 to 249 employees	21 7.7% 19.6% 2.1%
250 and more employees	6 5.9% 5.6% 0.6%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

With the increase in the size of companies, the share of those, who do not have a certain approach to reducing the risk of overdue receivables, decreases. Larger companies, ceteris paribus, have higher management quality and stronger market positions and are not worried about losing customers when taking action against arrears.

The dependence between the companies' passivity as creditors and their size is also confirmed by the correlation between the lack of a precisely defined approach to reducing overdue receivables and turnover.

Table 14

Dependence between the lack of a precisely defined approach to reduce the risk of overdue receivables and the turnover of companies

Sig.	0.000
Cramer coefficient	0.187

Source: Author calculations

The two-dimensional distribution of the companies according to the lack of a precisely defined approach to reducing the risk of overdue receivables and their turnover is shown in Table 15.

Table 15

Distribution of firms according to the lack of a precisely defined approach to reduce the risk of overdue receivables and their turnover

Up to BGN 100 000	54 18.2% 68.4% 7.8%
From BGN 100 001 to 500 000	9 6.3% 11.4% 1.3%
From BGN 500 001 to 1 000 000	4 5.6% 5.1% 0.6%
From BGN 1 000 001 to 5 000 000	7 7.6% 8.9% 1.0%
Over BGN 5 000 000	5 5.4% 6.3% 0.7%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

Again it can be seen that with the increase of the size of the companies, the share of those who exhibit creditor passivity decreases. Apart from the size of the companies, the turnover value is also an indicator of their financial capabilities and market positions. The importance of companies' financial standing for their behaviour like creditors is also confirmed by the relationship with value-added growth.

Table 16

Dependence between the lack of a precisely defined approach to protection against arrears of trade receivables and the increase in value-added in firms

Sig.	0.000
Cramer coefficient	0.152

Source: Author calculations

Table 17 shows the two-dimensional distribution of the companies in the sample according to the lack of a precisely defined approach to protection against overdue receivables and the increase in value-added in firms.

Table 17

Two-dimensional distribution according to the lack of a precisely defined approach to protection against overdue receivables and an increase in value-added in firms

Degree of importance	Increasing value-added
great importance	8 3.6% 7.5% 0.8%
some importance	29 9.6% 27.1% 2.9%
does not matter	18 11.2% 16.8% 1.8%
It does not apply to the company	52 16.5% 48.6% 5.2%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

Companies with good financial management, where value-added growth has a large or at least somewhat significant importance on their development, are less likely to show creditor passivity.

The dependencies between companies' passivity as creditors on the one hand and their turnover and value-added, on the other hand, can be interpreted in the opposite direction. The active management of the risk of overdue receivables leads to a reduction in the problem of late payment by customers. This leads to an acceleration of capital conversion, more efficient use of resources, increased production and sales, and value-added in the company.

The results of the survey also show that companies that have successfully invested in expanding their production capacity are less likely to exhibit creditor passivity (Table 18).

Table 18

Dependence between the lack of a precisely defined approach for protection against overdue receivables and expansion of the production capacity of the companies

Sig.	0.004
Cramer coefficient	0.116

Source: Author calculations

Two-dimensional distribution according to the lack of a precisely defined approach to protection against overdue receivables and the expansion of production capacity is shown in Table 19.

Table 19

Two-dimensional distribution according to the lack of a precisely defined approach to protection against overdue receivables and the expansion of production capacity

Degree of importance	Expansion of production capacity
great importance	16 5.5% 15.0% 1.6%
some importance	30 12.0% 28.0% 3.0%
does not matter	13 10.2% 12.1% 1.3%
It does not apply to the company	48 14.5% 44.9% 4.8%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

Expansion of production capacity, ceteris paribus, means higher fixed costs and business risk, which also require more active risk management of overdue receivables.

Expansion of production capacity is also an indication that companies have no difficulty in realizing their production, have stronger market positions and may impose different measures to prevent overdue receivables without fear of losing customers.

The market positions of the companies are predominantly determined by their competitiveness. Table 20 presents dependencies between indicators on the competitiveness of firms and the lack of a certain approach for protection against trade credit arrears.

Table 20

Dependence between the lack of a precisely defined approach to protection against overdue receivables and actions Indicators on the competitiveness of firms

	Sig.	Cramer coefficient
Improving the marketing of products and services	0.000	0.164
Introducing quality standards	0.001	0.127

Source: Author calculations

The two-dimensional distribution of the companies in the sample, according to the lack of a precisely defined approach to protection against past due receivables and actions, which are indicators for their competitiveness, is presented in Table 21.

Table 21

Two-dimensional distribution according to the lack of a precisely defined approach to protection against overdue receivables and actions Indicators for the competitiveness of the companies

Degree of importance	Improving the marketing of products and services	Introducing quality standards
great importance	29 6.9% 27.1% 2.9%	23 7.5% 21.5% 2.3%
some importance	36 10.6% 33.6% 3.6%	22 8.6% 20.6% 2.2%
does not matter	9 9.7% 8.4% 0.9%	12 8.8% 11.2% 1.2%
It does not apply to the company	33 22.1% 30.8% 3.3%	50 16.7% 46.7% 5.0%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms

Source: Author calculations

The data in the table shows that companies in which improving product and service marketing and introduction of quality standards are successful and are of great importance for their development are more active in managing the risk of overdue receivables from customers. The higher quality of the products offered and the improvement of their marketing increase demand and enable companies to negotiate more advantageous and safer payment terms in commercial transactions.

The percentage of firms lacking a specific approach against overdue receivables is greater when actions like improving product and service marketing and implementing quality standards are not relevant to their development or do not concern the company at all.

The market power of companies also depends on how wide the market is. A wider market, ceteris paribus, also means a larger number of customers, enabling companies to apply various measures to reduce the risk of overdue payments without fear of adverse consequences such as loss of customers and market share.

The two-dimensional distribution of the surveyed companies, according to the lack of a precisely defined approach to protection against overdue receivables and indicators for expanding their markets, is presented in Table 23.

Table 22

Dependence between the lack of a precisely defined approach to protection against overdue receivables and actions Indicators for expanding markets

	Sig.	Cramer coefficient
Penetration of new markets in the country	0,001	0,127
Penetration of new markets in Europe	0,019	0,100
Penetration of new markets outside Europe	0,003	0,119
Increase market share	0,000	0,139

Source: Author calculations

Table 23

Two-dimensional distribution according to lack of a precisely defined approach to protection against overdue receivables and indicators for expanding markets

Degree of importance	Penetration of new markets in the country	Penetration of new markets in Europe	Penetration of new markets outside Europe	Increase market share
great importance	23 6.1% 21.5% 2.3%	8 4.4% 7.5% 0.8%	3 2.5% 2.8% 0.3%	19 6.0% 17.8% 1.9%
some importance	27 11.3% 25.2% 2.7%	13 10.6% 12.1% 1.3%	6 6.0% 5.6% 0.6%	36 9.7% 33.6% 3.6%
does not matter	23 13.8% 21.5% 2.3%	25 11.1% 23.4% 2.5%	27 11.2% 25.2% 2.7%	20 14.8% 18.7% 2.0%
It does not apply to the company	34 15.8% 31.8% 3.4%	61 13.0% 57.0% 6.1%	71 13.1% 66.4% 7.1%	32 17.8% 29.9% 3.2%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms

Source: Author calculations

In general, the penetration of new markets is accompanied by a higher risk in credit sales due to the lack of sufficient information for new customers. This risk is even greater when it comes to foreign markets due to the specific risks accompanying foreign trade. The ability of companies to manage credit risk is related to the opportunities for their development and expansion in the markets. Creditor passivity is more typical for companies where penetration into new markets and increasing market share are irrelevant to their development or do not even concern them. Firms in which new market penetration and market share increase are successful and have great or even some importance for their development have stronger market positions and better financial capabilities to implement different credit risk management measures.

For companies' market positions, their image also matters. There is a statistically significant correlation between the lack of a precisely defined approach against overdue trade receivables and the way the company maintains its image in the public domain.

Table 24

Dependence between the lack of a precisely defined approach to protection against overdue receivables and the way the firm maintains its image in the public domain

Sig.	0.005
Cramer coefficient	0.113

Source: Author calculations

The two-dimensional distribution of the companies in the sample is presented in Table 25.

Table 25

Two-dimensional distribution according to lack of a precisely defined approach to protection against overdue receivables and the way the company maintains its image in the public domain

	They point out that they do not have a precisely defined approach	They do not point out that they do not have a precisely defined approach
They have their own PR department (public relations specialist)	7 6.5% 6.6% 0.7%	100 93.5% 11.2% 10.0%
They use PR agency services	6 11.3% 5.7% 0.6%	47 88.7% 5.3% 4.7%
They participate in specialized exhibitions, forums	6 3.8% 5.7% 0.6%	151 96.2% 16.9% 15.1%
The image of the company is not supported by a targeted policy and measures	87 12.8% 82.1% 8.7%	595 87.2% 66.6% 59.6%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations.

The percentage of companies showing creditor passivity is the largest among firms that do not maintain their image with targeted policies and measures.

The results of the survey also reveal the importance of factors that are related to the motivation of the employees for the creditor's passivity. It has been established that improving safety and health conditions at work, which ceteris paribus implies higher motivation for the work of employees (and hence for better company performance) is related to the lack of a certain approach to reduce the risk of overdue receivables.

The two-dimensional distribution of firms in the sample is presented in Table 27.

Table 26

Dependence between the lack of a precisely defined approach to protection against overdue receivables and the importance for the company's development over the last three years of improving safety and health conditions at work

Sig.	0.010
Cramer coefficient	0.107

Source: Author calculations

Table 27

Two-dimensional distribution according to the lack of a precisely defined approach for protection against overdue receivables and the importance of improving safety and health conditions at work for the development of the company over the last three years

Degree of importance	They point out that they do not have a precisely defined approach	They do not point out that they do not have a precisely defined approach
great importance	41 9.0% 38.3% 4.1%	417 91.0% 46.7% 41.7%
some importance	27 8.9% 25.2% 2.7%	277 91.1% 31.0% 27.7%
does not matter	15 14.3% 14.0% 1.5%	90 85.7% 10.1% 9.0%
It does not apply to the company	24 18.0% 22.4% 2.4%	109 82.0% 12.2% 10.9%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

Improving safety and health conditions at work is a manifestation of corporate social responsibility, which has important implications for improving the competitiveness of companies and achieving sustainable growth (Димитров, Чипев, Керемидчиев, Бакърджиева, 2014).

Table 28

Dependence between the lack of a precisely defined approach to protection against overdue receivables and the extent to which the company's internal communication system motivates employees to perform their duties

Sig.	0.000
Cramer coefficient	0.219

Source: Author calculations

There is also a correlation between the passivity of the companies as creditors and the extent to which the internal communication system in the company motivates employees to perform their duties.

The two-dimensional distribution of the companies is presented in Table 29.

Table 29

Two-dimensional distribution according to the lack of a precisely defined approach for protection against overdue receivables and the extent to which the internal communication system in the company motivates the employees to perform their duties

	They point out that they do not have a precisely defined approach	They do not point out that they do not have a precisely defined approach
Definitely yes	35 7.5% 41.2% 3.8%	431 92.5% 52.2% 47.4%
Rather yes	21 7.0% 24.7% 2.3%	280 93.0% 33.9% 30.8%
As much yes, as much no	13 13.1% 15.3% 1.4%	86 86.9% 10.4% 9.5%
Rather no	10 35.7% 11.8% 1.1%	18 64.3% 2.2% 2.0%
Definitely not	6 37.5% 7.1% 0.7%	10 62.5% 1.2% 1.1%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

The percentage of respondents that do not have a precisely defined approach against overdue receivables is higher for companies where the internal communication system does not sufficiently motivate employees to perform their duties. The importance of employees' motivation, interpersonal relationships, and existing values in firms is also revealed by the established dependence between the passivity of firms as creditors and assessment of respondents about the impact of corporate culture on firms economic performance.

The two-dimensional distribution of firms is presented in Table 31.

Table 30

Dependence between the lack of a precisely defined approach to protection against overdue receivables and the assessment of respondents about the influence of corporate culture on firms economic performance

Sig.	0.004
Cramer coefficient	0.135

Source: Author calculations

Table 31

Two-dimensional distribution according to the lack of a precisely defined approach for protection against overdue receivables and the assessment of the respondents about the influence of the corporate culture of the company on its economic performance

	They point out that they do not have a precisely defined approach	They do not point out that they do not have a precisely defined approach
Definitely yes	16 5.3% 20.3% 1.9%	286 94.7% 36.7% 33.3%
Rather yes	37 10.5% 46.8% 4.3%	315 89.5% 40.4% 36.7%
As much yes, as much no	14 9.7% 17.7% 1.6%	130 90.3% 16.7% 15.1%
Rather no	6 16.2% 7.6% 0.7%	31 83.8% 4.0% 3.6%
Definitely not	6 25.0% 7.6% 0.7%	18 75.0% 2.3% 2.1%

***** The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

The confirmation of the above statement for the importance of the motivation of the employed is also the dependence between the lack of a well-established approach to protection against overdue receivables and the introduction of new methods and business practices for the allocation of work obligations and decision-making mechanisms (system for allocation of responsibilities in the team, departmental restructuring, education/training programs, etc.).

The results of the chi-square analysis are presented in Table 32.

Table 32

Dependence between the lack of a precisely defined approach to protection against overdue receivables and whether the company has introduced new methods and business practices for the allocation of work obligations and decision-making mechanisms over the last three years (system for allocation of responsibilities in the team, departmental restructuring, education/training programs, etc.)

Sig.	0.000
Cramer coefficient	0.135

Source: Author calculations

The two-dimensional distribution of firms in the sample by both criteria is presented in Table 33.

Table 33

Two-dimensional distribution according to the lack of a precisely defined approach to protection against overdue receivables and whether new methods and business practices for the allocation of work obligations and decision-making mechanisms have been introduced in the company over the last three years (system for allocation of responsibilities in the team, departmental restructuring, education/training programs, etc.)

	They point out that they do not have a precisely defined approach
New methods and business practices for the allocation of work obligations and decision-making mechanisms have been introduced	29 6.6% 34.1% 3.6%
New methods and business practices for the allocation of work obligations and decision-making mechanisms have not been introduced	56 14.9% 65.9% 6.9%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

The percentage of companies that show creditor passivity and have introduced new methods and business practices for allocation of work obligations and new decision-making mechanisms over the past three years (6.6%) is significantly lower than the percentage of companies that also show creditor passivity, but have not introduced such new methods and business practices (14.9%). In addition, the majority of companies (65.9%) lacking a precisely defined approach to protection against overdue receivables have not introduced new methods and business practices for allocating work obligations and decision-making mechanisms.

But besides the importance of the motivation of the employees in the company, this dependence also testifies to the role of the innovation activity of the enterprise. The role of the innovation activity of the enterprise is also confirmed by other dependencies. Table 34

presents the results of the Chi-square analysis of the link between the passivity of firms as creditors and the investment over the last three years in specialized training in the field of innovation.

Table 34

Dependence between the lack of a precisely defined approach to protection against overdue receivables and investment over the last three years in specialized innovation training (internal or external staff training aimed at developing and/or implementing innovations)

Sig.	0.001
Cramer coefficient	0.106

Source: Author calculations

The two-dimensional distribution of firms in the sample by both criteria is presented in Table 35.

Table 35

Two-dimensional distribution according to the lack of a precisely defined approach against overdue receivables and investing over the last three years in specialized innovationn training (internal or external staff training aimed at developing and/or implementing innovations)

	They point out that they do not have a precisely defined approach
They have invested	12 4.9% 11.2% 1.2%
They have not invested	95 12.5% 88.8% 9.5%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

In line with the above assertions, there is also a correlation between the lack of a precisely defined approach to protection against overdue receivables and the introduction over the last three years of new methods and business practices for regulating relationships with other companies/organizations (alliances, partnerships, subcontractors, etc.).

Table 36

Dependence between the lack of a precisely defined approach to protection against overdue receivables and the introduction over the last three years of new methods and business practices for regulating relationships with other companies/organizations (alliances, partnerships, subcontractors, etc.)

Sig.	0.000
Cramer coefficient	0.135

Source: Author calculations

The two-dimensional distribution of firms in the sample by both criteria is presented in Table 37.

Table 37

Two-dimensional distribution according to the lack of a precisely defined approach to protection against overdue receivables and the introduction over the last three years of new methods and business practices for regulating the relationships with other companies/organizations (alliances, partnerships, subcontractors, etc.)

	They point out that they do not have a precisely defined approach
They have introduced	28 6.6% 33.7% 3.5%
They have not introducted	55 14.8% 66.3% 6.9%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms
Source: Author calculations

The results presented in Table 38 confirm the relationship between creditor passivity and innovation activity. Investing in research to create new products/services for the market is highly risky, accompanied by a relatively longer recovery period for invested funds, and requires a longer horizon of planning and strategic business management. All this implies sufficient financial capacity to provide the necessary funding through internal or borrowed funds and higher quality management.

Table 38

Dependence between the lack of a precisely defined approach to protection against overdue receivables and the assessment of firms to what extent business in the country is interested in investing in scientific developments in order to create new products/services for the market

Sig.	0.002
Cramer coefficient	0.137

Source: Author calculations

The two-dimensional distribution of firms in the sample by both criteria is presented in Table 39.

The percentage of companies that firmly believe that firms in the country are interested in investing in research to create new products/services and show passivity in their behaviour as creditors is negligible.

Dependencies also arise between the passivity of companies as creditors and their assessment of the conditions for the development of innovation activity in the country.

Companies that consider the conditions for innovation activity in the country as more favourable are more active in the management of credit risk.

Table 39

Two-dimensional distribution according to the lack of a precisely defined approach for protection against overdue receivables and the assessment of firms to what extent the business in the country is interested in investing in scientific developments in order to create new products/services for the market

	They point out that they do not have a precisely defined approach
Definitely yes	1 1.0% 1.1% 0.1%
Rather yes	19 7.9% 21.8% 2.2%
As much yes, as much no	22 10.2% 25.3% 2.5%
Rather no	31 14.6% 35.6% 3.5%
Definitely not	14 12.7% 16.1% 1.6%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms

Source: Author calculations

Table 40

Dependencies between the lack of a certain approach to protection against the risk of overdue receivables and the companies' assessment of the conditions for the development of innovation activity in the country

	Sig.	Cramer coefficient
Assessment of firms about the impact of economic risk on innovation activity in the country	0.000	0.184
Assessment of firms about the impact of sources of financing innovative activities on innovation in the country	0.003	0.127
Assessment of firms about the impact of consumer interest in manufactured products and services on innovation activity in the country	0.031	0.104
Assessment of firms about the impact of qualified personnel on innovation activity in the country	0.048	0.098

Source: Author calculations

Table 41

Two-dimensional distribution according to the lack of a precisely defined approach for protection against overdue receivables and the assessment of the companies for the conditions for the development of the innovation activity in the country

	Assessment of firms about the impact of economic risk on innovation activity in the country	Assessment of firms about the impact of sources of financing innovative activities on innovation in the country	Assessment of firms about the impact of consumer interest in manufactured products and services on innovation activity in the country	Assessment of firms about the impact of qualified personnel on innovation activity in the country
Helps significantly	6 7.1% 5.7% 0.6%	32 6.7% 30.2% 3.2%	39 8.2% 36.8% 3.9%	60 9.0% 56.6% 6.1%
Helps to some extent	28 21.2% 26.7% 2.8%	35 14.4% 33.0% 3.5%	36 11.3% 34.0% 3.6%	31 14.2% 29.2% 3.1%
Does not affect	22 19.3% 21.0% 2.2%	17 13.1% 16.0% 1.7%	19 14.4% 17.9% 1.9%	9 11.5% 8.5% 0.9%
It hinders to some extent	38 8.0% 36.2% 3.8%	16 14.8% 15.1% 1.6%	11 19.6% 10.4% 1.1%	6 24.0% 5.7% 0.6%
It is a major obstacle	11 5.9% 10.5% 1.1%	6 18.2% 5.7% 0.6%	1 25.0% 0.9% 0.1%	0 0.0% 0.0% 0.0%

* The numbers in each cell in the table show respectively: 1) number of companies; 2) percentage by line; 3) percentage per column; 4) Percentage of all firms

Source: Author calculations

The last two dependencies listed in the table must be assumed with some conditionality, as all the requirements of the Chi-square method are not met.

The two-dimensional distributions of the enterprises surveyed, according to the lack of a precisely defined approach for protection against overdue receivables and their assessment of the conditions for the development of innovation activity in the country, are shown in Table 41.

Conclusion

The results of the survey reveal that a significant part of the companies (little more than one-tenth of respondents) do not have a precisely defined approach to reduce the risk of overdue receivables. There is also a low spread and a relatively narrow scope of the applied measures against delayed payments by customers. This indicates weaknesses in the management of the risk associated with the collection of trade receivables within the agreed timeframe.

On the whole, it can be concluded that the share of firms lacking a precisely defined approach to reducing the risk of overdue receivables is higher in enterprises with lower turnover rates, with lower value-added, with a lower number of employees, operating in sectors with lower entry barriers, firms that have failed to expand their markets and their production capacity in recent years and are characterized by weak innovation activity.

Outlining the profile of companies displaying passivity as creditors contributes to clarifying the internal for firms determinants of their behaviour. The statistically significant links found in the survey testify to the role of the relative market power of the firms in forming their behaviour in credit risk management. The differences in the market power of firms, the fear of deterioration in customer relations, and the loss of market share in taking measures against payment arrears are among the main determinants of the creditors' passivity. The insufficient motivation of the employees, which also affects the quality of the offered production and the competitiveness of the companies, is among the factors determining the market power of the enterprises.

The reasons for creditor passivity can be sought in poor management quality, which is manifested in ignorance of the possibilities for protection against overdue receivables, underestimation of the problem of the delay in the collection of receivables and weaknesses in managing the motivation of the employees with all the resulting negative consequences for companies.

The established dependencies between the companies' passivity as creditors and their innovation activity, the peculiarities of the corporate culture, and in particular the maintenance of the image of the company in the public space, the management of the motivation of the employees through improvement of the safety and working conditions, the care of building long-term relationship with business partners through the introduction of new methods and business practices for regulating the relationships with other companies (organizations) also testify to the importance of the quality of management, and in particular the role of the existence of a comprehensive vision for the company's development.

Although the application of measures against the arrears of trade receivables creates a risks of losing market share, creditors passivity is a prerequisite for extending the problem of overdue inter-company liabilities with all the negative consequences of this, including the risk of insolvency. The most unfavourable behaviour for companies is the passivity that pushes them into a spiral of bad debts. Effective credit risk management is a prerequisite for financial stability, which in turn leads to strengthening the market power of businesses and creates the opportunity to negotiate more advantageous payment terms in commercial

transactions. Companies that are not passive creditors have better financial performance, allowing them to apply different measures against overdue receivables.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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PERFORMANCE OF SOCIAL ENTREPRENEURS AND SOCIAL ENTREPRENEURSHIP IN BULGARIA

The paper investigates how Bulgarian social economy has currently been performing. In the text, the author mainly focuses on an analysis of various financial indicators of ***Social Enterprises*** *in Bulgaria as well as on different relations between these indicators. This research explores social phenomena on the Bulgarian market related to* ***Social Entrepreneurs (SErs)*** *and* ***Social Entrepreneurship (SEp)****. The article investigates which factors are important to facilitate their relationships and provide a full profile of SErs. The research methodology is of a survey-descriptive type. A wide range of research methods are used to successfully achieve the goals and tasks of the research. Analysis of collected data was made using the Statistical Package for the Social Sciences (SPSS).*
JEL: L26; L31

Introduction

The establishment of **Social Enterprises (SEs)**, their management and marketing are key factors in achieving a better social structure of the Bulgarian economy. There are many investigations of the impact of **Social Entrepreneurship**, the competences and motivation for founding such kind of a company. This study offers an in-depth analysis of the opportunities for **Social Entrepreneurship (SEp)** and the performance of **Social Entrepreneurs** in Bulgaria under the conditions of a transition economy. Problems related to the opportunities for creating and developing **Social Enterprises (SEs)** undoubtedly pose challenges to managers and employees in the context of the current political and economic situation. The problem is scientifically relevant and in a practical – applied plan, with the lack of specific developments in the riches of **Social Entrepreneurship** management, "white fields" and gaps in the status of these organizations and their specific characteristics. By directing research efforts to explore the motivation for **Social Entrepreneurship**, it is ensured that science is enriched and that theoretical and practical contributions are made to explore and define the **Social Enterprise** phenomenon.

This article aims to study the funding opportunities for Social Entrepreneurship in Bulgaria and the level of their approbation by **Social Entrepreneurs** to establish such a company.

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The subject of the paper is to investigate some general options for creating a **Social Enterprise** in Bulgaria and to identify different working models for **Social Entrepreneurship** in Bulgaria and in the European Union (EU) to support problem-solving for the target groups of people.

A research object is the high-level management (i.e. owners, Chief executive officers (CEOs) and top management) of the enterprises. In-person verbal interviews were conducted with **45 entrepreneurs** and managers of **Social Enterprises** in Bulgaria as expert practitioners, to test the ideas, build knowledge, and gain insightful context and nuance to the ideas. **Two Focus Groups** were held in order to produce a single agreed platform for communicating in an objective way the company works. It was created a profile of the **Social Entrepreneur** as a conclusion of the in-depth interviews.

The article is structured as follows: following the introduction, in the first part, it was described an environmental analysis of Bulgarian Social Enterprises within EU. In this chapter is carefully analyzed how the various conceptualizations in this field evolved and are still developing in the Bulgarian transition economy context. This analysis paves the way for the second part, in which is highlighted the National Programs focused on the development of SEs. Followed by the third part, that includes the opportunities for funding SEs in Bulgaria. In the fourth part are presented the results of the empirical study of the design for **Social Entrepreneurship**. The research closes with conclusions and recommendations for future research in the field of SEp.

The overall results of the study, and especially the findings and recommendations, could be useful for other companies to know the problems of **Social Enterprises** and to focus on new opportunities and prospects for sustainable development. The results obtained can be used in the practice of management and control of business and public organizations, financial investments, development of marketing campaigns and social programs, making of business decisions for incomplete and inaccurate information, etc.

1. Theoretical Framework of Social Entrepreneurship

1.1. Social Nature and Dimensions of Entrepreneurship

The 'social' nature of the motivation for **Social Entrepreneurship** makes the concept clearly distinguishable from commercial entrepreneurship. The question of why social entrepreneurship comes to be, in terms of motivation, can also raise the question of 'how come' social entrepreneurship comes to be (Orhei et al., 2015). The European Commission was the first to explore a multidimensional framework for entrepreneurial competence. **Social Entrepreneurship** has been defined until now by borrowing insights from commercial, Schumpeterian entrepreneurship as well as a new way of looking at non-profit work (Peredo and McLean, 2006; Short et al., 2009).

The theme importance takes a central position in discussions, researches and organizational activities connected to the process of creating **Social Entrepreneurship**. This takes an essential role in the Bulgarian economic environment as well as the national strategies for economic growth. In recent years, the European Commission began setting a policy

framework for the **Social Economy** and **Social Entrepreneurship**, which found expression in a number of policy documents outlining the limits and opportunities for their development. In all European documents, the **Social Enterprise** is identified as a key component of civil society and the European social model (Terziev et al., 2016a,b).

The quest for a widely accepted definition of S**ocial Enterprise (SE)** has been a central issue in the last two decades. However, it only seems feasible today to identify a few criteria that were most debated (Nyssens and Defourny, 2016):

- the specific role of individual social entrepreneurs (Terziev et al., 2017 a,b; Orhei et al., 2015; Bezuhanova, 2014);
- the place of social innovation (Sinclair et al., 2018);
- the search for market income;
- the issue of governance.

The research of Orhei, Nandram and Vinke (2015) suggests that **Social Entrepreneurship** competence is comprised of a large spectrum of social and functional competences (rather than cognitive competence) and motivation to solve social problems. Much of the literature defines **Social Entrepreneurship** from the individual perspective by describing the **Social Entrepreneur** as a visionary (Dees, 1998). **Social Entrepreneurs** may act on their own focused on achieving a social mission (Guclu et al., 2002; Peredo and McLean, 2006) or be part of **Social Entrepreneurship** organizations or **Social Enterprises**. Kraus et al. (2014) define the entrepreneur as exceptionally innovative, willing to take risks and outstanding leadership qualities. **Social Entrepreneurship** may also involve creating something new that is characterized by innovation rather than simply replicating existing enterprises or practices (Austin et al., 2006).

Since definitions in different countries vary, **Social Enterprise** should be described on the basis of shared characteristics such as social objectives, reinvestment of profits, a variety of legal forms and ways of stakeholder participation. In response to the crisis and austerity of the economy, Social Entrepreneurship is a different way of economic activity, which mixes the ingenuity of business with the social mission and leads to a synergistic effect – it can self-sustain, make a profit, and at the same time, it can help to overcome social difficulties. Given the enormous potential of **Social Enterprises** to offer innovative approaches to overcome the serious societal challenges facing Bulgaria (ageing populations, growing inequality, climate change, youth unemployment) they are increasingly interested in not only government policy, but also in researches.

Based upon a literature review, can be summarized ***a basic statement/definition*** for a **SE**:

- a business focus on solving humane tasks, not simply profit;
- priorities for **Social Enterprises** are providing better access to capital and tailored finance instruments;

- creation of new jobs in areas where they could satisfy social needs, as a mean of both creating jobs for unemployed persons and curbing mainstream social spending (ageing populations, growing inequality, youth unemployment, integration and reintegration of disadvantaged people, social exclusion of various vulnerable groups, etc.);
- an organizational model that can support social innovations for a transition to more sustainable consumption and production practices;
- can provide an effective survival strategy for transition initiatives;
- organizations involved in market activities but with a primacy of the societal mission;
- provides local welfare service development and delivery.

Social Enterprises are not charitable organizations or social agencies. They are private enterprises managed and developed under the business rules with a business focus on solving humane tasks, not simply profit. They are oriented towards encouraging active civic participation and unification of efforts and expertise with wide public participation to achieve social change in a given area (Bezuhanova, 2014). The social benefits of them are measured primarily by the integration and reintegration of disadvantaged people in society and economic and financial results – a significant saving of public funds allocated for social benefits (Terziev et al., 2016a).

Orhei et al. (2015) define **SEp** in contrast to commercial entrepreneurship. Since 2006, the European Commission has also devoted much attention to the concept of entrepreneurship as a competence. The European Qualifications Framework (EQF, https://ec.europa.eu/) defines entrepreneurship as a **sense of initiative and the ability to turn ideas into action**.

Scholars (Dana and Ramadani 2016, Sinclaire et al. 2018, Kovacheva and Dimitrova 2017, etc.) of socio-ecological transition consider **Social Enterprises** not simply as a tool to alleviate social problems generated by market imperfections, but also as **an organizational model that can support social innovations for transition to more sustainable consumption and production practices**. More specifically, by accessing a series of non-market resources (such as unpaid labour, affordable small loans, lower-than-market rent for premises, various sharing arrangements for the use of resources), **Social Enterprises** can provide **an effective survival strategy for transition initiatives**, which would otherwise not be able to survive in increasingly competitive markets focused on satisfying the short term expectations of shareholders (Dedeurwaerdere et al., 2017). According to Chell (2007), **Social Enterprises** are organizations involved in market activities but **with a primacy of the societal mission**, which can be related to social, cultural and/or environmental purposes.

Sinclaire et al. (2018) suggest that **SEs** and social innovations are not themselves instigators nor catalysts for systemic change, but that their impact is constrained by structural conditions and institutional factors beyond their control. They focus on the relational politics of **Social Enterprise** and social innovation in **local welfare service development and delivery**. Social innovation raises particularly interesting questions about effective local governance systems and urban politics; notably, the increasing prominence of hybrid

organizations and the politics of intersectoral partnerships among institutions with different resources and competing authority claims.

1.2. Environmental Analysis of Bulgarian Social Enterprises within the European Union (EU)

In summary, during the last decade, the Bulgarian economy has achieved macroeconomic stability and growth. The transformation of Bulgarian political culture in the process of transition to democracy provides analysis between the dominant political culture (Pastarmadzhieva, 2015) and the efforts for entrepreneurship development. Various measures were implemented in order to improve the environment for doing business, especially for SMEs (Davidkov and Yordanova, 2015). Entrepreneurial orientation may be seen as an important organizational resource for international involvement. The governmental restrictions of economic freedom appear to impact entrepreneurial activity differently depending on the particular freedom restricted by the government and the entrepreneur's motive for engaging in entrepreneurial action (McMullen, Bagby and Palich, 2008).

The maturing of markets and market relations lead to intense competition and increasing consumer requirements, turning the quality into a factor for the success and survival of organizations. Thus, it is a central place in discussions, researches and organizational activities in the field of manufacturing and services, because the opportunities for **Social Entrepreneurship** and the development of such organizations are preconditions for the growth of quality and competitiveness of the Bulgarian economy as a whole.

The dynamically changing economic and political environment requires more flexibility in the companies and willingness to change in accordance with the new conditions. Organizations face the challenge to "fight for survival" in a rapidly changing and uncertain environment. This process is enhanced in terms of the continuing economic crisis.

Optimizing the performance and opportunities for flexible financing of SMEs is extremely important to increase the competitiveness of the organizations and hence to the Bulgarian economy as a whole (Angelova and Pastarmadzhieva, 2017). According to Bulgarian National Strategy for Small and Medium-sized Enterprises 2014-2020 the main focus is entrepreneurship and founding SMEs, which are the basis (the spine) of the national economy. Most enterprises that are socially orientated are SMEs.

According to Commission Recommendation 2003/361/EC, as published in the Official Journal of the European Union (L 124, p. 36 of 20 May 2003) “The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million” (European Commission, 2015). This definition was transposed in Bulgarian legislation and in particular in article 3 of Bulgarian Law on Small and Medium-Sized Enterprises.

At European level, SMEs are seen as drivers of growth, employment and innovation. According to the European Investment Bank, they represent over 90% of businesses in the EU and also two-thirds of the active working population is employed in them.

SMEs play an essential role in economic processes, and therefore the optimization of their operation is extremely important to enhance their competitiveness and sustainable development. They are not only the backbone, but they are nearly the entire economy of Bulgaria, as according to NSI data for 2017, they represent 98.4% of all business organizations (NSI). SMEs are a major source of added value and the largest employer in the country, but at the same time are experiencing serious difficulties in many areas. Undoubtedly, management must focus on the opportunities for social initiatives, and access to various financial instruments that could help to overcome the main difficulties and discover horizon for innovation and investment.

According to a recent analysis in the opinion to the companies worldwide, there are five main obstacles of their growth: **access to finance**, electricity, political instability, competition and tax rate (Wang, 2016; Pastarmadzhieva, 2015). The relationship between political instability and economic growth has been examined in numerous scientific studies over a long period of time. This correlation is bilateral. If an economy works poorly, this may cause "government collapse and political unrest". And when the political environment is unstable, usually this leads to a decrease of "investments and the speed of economic development" (Alesina et al., 1996).

Nevertheless, it may be caused by various factors, but Alesina et al. (1996) measure political instability as "propensity of government changes". The latter is a major factor of political instability in Bulgaria in recent years. In the period January 2013 – March 2017 there have been six governments, three of which were caretaker governments. The frequent change of governments has affected the economic environment and caused difficulties in financing and development of the SME's **especially society orientated that rely mostly on EU and Government funds**.

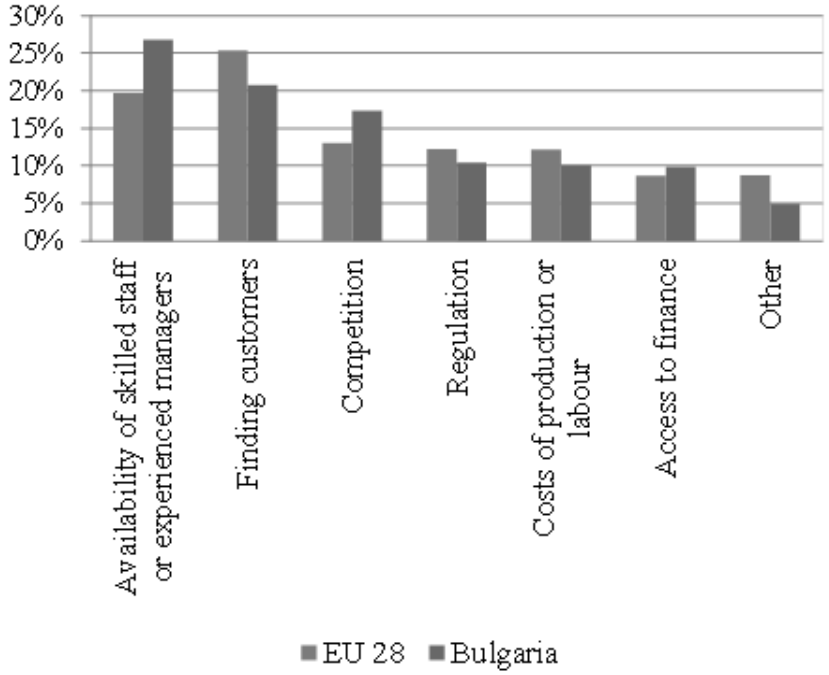
According to an analysis commissioned by the Bulgarian Small and Medium Enterprises Promotion Agency (BSMEPA), **access to finance** is a major problem for SMEs in Bulgaria. Most commonly utilized sources of funding are banking instruments, government funding and international programs to support SMEs and the use of resources of the owner's family and his/her relatives (Vladimirov et al., 2013). Access to finance is a major issue at European level as well. Empirical data from Survey on the Access to Finance of Enterprises shows that in 2016 "access to finance" is a challenge for 8,7% of SMEs at European level and for 9,8% companies in Bulgaria (Fig. 1).

The results on Fig. 2 indicate that there is a decrease in the significance of this problem in the period 2013-2015, but in 2016 there is a slight increase.

The European Union provides many opportunities for grants, loans and guarantees available for small and medium enterprises. The financing options often are not direct funding. Usually, various national and sub-national institutions are intermediaries in this process.

Figure 1

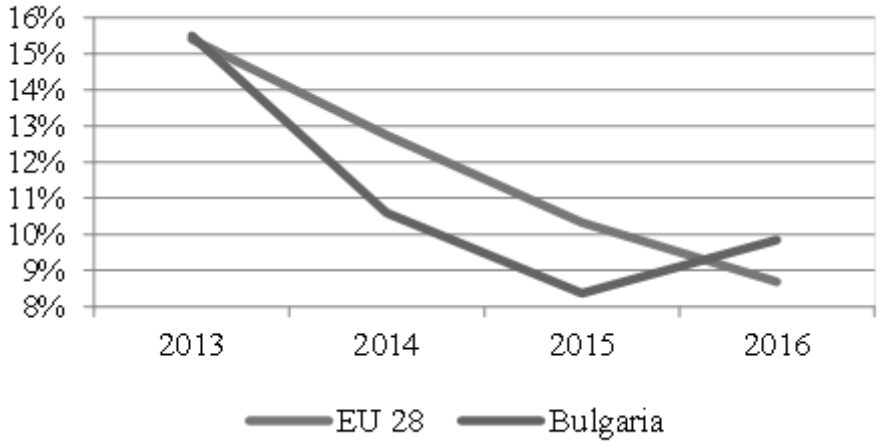
Most important problems for the firms, 2016



Source: http://ec.europa.eu/growth/access-to-finance/data-surveys

Figure 2

Dynamics in "access to finance" as a problem to the firms



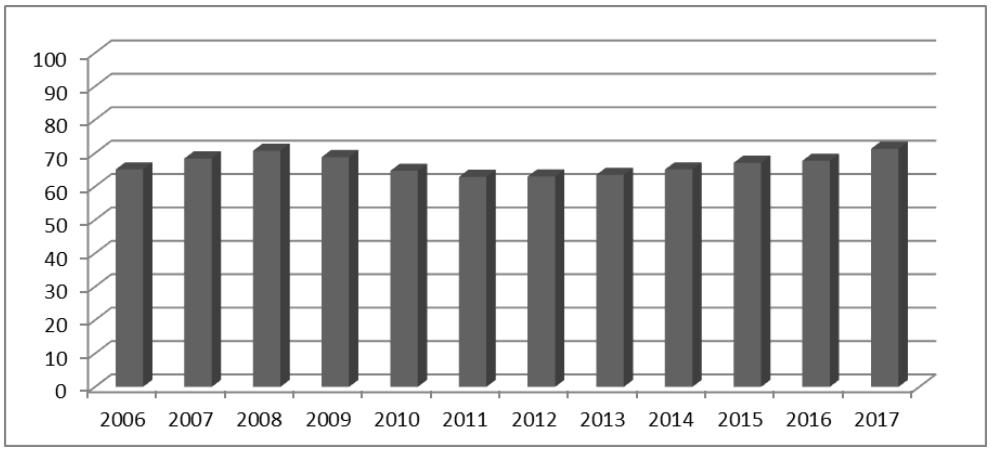
Source: http://ec.europa.eu/growth/access-to-finance/data-surveys

According to many researches and evaluations of the Bulgarian economic development, it may be observed a positive tendency after the participation of the country in EU. For 2017 Bulgaria takes 5th place in economic development from the EU countries, and that is a positive result for the country. The unemployment rate is about 6% for 2017. The country follows a common vision for transforming the economy, bench-marking models, cohesion policies, good European practices and models, and thus contributes to the introduction of social policies and the development of **Social Entrepreneurship**.

The highest unemployment registered in Bulgaria for the period 2006-2017 is in 2013 – 13% (439 800 unemployed people), then the trends are to reduce the number of unemployed people, decreasing to 6.7% (214 900 persons) in 2016. It is worrying that approximately one-third of them are unemployed for a period of time for more than two years. An increasing number of young people cannot find a job or do not look for one, as a major problem can be the lack of commitment between the business sector and the education system. The fact is that the business sector prefers to hire staffs who have already acquired the required internship, which further demotivates young people.

Figure 3

Employment rate of age 20-64 in per cent; Bulgaria 2006-2017



Source: NSI

According to EUROSTAT (Harmonized unemployment rate for EU and Bulgaria, June 2017 – May 2018), the coefficient of unemployment in the years before the World Economic Crisis decreases reaching the lowest value of 5% in 2008, as after this there is a sharp increase in this indicator, reaching 13% in the 2013 year. Also, it should be noted that after this sharp increase is observed a decrease in this indicator, reaching 6.7% by the end of 2016. Furthermore, the high levels of unemployment are associated with deterioration of the living standard and the high degree of migration.

The decade in Bulgaria after its entry into the European Union in 2007 can be described in a few words: **more stability, better financial results and more optimism**. Gross domestic product is increasing over the past ten years, with real growth of 3.4% in 2016. There is

also a wage growth. In Bulgaria, the minimum wage increases from 180 BGN in 2008 to 560 BGN in 2019.

Conclusion of Part One

This section outlined the theoretical framework of **Social Entrepreneurship**. Based upon the literature review, it's summarized a basic statement/definition for a SE. The research presents an environmental analysis of Bulgarian **Social Enterprises** within the EU.

In these terms, development of the measures that allow bench-marking of social entrepreneurial culture supports efforts made by local, national and international authorities. This is a good base for investigating the entrepreneurial culture for **Social Entrepreneurship and the motives of the founders.**

In summary, the main tools that need to be enforced and developed to stimulate entrepreneurial activity are related to training/learning, the three-way science-business-education relationship, building and strengthening entrepreneurial culture, and access to finance. Validation, optimization, and harmonization between these components is a prerequisite for the development of **Social Entrepreneurship**.

2. National Programs Focused on Development of SEs

The statistical survey of **Social Enterprises** in Bulgaria started in 2012 and has an annual periodicity. In 2013, NSI included guiding criteria for respondents with regard to whether they identify themselves as **Social Enterprises** or not. As main features of **Social Enterprise** are included:

• Achieving social purpose;

• Predominantly reinvestment of profits back into the business than distribution among individual partners, shareholders, founders/members.

In terms of the types of legal and organizational forms through which one can develop **Social Enterprise**, inconsistencies and discrepancies are observed between different strategic documents and programs. There is no unified framework and general binding characteristics of **Social Enterprises**.

There are many documents defining the key role of **Social Entrepreneurship** in combating poverty and social exclusion of various vulnerable groups. Reforms are needed in implementing innovative measures aimed to develop new approaches and models to tackle poverty and social exclusion. One of the biggest constraints is achieving long-term sustainability, as social goals and tasks make the business part more difficult. That is why most programs targeted to support **Social Entrepreneurship** are small grants to start a small business, investments in the development of business skills, communications, etc. The social economy and entrepreneurship are among the key instruments through which to complement ongoing government policy targeted at social support and smart and sustainable growth. According to the statement of M. Granovetter (1985), the

embeddedness of opportunities in the formal institutional environment may be illustrated with reference to the initial changes in the institutional framework that fostered **Social Entrepreneurship**, when legal and administrative reforms made it legally possible for privately owned businesses to compete with state-owned enterprises.

It is important to mention the good practices and successful functioning **Social Enterprises** in Bulgaria, i.e. "Sdrujenie Znanie Lovech", Karin dom, Morski club "Priyateli na moreto", Fondacia "Svetut na Mariq", Fondacia Konkordia Bulgaria, etc. They are an example of realization and motivation for the implementation of social ideas and successful entrepreneurship (UNICEF, 2016).

The summary data for 2012 of the National Statistical Institute (NSI) shows that 4872 enterprises have identified themselves as "social". 2717 of them are registered as commercial companies and cooperatives. **Social Enterprises** such as companies or cooperatives have made a total of 3 billion and a half BGN (1.00 € = 1.955 BGN) of its revenue from its activities and have made almost as much operating expenses. The economic spheres in which there are the most **Social Enterprises** – commercial companies and cooperatives are trade and repair of motor vehicles and motorcycles (964 enterprises) and the processing industry (395 enterprises).

In 2013 the number of self-identified as **Social Enterprises** is lower – 3612. 2046 of them are registered as trading companies and cooperatives. The spheres of economic activity for registered companies or cooperatives remain unchanged. 1381 of them are profitable.

By August 2015 in the Registry of specialized enterprises and cooperatives of people with disabilities of the Agency for people with disabilities have 281 registered specialized enterprises and cooperatives of people with disabilities. They provide employment for 3364 people with disabilities.

In comparison with the summarized number of non-financial enterprises for the country (337 488 enterprises in 2016), the number of non-profit enterprises, which identified themselves as social, for 2016 is 0,61% of all non-financial enterprises. This proportion is also true for the income of **Social Enterprises** compared to all enterprises – less than 1 %.

In line with the research of Bencheva et al. (2016), Bulgaria has not introduced a legal definition of **Social Enterprise**, nor has a clear and explicitly defined regulatory framework. Strategic documents in the field distinguish between "social economy enterprises" and "social enterprises"; the intention is the first group to cover a wider range of persons, some of which are **Social Enterprises**. Moreover, from 2012 onwards statistical information has been collected for existing SEs in Bulgaria.

The most widespread field of activity of **Social Enterprises** in Bulgaria are services, most often social and educational. Production and trade are poorly developed. Manufacturing companies make clothing, food (bread, honey), souvenirs, postcards, carpentry, applied arts and others. The typology of SEs is explained in a report "Social enterprises in Bulgaria",

made by a team of scientists under the financial help of OP Human Resources Development.[2]

Table 1

Trend and Sector Fields of Social Enterprises

Year	Total number of SEs	Commercial companies and cooperatives
2012	4872	2717
2013	3612	2046
2016	2058=0.61% of all non-financial enterprises	

Source: NSI, 2018.

The institutional environment influences the extent to which **Social Entrepreneurship** develops. *The National Social Economy Concept* represents the Government's framework for the development of the social economy in Bulgaria. *The National Development Program Bulgaria 2020* identifies a specific area of impact and measures related to the social economy and entrepreneurship, in particular in Priority 2: Reducing poverty and promoting social inclusion.

The Action Plans for the Social Economy 2014-2015 and 2016-2017 which supported the implementation of the National Social Economy Concept layout a series of priority actions aimed at facilitating the development of the social economy (including social enterprises) in Bulgaria (see Decision No 146, Action Plan for the Social Economy 2016-2017). Actions under this programme scheme include information campaigns and events for regional and local authorities, businesses and other stakeholders in order to raise their awareness about **the opportunities and conditions for the development of Social Entrepreneurship in Bulgaria**. The basic aims include actions to improve access to public procurement opportunities for **Social Enterprises**; the action foreseen in this regard is a proposal for amending the Public Procurement Act so that it provides a level playing field to SEs when applying for public procurement opportunities. The Action Plans dedicate specific resources to each action envisaged by it. The sum allocated to the actions is more than half a million BGN (ca. €317,000) that were foreseen for the development of the social economy in Bulgaria for the period 2014-2017.

The Action Plan *"Entrepreneurship 2020 – Bulgaria"* was adopted by the Council of Ministers with Protocol № 46 of November 11, 2015, which consists of 31 specific measures in accordance with the adopted by the Commission – Action Plan "*Entrepreneurship 2020 – Revival of the entrepreneurial spirit in Europe*" (COM/2012/0795 final). The Economic and Social Council of the Republic of Bulgaria (ESC) believes that **Social Enterprises in Bulgaria are still an untapped business model**. Current **Social Enterprises** are mainly non-governmental organizations by applying the relevant legislation creating SEs whose business is focused on the realization of the social purpose and mission of the organization.

[2] https://socialenterprise.bg/docs/conference_1/, available in Bulgarian [accessed in November, 9, 2019]

There are different National and European programs to support the establishment of a SE. In the *National strategy for the youth 2010-2020* is noted that Bulgaria should improve economic activity and career development of young people, and promote SEp among them. For this purpose, it is necessary to promote public-private partnerships and **Social Entrepreneurship** in services for the development of young people. For the realization and active participation of young people in social and economic life, an appropriate and favourable environment is required, as well as conditions for **school and university education in the field of Social Entrepreneurship**.

The priority of the *National strategy for reducing poverty and promoting social inclusion in 2020* is to provide employment opportunities and increase income through active involvement of citizens in the labour market. Among the specific measures is promoting entrepreneurship, including SEp.

Providing support for SEs through *European structural and investment funds* is fully in line with the Initiative for Social Business, and also with the announced Social Investment Package.

The long-term strategy for employment of people with disabilities 2011-2020 aims to provide opportunities for people with disabilities of working age to effectively exercise their right of free choice of employment realization and to improve their quality of life for a free and full involvement in public life.

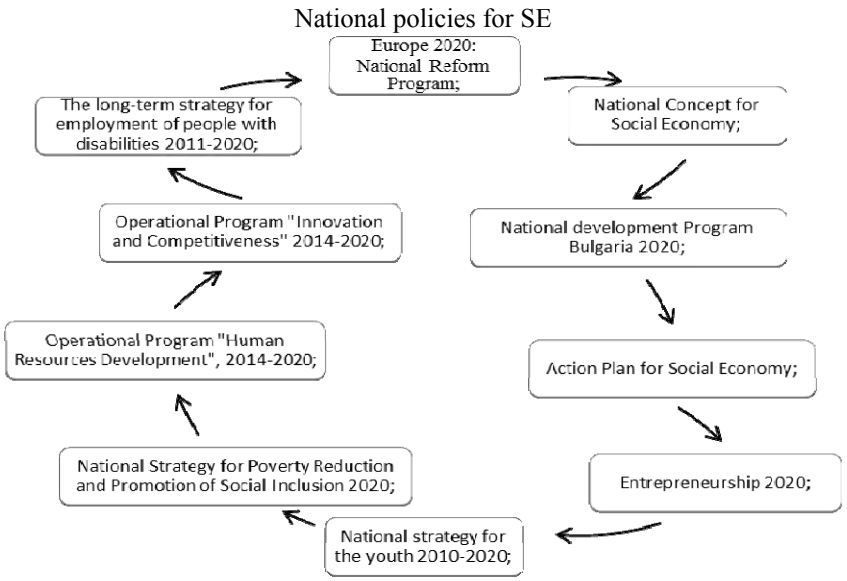
Within the *Operational Program „Human Resources Development" (OP „HRD") 2014-2020*, Area of Intervention 5.1 "Support of social economy" provides support to existing speciality businesses, cooperatives of people with disabilities and SEs. It also supports the creation of new forms of SEs, including sheltered workshops, creating conditions for strengthening community and voluntary initiatives contributing to raising the level of social capital.

Terziev et al. (2016 a) present specific opportunities for project financing of SEs that will provide investment priorities №1: "Socio-economic integration of marginalized communities such as the Roma" and №4: "Promoting social entrepreneurship and professional integration in social enterprises and promoting social solidarity economy in order to facilitate access to employment", thematic objective 9: "Promoting social inclusion, fighting poverty and all forms of discrimination".

Conclusion

In summation, in the second part of the research is made a statistical survey of **Social Enterprises** in Bulgaria from 2012 till 2016. Table 1 illustrates the trend and sector fields of social enterprises. It's made an in-depth research of the National Programs Focused on Development of SEs. This section outlined the National policies that are focused on the encouragement of **Social Entrepreneurship.** In summary, they are presented in the next figure. These policies are systematized in a list only with the purpose of a more organized approach and focused on the relation between them.

Figure 4



Source: own illustration

3. Opportunities for Funding SEs in Bulgaria

The available funding mechanisms for the SE, along with the tax preferences, are:

- Bank loans – extremely difficult, with no special relief for certain categories of SEs;
- Risk equity financing – available only to traders, primarily small and medium-sized enterprises;
- Grant funding for SE development – similar funding was provided under OP HRD 2014-2020, and in addition in the second programming period, funds are also provided under the Operational Program "Innovation and Competitiveness";
- Collections of fees for paid services – SEs can generally independently pricing. However, given the specification of the vulnerable groups, they work for, their ability to self-sustain themselves solely from business income may be limited.
- Business Angels – another opportunity to raise financial capital provides the so-called **Business Angels**. These are wealthy individual investors who invest at their own expense and risk capital to start and develop a particular business, against it shareholding (Yosifov, T., 2016). This alternative form of financing is relatively new to the country and can be appreciated as a good opportunity to Bulgarian SEs. A limitation can be indicated that they are directed toward high-tech productions.

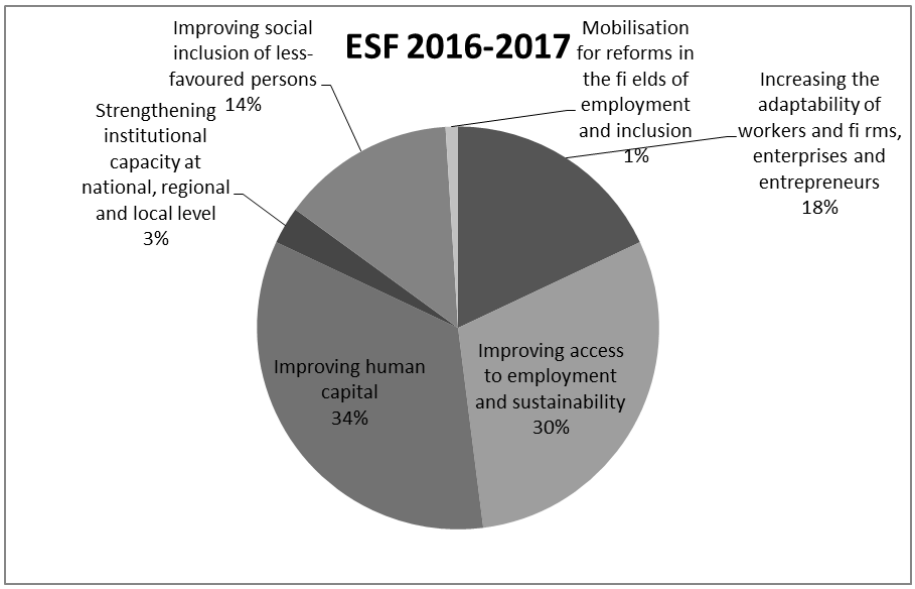
European Social Fund (ESF)

To achieve its objectives, the European Social Fund funds projects and programs in six specific fields relevant to creating jobs and helping workers to fill them. For example, a project under 'improving social inclusion of less favoured persons' might directly address the training needs of female immigrant workers, while another under 'increasing the adaptability of workers and firms, enterprises and entrepreneurs' might encourage job sharing in companies. The share of funding indicated for the different fields can vary between regions and countries depending on priorities, although Convergence regions will usually place emphasis on 'improving human capital'.

The allocated ESF budget (EU amount 2014-2020) for Bulgaria is 1466.4 million euro (Operational Programmes/AIR 2016 (updated until 6-9-2017), p.17) and total ESF budget EU+ national (ESF+ ESF-YEI +YEI)[3] is 1722.9 million euro. ESF funding targets people in society who are more vulnerable to unemployment and social exclusion. For example, older workers whose long experience is underestimated, the young who have yet to acquire experience, and mothers who want to return to the labour market yet find their skills are out of date.

Figure 5

European Social Fund 2016-2017



Source: Fondazione G. Brodolini (2018) Synthesis report of ESF 2017 annual implementation reports

A better impression of the targeting of ESF funding is given by comparing funding per capita in the Member States. In this way, the 'size effect', whereby larger countries get

[3] AIR - Annual Implementation Report; YEI - Youth Employment Initiative

more funding, is removed and more useful comparisons can be made. The newer Member States receive proportionally more ESF funding, which is in line with the 'catching-up' nature of their economies and the need to reorient their labour markets to the challenges of the global economy. It is here that the 'cohesive' nature of the ESF is best seen: **putting funding into the countries and regions where it is most needed and ensuring the whole of the EU moves forward together**. In this sense, the Bulgarian social environment benefits a lot from this funding policy, and it's necessary the social agencies and other government institutions to create opportunities for better performance of the SEs.

European Investment Fund (EIF)

The European Investment Fund signed a guarantee agreement in June 2018 for €50 million[4] with seven member banks of the Erste Group. It will support **Social Entrepreneurship** by providing financing to over 500 **Social Enterprises** in seven countries during the next five years (2018-2023), in the framework of the EU Programme for Employment and Social Innovation (EaSI).

Support provided by **the European Fund for Strategic Investments** (EFSI) made the new financing agreement possible. It is called the **Social Entrepreneurship** guarantee agreement, and it will finance SEs in Austria, Croatia, the Czech Republic, Hungary, Romania, Slovakia and Serbia. The finances will be provided under the EU Programme for Employment and Social Innovation (EaSI). The Erste Group plans to offer financing to socially-oriented organizations, groups in education, health-care and social services. Moreover, the financing will target projects to encourage the employment of disadvantaged, marginalized, or vulnerable groups. Unfortunately, Bulgaria is not a part of this agreement that is a good example to force efforts according to the **Social Entrepreneurship** motivation.

Bulgaria is investing ESF funds in programs to develop high-quality skills in its workforce while ensuring disadvantaged people get the same opportunities as others.

Across Europe and in Bulgaria, the ESF is supporting the labour market, helping people get better jobs and ensuring fairer living standards and more employment opportunities for all EU citizens. It is doing this by investing in Europe's **human capital** – its workers, its young people, disadvantaged groups and all those seeking a job. Tens of thousands of ESF projects are active in Europe's cities, towns, rural communities and neighbourhoods. They are opening doors to better skills, work, qualifications and a more inclusive society for all Europeans.

Education and science are a major priority for ESF investments in Bulgaria in combination with funding from the **European Regional Development Fund (ERDF)**. The European funds are helping support over 1500 researchers in new centers of excellence for

[4] https://ec.europa.eu/commission/news/european-investment-fund-and-erste-group-sign-eur-50-million-deal-finance-social-enterprises-austria-croatia-czech-republic-hungary-romania-slovakia-and-serbia-2018-jun-19_en [accessed on July 19, 2018)

high-quality research and innovation in the areas defined in the Research and Innovation Strategy for Smart Specialization.

Schoolchildren and students are benefiting from **innovative teaching methods** in order to improve their skills and qualifications – thus supporting the modernization of Bulgaria's economy. The ESF is also boosting the quality of vocational and lifelong learning opportunities, for example, through improvements to teacher's skills and careers. Children at risk of social exclusion – such as those belonging to marginalized groups or having special educational needs are benefiting from dedicated funding for projects to give them the same skills and opportunities as others.

Better access **to jobs and training is** among the objectives of measures underway to help the unemployed and young job seekers. The ESF is promoting lifelong learning initiatives for workers of all ages, both to improve employability and help them adapt to changes in the labour market – over 160 000 people will have benefited by 2020. Entrepreneurship and self-employment are getting support, while investments are underway in new public employment services.

The ESF is investing in **social inclusion projects** targeting groups such as Bulgaria's youth and older people, those with disabilities and minorities such as the Roma. Suitable training and support facilities are helping them get the skills and qualifications needed to integrate better. Other measures are promoting **Social Enterprise** as a means to employment, as well as better access to health and social services for several thousand children.

The ESF is also investing in the **quality of public administration** and the transparency of the judiciary in Bulgaria. The objective is to strengthen the administrative capacity of public institutions, promote e-government, and to improve the quality of services and the business environment.

Bulgarian Center for Not-for-Profit Law (BCNL) and their "Non-Governmental Organization (NGO) Entrepreneurship program."

A successful example of programs encouraging SEs in Bulgaria is the programme for SEp of the **Bulgarian Center for Not-for-Profit Law.** The organization was founded in 2001 as a public-benefit foundation. It is a part of the network of the International Center for Not-for-Profit Law (ICNL) and of the European Center for Not-for-Profit Law (ECNL), which operates in over 100 countries worldwide with the aim to protect the right to association and develop the legal framework for civil organizations. BCNL's mission is to provide support for the drafting and implementation of legislation and policies with the aim to advance the civil society, civil participation and good governance in Bulgaria. They pursue the mission with the strong belief that the improvement of the NGO **legal framework is instrumental for the creation of an independent and prosperous civil society**.

The BCNL has been supported over 3000 organizations by providing them legal advice and training on different topics. They organize the only **summer school for NGO**s in Bulgaria – an intensive training program for enhancing the knowledge and skills of representatives

of the civil sector. Within the framework of the **Social Entrepreneurship Program** they encourage non-governmental organizations to develop business ideas and generate funds which can be used for supporting their causes in order to promote their sustainable development.

The program "*Entrepreneurship for Non-Profit Organizations*" (NGO Entrepreneurship program) started in 2009 and has proven that when there is a good combination of the key ingredients for success in entrepreneurship – expert support, finance and mentoring – things are happening, people get inspired, and results are being achieved. Apart from stories of successful examples, the BCNL also mentions the facts about decreasing NGO funding – with the clear idea to motivate more non-governmental organizations to pay attention to this source of revenue that is still underestimated.

In its essence, the program is designed to respond to the needs of the organizations for support in different aspects of their business endeavours. From expert support for the improvement of their ability to prepare business plans to increase of their skills for public presentation; from the opportunity to receive financial support as an initial investment for a smooth start to mentoring by business experts to encourage them in their first steps.

BCause Foundation and its "Rinker Center for Entrepreneurship and Training"

BCause Foundation is an expert organization, a recognized leader with more than 20 years' experience at national and international level (since 1995). They encourage people, organizations and communities to transform their lives, by developing the giving culture and social investment. The organization offers to companies and people a choice of important causes, which brings them satisfaction with the benefits to society. In their activity, they channel donor resources and contribute to the financial and organizational strengthening of civil society organizations and public institutions such as schools, libraries and museums. They take part in the promotion and support of donation causes. They also support donors and **Social Entrepreneurs** with personalized, high added-value services. The team of BCause influences policies and culture in the field of donation and social investment through research, government consultations and special communication projects.

Since 2014, the BCause Foundation has a **Rinker Center for Entrepreneurship and Training** set up to promote education, lifelong learning and support entrepreneurship and business development in Bulgaria. They support and encourage active organizations and citizens to raise funds for major causes – social, education, culture, local development, the environment, human rights, and treatment[5].

BCause runs several thematic donor funds. The funds are provided by individual and corporate donations and are distributed on a competitive or targeted basis. The Foundation also distributes grants on a competitive basis from corporate programmes.

[5] BCause Foundation had developed different tools to raise funds for an important topic such as the Unified Charitable Number DMS 17777 and the web site www.Platformata.bg.

The Roadmap and the Indexes for Social Entrepreneurship

Rather interesting is the **Roadmap** and the formulated **indexes for Social Entrepreneurship in Bulgaria**. The **Roadmap** was developed by the Bulgarian Center for Not-for-Profit Law and the Charity Aid Foundation. Its aim is to give a vision and steps for the development of **Social Enterprises** in Bulgaria.

The **Roadmap** was developed after consultations with representatives of non-governmental organizations involved in the topic of **Social Entrepreneurship** development (members of the Social Enterprise Forum), as well as representatives of state institutions related to the envisaged measures (Ministry of Labor and Social Policy, Employment, Disability Agency, Agency for Small and Medium Enterprises).

The goals of the **Roadmap** are connected with creating a favourable environment for the development of the SEs.

Its objectives are to serve as a starting point for introducing criteria for the identification of enterprises and organizations from the social economy and to serve as the basis for creating a favourable administrative and legal environment for the development of social economy enterprises (access to finance, social clauses in public procurement, tax breaks, etc.).

The results, expected of achieving these aims, are connected with the clear identification of SEs:

- SE is created and self-estimated easily with less time and less administrative steps;
- The number of SEs is flourishing and growing;
- Equal opportunities for all SEs (growth of firms that are identified as SEs would be the most important indicator);
- Growth in the amount of public resources that are used by the SEs (more mechanisms and capabilities);
- Diversified and easy access to public resources (increasing number of SEs that use them);
- Increased service/product quality (number of customers choosing SEs through vouchers or other mechanisms).

The aims connected with improving the capacity of the SE are focused in the objectives of the *National Social Economy Concept 2016-2017*, i.e. to serve as a basis for creating a favourable administrative and legal environment for the development of social economy enterprises (access to finance, social clauses in public procurement, tax relief, etc.). The result that can be observed is the increased measurable social or environmental impact (increased number of employees, satisfied employees, customers, improved environmental quality). Furthermore, in the results can be added a growth by Economic Indicators (Indicators include declared earnings, taxes, salaries, insurances, duration of the activity, etc.), value-added growth (Innovation), increased financial resource and support for SEs (start-ups, donations, capacity development programs).

The implementation of the principles of good governance in the state policy towards the SEs are connected with the objectives of the *National Concept for Social Economy* to serve as a current "standard" to assist the development of the social economy and to encourage contractors and supporters to implement and disseminate the spirit of social solidarity. Results are in line with ensuring a consistent based on real needs, stakeholder involvement, recognition of successful models and solutions. It should be accompanied by forcing activities to capacity building of an administrative unit for planning, coordinating and implementing SE policies (indicator – number of meetings of a permanent inter-ministerial group on the social economy), etc.

The Social Business Index is a set of indicators, grouped into four main categories. They evaluate the development of the SEs in Bulgaria, its capacity and efficiency. Its aim is to be a working tool for assessment and self-assessment of the sector that reflects both the current state and the processes of development. Based on annual measurements through the Index, planning for the development of the sector can be done – identify problems and suggest steps to resolve them. If it is developed, its annual implementation is well established, and in the future, the index may turn into comparison with other European countries.

The Crowdfunding for Social Causes

The crowdfunding as an opportunity for **Social Entrepreneurship** is a new way for people to share ideas and find financing. Despite the growing importance of crowdfunding, academic research is still very limited and typically focused on understanding the dynamics behind the decision on the form of crowdfunding to adopt or engage in, and the characteristics of successful campaigns (Mollick, 2014). Crowdfunding has become a key research trend in recent years providing a new form of acquiring funding for innovation projects from users prior to the realization of the product in a 'market before the market' (Brem et al., 2017).

Leaders, good practices, offering innovative solutions, achieving innovations, delivering higher value to consumers are successful. In the context of the above mentioned (and not only) the issue of boosting competitiveness through innovative financial solutions such as the crowdfunding process is becoming more apparent and becoming an imperative for both business units and the economy at a national and global level (Angelova, 2018).

Many researchers argue that crowdfunding platforms may give rise to a more widespread occurrence of user entrepreneurs, who found a firm to commercialize their product or service in a marketplace they have created for their own need (Brem et al., 2017). Hence, they show the development from traditional user innovation to crowdfunding-enabled user innovation, which democratizes not only the creation but also the more large-scale commercialization of new products and services. This is a prerequisite for enhancing the **Social Entrepreneurship** as well.

In summary, the crowdfunding as a way of financing social organizations is a modern and useful method that contributes to the implementation of social ideas and goals. There are many examples of founded **Social Enterprises** that used a crowdfunding platform for the realization of their social direction. Unfortunately, this is not a widespread opportunity for funding in Bulgaria, and the practice shows that Bulgarian entrepreneurs do not use it.

Conclusion

The third section of the study presents different opportunities for funding SEs in Bulgaria. The article includes an in-depth research of the objectives of different programs, policies, and mechanisms supporting the labour market, helping people get better jobs and ensuring fairer living standards and more employment opportunities. The **European Social Fund** funds projects and programs in six specific fields relevant to creating jobs and helping workers to fill them. The priorities provided by the **European Fund for Strategic Investments** are connected with investments in human capital, education and science, innovative teaching methods, better access to jobs and training, social inclusion projects, etc. This section outlined the opportunities provided by the **Bulgarian Center for Not-for-Profit Law, BCause Foundation, the Roadmap, the Crowdfunding** and forced to the target group of people in society who are more vulnerable to unemployment and social exclusion. All of them are connected with creating a favourable environment for the development of SEs.

In summation, we will make a list of the most famous opportunities for funding a **Social Enterprise** that have announced good practices and many realized projects through the years[6]:

Table 2

A List of the Opportunities for funding a SE

1. A procedure for financial help by the Agency for social promotion;
2. Counterpart International;
3. StartUp Foundation;
4. Start It Smart;
5. Junior Achievement;
6. CISCO Entrepreneurship Institute;
7. Bulgarian social assistance agency (Program for employment and social innovation);
8. European Social Fund;
9. Social Enterprise Support Funds;
10. The European Fund for Strategic Investments;
11. The Action Plans for the Social Economy;
12. The Action Plan "Entrepreneurship 2020 – Bulgaria";
13. European structural and investment funds;
14. Operational Program "Human Resources Development";
15. Operational Program "Innovation and Competitiveness" 2014-2020;
16. The Bulgarian Center for Not-for-Profit Law funding programs ;
17. The program "Entrepreneurship for Non-Profit Organizations";
18. BCause Foundation – Rinker Center for Entrepreneurship and Training;
19. The crowdfunding for social ideas.

Source: Own interpretation

[6]. The list is made in summary based upon data from the author's research and without claims of exhaustiveness.

4. An Empirical Study of the Design for Social Entrepreneurship in Bulgaria

4.1. Qualitative Interview Results

Two Focus Groups were held in order to produce a single agreed platform for communicating in an objective way the company works, i.e. in-depth interviews with the owners (32 people) and in-depth interviews with the top management (13 people). As no such research was conducted in the companies before, it took some months to make the Top Management willing to cooperate and finish the research.

A potential limitation was with this particular group of entrepreneurs and more precisely they were a convenience sample, identified by a shared personal connection via the Agency for Social Assistance and Confederation of Employers and Industrialists in Bulgaria. As a result, in this kind of interview, there is a distinct possibility of the respondents providing answers they might expect us to want to hear or perceive as most helpful to the research. To mitigate these concerns, the questions were structured to be suitably open-ended in order for the respondents to provide as much of their own thoughts as possible. Additional prompts typically asked if they could provide more information and avoided leading the response.

The organizations in this research are located in the Plovdiv region and produce souvenirs, postcards, and clothing. They are registered as not-for-profit enterprises, which identified themselves as social. As shown on the next tables, the biggest group not-for-profit enterprises which identified themselves as social, are positioned in the town of Plovdiv (235). 63 % of them are not-for-profit enterprises, identified themselves as social. On the second place is the town of Asenovgrad with 27 registered SEs and the first place is taken by the town of Karlovo (23).

Table 3

Not for profit enterprises, which identified themselves as social, by number of employees

Groups of enterprises	Enterprises	Enterprises with profit from business
up to 9	1432	155
from 10-49	112	38
50+	12	4
Total for the country	**1566**	**197**

Source: http://seconomy.m38lsp.government.bg/db/en/nsi-report-nto-employees, 2013

Table 4

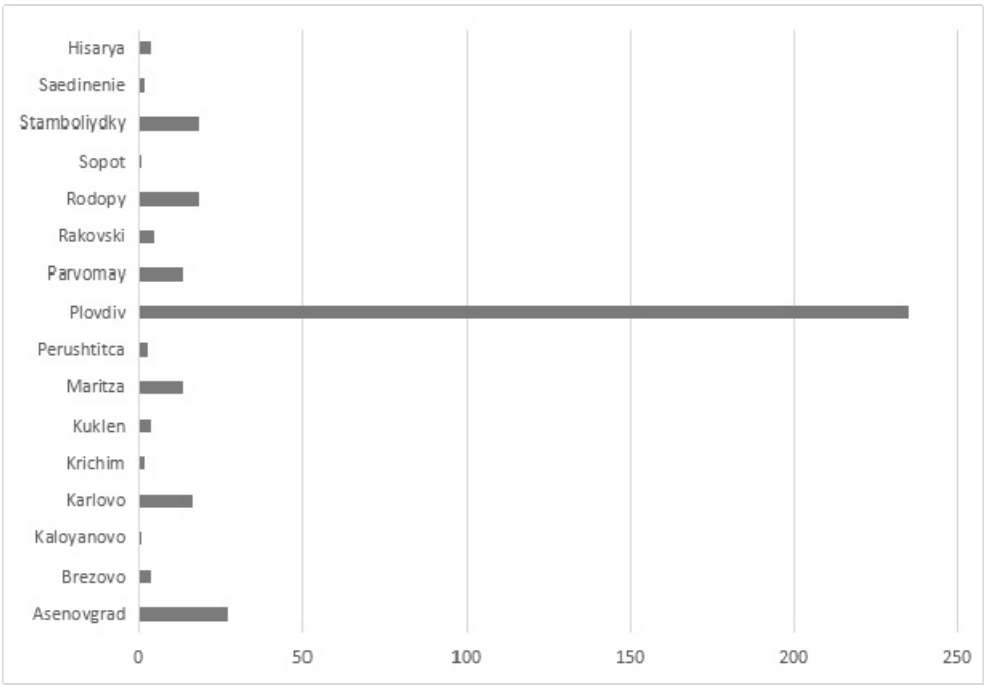
Not for profit enterprises, which identified themselves as social, by financial indicators

Groups of enterprises	Revenue from business	Costs for business	Revenue from non-economic activities	Costs for non-economic activities	Fixed assets
up to 9	4 522	3 982	58 008	55 036	24 473
10 – 49	9 010	4 808	47 908	54 223	15 543
50+	8 584	6 677	73 759	75 730	24 707
Total	**22 116**	**15 467**	**179 675**	**184 989**	**64 723**

(NSI: In order to avoid loss of information due to confidentiality of data, the last two groups of "50-249" and "250+" are grouped in one – "50+".)
Source:http://seconomy.mlsp.government.bg/db/en/nsi-report-nto-employees?indicators=1&field_ent_year_value%5Bvalue%5D%5Byear%5D=2013, 2013

Figure 6

Not for profit enterprises, which identified themselves as social, Plovdiv region



Source: NSI, 2014

The in-depth interviews were held face to face with the **Social Entrepreneurs** in an appropriate for them time and place. The respondents were asked to describe a successful **Social Enterprise** according to their own point of view. In most cases, through this method, they make a projection of their own problems and give solutions through creating the "ideal type" **Social Enterprise**. The model of a successful **Social Enterprise** can be connected with the development stage of every enterprise. For example, in the cases where the enterprise is in the project stage or is just an idea, or is a start-up the successful enterprise is imagined in the most ideal picture with minimum concrete data – the vision of the respondents is abstract following the line that all the employees are motivated and dedicated to the special cause in a sustainable enterprise. Correspondingly, the backbone is the enterprises with experience and history behind them that really work successfully – there is usually a successful enterprise, which is considered “more than the same”, either staff growth, investment, geographic expansion in other regions.

Another distinguishing feature of a successful enterprise is self-sufficiency, especially in financial aspect. There are many examples of where operating businesses have certain financial dependencies – from municipal budgets (in the case of enterprises that are part of municipal structures), from project funding that is unsustainable to the extent unpredictable by donors who would also end funding.

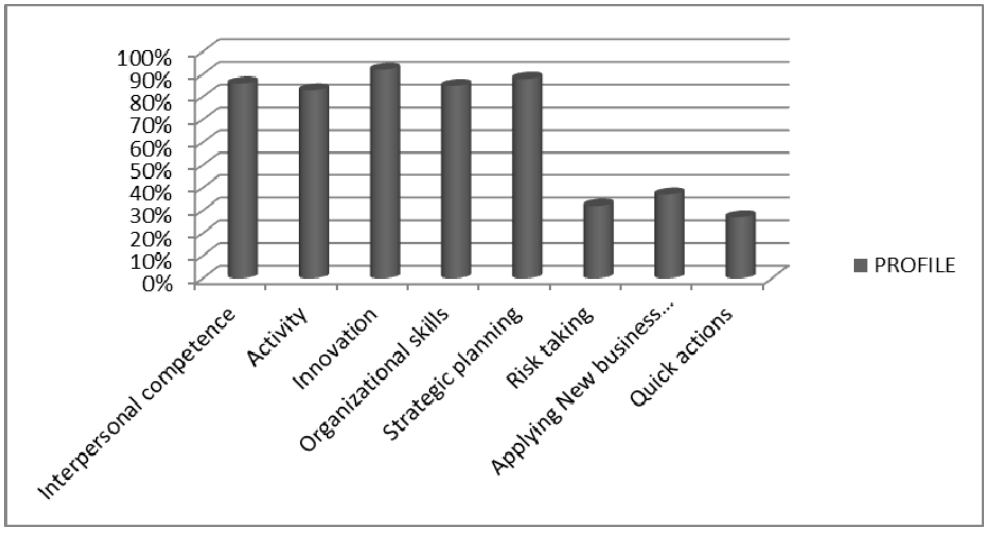
Many surveys assess the impact of entrepreneurial skills (Fayol & Todorov, 2011; Davidkov, 2005) to launch entrepreneurial initiatives in the sphere of social activities. At most valuable level are the communication skills, the initiative, the ability to work in a team and managerial skills and abilities of the entrepreneur.

A profile of the Social Entrepreneur (a conclusion after the in-depth interviews)

Despite the small sample, some dependence can be traced between the types of **Social Enterprises** and the profile of the entrepreneur. Enterprises with a dominant social cause also require a naturally "grown" entrepreneurial type that dominates **interpersonal competence and good organizational skills.**

Figure 7

A profile of the social entrepreneur



Source: Own data

In summary, it can be observed common impressions from the respondents as entrepreneurs with **great hearts convinced in themselves**; everything cannot be connected with the material part. That should be the main purpose both for the owner also for his team. They must possess healthy nerves and desire to help. The **Social Entrepreneurs** must be **committed, flexible, stubborn, and constant**. They have to be ready to sacrifice personal time, family and personal financial resources.

4.2. Quantitative Outputs

The respondents point out that they know financing opportunities encouraging the **Social Entrepreneurship**.

Table 5

Funding opportunities encouraging Social Entrepreneurship

Funding opportunities	Influence %	No influence, %	Don't know or n/a, %
Counterpart International	23	**74**	3
A procedure for financial help by the Agency for social promotion	**55**	**40**	**5**
StartUp Foundation	16	74	10
Start It Smart	26	74	0
Junior Achievement	33	64	3
CISCO Entrepreneurship Institute	**44**	**56**	**0**
Bulgarian social assistance agency (Program for employment and social innovation)	**65**	**30**	**5**
European Social Fund	**52**	**44**	**4**
Social Enterprise Support Funds	11	86	3
The European Fund for Strategic Investments	10	77	13
The Action Plans for the Social Economy	5	95	0
The Action Plan "Entrepreneurship 2020 – Bulgaria"	**44**	**55**	**1**
European structural and investment funds	**64**	**33**	**3**
The long-term strategy for the employment of people with disabilities 2011-2020	**42**	**58**	**0**
Operational Program „Human Resources Development"	**77**	**23**	**0**
Operational Program "Innovation and Competitiveness" 2014-2020	**66**	**33**	**1**
National Strategy for Poverty Reduction and Promotion of Social Inclusion	14	85	1
The Bulgarian Center for Not-for-Profit Law funding programs	**43.25**	**56.75**	**0**
The program "Entrepreneurship for Non-Profit Organizations"	38.5	60.5	1
BCause Foundation – Rinker Center for Entrepreneurship and Training	**71**	**27**	**2**
The crowdfunding for social ideas	5.8	93.2	1

Source: Own data

The impact of the different opportunities noted by more than 50% of the respondents indicates that they have used and/or applied for funding. They think that **the most successful opportunities** for support and financing are given by The Agency for Social Promotion (55% influence), Operational Program "Human Resources Development" (77%), Operational Program "Innovation and Competitiveness" 2014-2020 (66%), European Social Fund (52%), and BCause Foundation marked by 77% of respondents.

Most of the respondents (73.8%) have been participated in social initiatives for funding new innovative entrepreneur's social ideas (as owners of an enterprise, as a part of a funding agency).

They evaluate the government competencies (i.e. the administrative staff) at a low level and mark that there is a necessity to increase their qualities (54%). It's necessary to optimize the environment for **Social Entrepreneurship** at all levels (96.5%).

A set of research questions emerge once we take into account the hybrid nature (Main economic indicators of enterprises, which identified themselves as social are *Non-financial enterprises, which identified themselves as social* and *not-for-profit enterprises, which identified themselves as social*) of the organizations surveyed. Indeed, key issues such as the mobilization of resources for their functioning and the mechanisms to enlist and commit members have hardly been subject to a systematic empirical assessment. The members of hybrids typically gather around common social values, mobilization of resources through accessing social networks and connecting with organizations that control important resources (including members, funds, legitimacy, and technical expertise), and build social capital by responding to the expressive and social identity needs of their members.

According to the developed methodological issues, the questions in the questionnaire can be classified into 4 groups:

Group 1: Characteristics of the enterprise that are connected with the number of employees, the form of ownership, and the sphere of work of the organization (Q 2.1; 2.2; 2.4).

Group 2: Factors that influence the realization of mission and goals of the SE – the understanding of social goals, the expected results from implementation the goals, understanding the essence of social mission and **Social Entrepreneurship** (2.6; 2.7; 2.8; 2.9; 2.10).

Group 3: Indicators – this group includes the demographic characteristics of the respondents, i.e. gender, age, educational level, working experience, managerial level (Q 1.1; 1.2; 1.3; 1.6; 1.7).

Group 4: Results – includes questions concerning the evaluation of the motivation for **Social Entrepreneurship** (Q 3.1) and factors that influence the adaptability to market conditions and financing opportunities (Q 3.2. and Q 3.3).

The correlation analysis shows **a strong correlation between questions 3.1, 3.2 and 3.3**, which are identified as results, and they will not be included in the subsequent analyzes as they are dependent. Therefore, we will find the correlation between question 3.1 for assessing motivation for **Social Entrepreneurship**, the factors, indicators, and characteristics of respondents.

A correlation and cluster analysis of Indicators and Results

According to the selected 5 indicator variables (gender, age, education, working experience, position in the organization), a cluster is identified through the cluster analysis methods. The basic parameters of the cross-section analysis are as follows: Group method; Increasing sum of squares; Number of variables for the group – 5 variables; Coefficient of approximation – Euclidean Distance; Shuffle the grouping tree: through approximations.

According to the results of the cluster analysis, the company observations can be grouped into 4 clusters. The distribution of company surveys by a group is presented as on the next table.

Table 6

Structure of the identified 4 groups

Group number	Number of respondents	Relative share (%)
1	93	25.06
2	118	31.80
3	80	21.56
4	80	21.56

Source: Own data and own calculations using Clustan Graphics 1.0

Table 7

Average value of every variable in the groups

Variable	Gender	Age	Education	Working experience	Labour position
Group 1	1.38	51.24	2.77	25.33	2.98
Group 2	1.54	38.58	2.94	12.93	3.19
Group 3	1.00	34.00	3.60	8.40	3.60
Group 4	1.36	24.76	3.06	5.09	2.39

Source: Own data and own calculations using Clustan Graphics 1.0

In order to understand the basic characteristics of the different groups of employees, a correlation analysis was performed between the Group Affiliation (Group Number) and the Grouping Variables.

The results of the analysis allow to describe the peculiarities of each of the groups as follows:

Group 1: Includes predominantly older men, with the average age being 51.24 years. They are characterized by higher education and occupy organizational management in the enterprise.

Group 2: The respondents' age is on average 38.58 years, including mainly women who are defined as employees in organizations.

Group 3: Includes only men who have a master's degree and have a middle management level. Young people are included in this group, with the average age 34 years.

Group 4: The group summarizes the youngest respondents aged up to 30. From the correlation analysis, it can be concluded that there is a strong correlation between group 4 and age. Their average age is 24.76 years. Accordingly, this dependence is also expressed in the total length of service. With age increases, other labour-related indicators also increase. This group is characterized by an operational management level.

An additional idea of the formed groups of respondents can be obtained by analyzing the differences between the groups according to the main result variables, namely the degree of motivation for social activities. The research hypothesis is: **The level of motivation for Social Entrepreneurship (carrying out social activities) is related to the group membership and differentiation of respondents according to their age, gender, and**

position. The hypothesis is confirmed, and its verification is performed through a parametric correlation analysis between question 3.1 and individual groups.

Table 8

Correlation matrix with a coefficient of parametric correlation (Pearson correlation)

		Level of motivation	Group 4	Group 1	Group 2	Group 3
Level of motivation	Pearson Correlation	1	,358**	.a	,126	*,269***
	Sig. (2-tailed)		,000	.	,086	*,000*
	N	370	370	370	370	*370*
Group 4	Pearson Correlation	,358**	1	.a	**,731****	**,948****
	Sig. (2-tailed)	,000		.	**,000**	**,000**
	N	370	371	371	**371**	**371**
Group 1	Pearson Correlation	.a	.a	.a	.a	.a
	Sig. (2-tailed)	.	.		.	.
	N	370	371	371	371	371
Group 2	Pearson Correlation	,126	**,731****	.a	1	**,838****
	Sig. (2-tailed)	,086	**,000**	.		**,000**
	N	370	**371**	371	371	**371**
Group 3	Pearson Correlation	*,269***	**,948****	.a	**,838****	1
	Sig. (2-tailed)	*,000*	**,000**	.	**,000**	
	N	*370*	**371**	371	**371**	371

Legend: in BOLD – strong correlation (Correlation coefficient >0,500); in UNDERLINE mode – moderate correlation (0,499>0,300); in *ITALIC* – weak correlation (0,299>coefficient). The assessment is carried out at a security factor $\alpha<0,05$.
Source: Own data

There is a weak correlation between the degree of motivation and group 3. This gives reason to assume that men who are highly educated are influenced by the motivation for social activities. The different qualifications and ages of Group 3 representatives are linked to a different level of motivation. In addition, this also means a differentiation in terms of performance and willingness to make additional efforts.

There is a moderate correlation between Group 4 and the degree of motivation. There are prerequisites that differentiate young professionals from their development potential in the enterprise. This group is influenced by the degree of motivation, with representatives being flexible and mobile, and further efforts are needed to involve them in social activities and initiatives of the organization, which will reflect on growing motivation.

The investigated correlations confirm the existence of strong links between the groups of questions developed in the methodology presented by factors, indicators and results. The analysis helps to find ways to manage the factors according to the employee's characteristics in order to perform activities that increase the degree of motivation for **Social Entrepreneurship**.

Proper and well-grounded management of the factors will contribute to enriching the activity of the **Social Enterprise**, undertaking new initiatives with a social focus, helping

the community and vulnerable groups, introducing innovations for **Social Entrepreneurship**.

Conclusion

In this section are outlined the results of the empirical study of the design for Social Entrepreneurship in Bulgaria. The qualitative interview results as a conclusion after the in-depth interviews serve as a prerequisite for the creation of a profile of the **Social Entrepreneur**. In summary, it can be observed common impressions from the respondents as entrepreneurs with great hearts convinced in themselves; everything cannot be connected with the material part.

The quantitative outputs include a statistical analysis of relations and dependencies. It is done using a set of methods to study the impact of one or more variables considered as factors with respect to another variable considered as a result. The choice of a statistical method depends on the statistical variables used, whether they are qualitative or quantitative, and on which scale they will be presented. The aim of these methods is to quantify the impact of each factor on the result. On the basis of the problems identified, a series of recommendations can be formulated to improve the environment for **Social Entrepreneurship** in Bulgaria.

- Resources for supporting **Social Enterprises** are not spent efficiently enough.
- In addition, the lack of entrepreneurial skills and culture among representatives of the non-governmental sector, which still provide the core human resources of **Social Entrepreneurs**, requires a new, modern approach to financing the emerging or existing businesses where the provision of funds does not exhaust the donor's commitment but is accompanied by long-term support and tracking of the enterprise's development.
- Mobilizing the available internal and external resources (attracting young and enterprising Bulgarians from the country and abroad for the cause of **Social Entrepreneurship**) can provide a much wider basis for the development of the SEs.
- Active work with local businesses to promote social entrepreneurship and social enterprises is also a step in this direction.

Conclusions

Social Entrepreneurship in Bulgaria without stable funding programs decreases the number of such enterprises, and project finance alone is not enough for their sustainable development. The data from NSI shows that the numbers of **Social Enterprises** decrease in 2016. It should be taken into consideration that in 2012 the NSI for the first time included a question to the respondents whether they identify themselves as SEs, without specifying guiding criteria for self-determination. However, for the purposes of the report, in 2013 were introduced targeting criteria. Next, it should be noted that in 2013 the OPs have been completed to support the SEs, and a survey in the summer of 2014 showed that a large part

of the funded enterprises were no longer active. This is a clear indication that **the availability of project finance alone is not a good way to achieve the financial sustainability** of the SEs, and the need for such programs to strengthen their requirements for the SE's viability.

This study offers an in-depth analysis of the funding opportunities for **Social Entrepreneurship** in Bulgaria under the conditions of a transition economy. Problems related to the opportunities for creating and developing SEs undoubtedly poses challenges to managers and employees in the context of the current political and economic situation. The problem is scientifically relevant and in a practical – applied plan, with the lack of specific developments in the riches of **Social Entrepreneurship** management, "white fields" and gaps in the status of these organizations and their specific characteristics.

The results of the study confirm the thesis of the article. Arguments in support of the thesis that exploring and identifying **Social Entrepreneurship** opportunities is a possible task only if a proper and sufficiently comprehensive range of National and European strategies, policies, funding programs to support the development and strengthening of the sector are used.

The overall results of the study, and especially the findings and recommendations, could be useful for other companies to know the problems of **Social Enterprises** and to focus on new opportunities and prospects for sustainable development.

The results of the research will contribute to **solving a number of problems**, including:

• ensuring a lasting and sustainable relationship with the business (**Social Enterprises**) in the country;

• disseminating and popularizing the results of the research.

The results obtained can be used in the practice of management and control of business and public organizations, financial investments, development of marketing campaigns and social programs, making of business decisions for incomplete and inaccurate information, etc.

The Bulgarian non-profit sector is in a growth stage, with more and more attention given to hybrid forms such as **Social Enterprises**. However, the visibility of the concept and the founders of such entities are very low. The efforts to reveal them showed that **the idea of Social Entrepreneurship and Social Enterprise is far from familiar to many actors in the field**.

One intervention that could encourage the development of this phenomenon in Bulgaria is **the investment in human capital** and **life-long learning programs** that focus on developing **Social Entrepreneurship** competence in both active and starting professionals from all fields.

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SUMMARIES

Alexander Bystryakov
Nikolay Nenovsky
Elena Ponomarenko

MONETARY INNOVATIONS AND DIGITAL ECONOMY

This article discusses the main changes in the field of digital and cryptocurrencies, as well as their interpretation from the standpoint of the common theory of money (e.g. the definition of monetary functions). The consequences of the central banks' monetary policies as well as their reaction by launching their own digital currency (central bank digital currency/CBDC) have also been dwelt upon. The possible changes in the global currency system have been outlined. Special attention has been paid to the development of higher economic education as a result of the new monetary and financial technologies and the digital economy. These topics have been set forth against the background of the experience of different countries (with a particular emphasis on Russia's practice), as well as by summarizing leading research and publications in the field.
JEL: A2; E40; E5; F02; O3

Vesselin Blagoev
Elena Shustova

THE NATIONAL CULTURE EFFECT ON THE ADOPTION OF INTERNET-BANKING

This paper analyses the relationship between the national culture (Hofstede's cultural dimensions Individualism, Uncertainty Avoidance index and Power Distance index, as well as Minkov's Indulgence vs Restrain index) and the adoption of Internet banking in 30 European countries. We presume, that if there is a strong correlation between them, some recommendations to the banking sector could be made to help them develop more effective marketing strategies to increase the adoption of e-banking, based on the cultural specifics in the particular country or clusters of countries. Our findings show that there is a strong correlation between those cultural dimensions and the adoption level of e-banking. In particular, it was found that the Individualism has a lead role in most of the cases. However, in the cases of a combination of high Uncertainty Avoidance and low Indulgence, the lead role of Individualism does not manifest.

We also argue, that in the cultural combination of high Individualism, and high Uncertainty Avoidance index with low Indulgence vs Restrain index, the combination of Individualism and Restrain factors reduces the influence of Uncertainty Avoidance, no matter how high it is.

We analyse and also discuss the influence of different other factors, which influence the adoption of Internet banking, looking for combinations which lead to specific effects.
JEL: M14; M15; G21

Yevheniia Polishchuk
Alla Ivashchenko
Oleksandr Dyba

SMART-CONTRACTS VIA BLOCKCHAIN AS THE INNOVATION TOOL FOR SMES DEVELOPMENT

The main aim of the research is to develop recommendations for Cooperative model implementation in order to improve SMEs` performance by cost reduction through automating manual processes and attenuating legal risks regarding code-based SMART-contracts implementation via decentralized blockchain technology. The authors explored the main benefits for business entities of using SMART contracts as a digital tool for automating a large number of business processes in the DLT-system. Among with this, the potential risks for conducting the business activity of SMEs were considered, which could be exemplified as lack of legislation, high volatility of cryptocurrency, attenuation of monitoring level, etc. The usage of blockchain Smart contracts as the part of machine learning could lead to become SME Smarter, more dynamic, more flexible and more integrated with big data, which presupposes innovative component of business development.
In the context of Smart specialization implementation in developing countries in EU, the Cooperative Model between different stakeholders based on SMART contracts in the frame of Smart specialization was designed and proposed by the authors. This Model allows to involve non-top developed regions into the innovative process. Besides SMEs' participation, the Model provides cooperation between other participants: research and innovative centers, universities, government structures, non-government organization, big corporations. It was studied how SMART contracts make review the business process and revolutionize it, improving difficult collaborations between business and science organizations. The fragment of possible Smart contract program code was regarded as an example.
JEL: G12; G15; G24; G32

Georgi L. Manolov

THEORETICAL ASPECTS OF POLITICAL ADVERTISING

The historical roots and subsequent development of political advertising in the modern world are examined. A definition of this type of advertising is derived based on a review of some of its most important scientific productions. The views of leading theorists of political advertising in the twentieth century are presented. A classification of the main types of political advertising is made.
JEL: M37

Iryna Kalenyuk
Liudmyla Tsymbal
Maiia Fedyshyn

METHODICAL PRINCIPLES OF ESTIMATION OF INTELLECTUAL LEADERSHIP OF THE GLOBAL ECONOMY ACTORS

The study of the economic aspects of leadership is a topical issue both in practical applications or management theories and in general economic science for understanding the issues of entrepreneurship, competitiveness, international economics, globalization. The phenomenon of leadership is interest in the context of determining its essence, mechanisms, role in the processes of world economic development and evaluation. The separation of this kind of leadership as an intellectual is caused by the increasing importance of human resources in general and their intellectual

components, in particular, in supporting the development of a modern economy. Intellectual factors, directly or indirectly, due to the influence on other factors, are becoming key in ensuring high positions in today's highly competitive environment. Identifying the influence and role of intellectual factors in achieving leadership positions in the global economy is enabled by the analysis of the intellectual component in different approaches to determining leadership positions. Methodical approaches for estimation of the intellectual leadership of multilevel entities in the global economy are offered. The presented methodology is based on the identification of the three levels of intellectual leadership implementation: the level of resources, the level of results and the level of final results. Each of these levels is characterized by an appropriate system of indicators for different subjects, which allows them to determine their positions according to different criteria at different levels of competition. This research can be used by economists, management specialists.
JEL: I23; I25

Igor Britchenko
Tetiana Romanchenko
Oleksandr Hladkyi

POTENTIAL OF SUSTAINABLE REGIONAL DEVELOPMENT IN VIEW OF SMART SPECIALISATION

Potential of sustainable regional development is studied through demographic, economic, social, socio-cultural and ecological indicators in order to determine the strategy development areas of regional SMART specialisation on the example of Cherkasy oblast (the central region of Ukraine).
Cherkasy oblast was selected for the study because it is one of the pilot regions for the implementation of the SMART specialisation strategies.
The following methods were used in the course of the study: the system-structure analysis, comparative-geographic method, mapping (GIS – MapInfo Professional, Surfer Golden Software, and program for gravity modelling of the potential field calculation), interpolation, correlation and description-statistical method.
The results of the study are intended for national and regional policy-makers, representatives of self-governance, researchers dealing with regional development problems, NGOs, representatives of small and medium business, public activists and others.
The proposed results of the study of the sustainable regional development potential in view of SMART specialisation on the example of Cherkassy oblast may be used in the countries of the Eastern Partnership (Belarus, Georgia, Moldova, Azerbaijan, Armenia).
JEL: R11; R53

Dimitar Zlatinov
Bozhidar Nedev
Iliya Atanasov
Nedko Kosev

EFFECTS ON THE ECONOMIC GROWTH IN BULGARIA DURING THE TRANSITION TO LOW-CARBON ECONOMY IN THE ENERGY SECTOR

The paper analyses the potential macroeconomic effects that the transition to a low-carbon economy would generate on investment activity and employment in the energy sector in Bulgaria. Global and European initiatives and regulations are reviewed. They trace the changes in the structure of the energy sector and may be assessed as an external shock to the country's economic growth. Using the

production function approach, the relationship between real GDP, on the one hand, and capital and employees in the energy sector, on the other hand, is modelled and estimated in 1997-2017. The econometric estimate shows that a negative effect on the real GDP growth rate would be expected due to the contraction of the energy sector. Such effects may stem from the reduction of investments because of a decrease in production and profits in the sector, while employment levels have no significant impact on gross value added. This puts much more emphasis on conducting government policies on maintaining the technological level of the sector than on the negative social consequences of increasing unemployment in the energy sector.
JEL: E01; 044; 047

Galya Taseva

PASSIVITY OF CREDITORS AMONG NON-FINANCIAL ENTERPRISES IN BULGARIA

The aim of the article is to study creditor passivity among non-financial enterprises in Bulgaria. The analysis is based on data from a national representative empirical sociological survey among 1000 non-financial enterprises of different size and main activity. The results of the survey reveal that a significant part of the companies (little more than one-tenth of respondents) do not have a precisely defined approach to reducing the risk of overdue receivables.
The profile of companies showing creditor passivity is outlined. On the whole, it can be summarized that the share of firms lacking a certain approach to reducing the risk of overdue receivables is higher for enterprises with lower turnover and value-added, with fewer employees, operating in sectors with lower entry barriers, firms that have failed to expand their markets and their production capacity in recent years and are characterized by weak innovation activity.
There are statistically significant links between the lack of a certain approach to mitigating the risk of overdue receivables and various indicators of the relative market power of firms.
The study also identifies dependencies between the passivity of firms as creditors and their innovation activity, the specifics of the corporate culture, in particular, the management of the motivation of the employees, the maintenance of the image of the company in the public space, the concern for building a long-term relationship with the trade partners. These dependencies also testify to the importance of the quality of management and, in particular, to the role of having a comprehensive vision of the company's development for effective credit risk management.
JEL: G30; G32; G39

Mina Angelova

PERFORMANCE OF SOCIAL ENTREPRENEURS AND SOCIAL ENTREPRENEURSHIP IN BULGARIA

The paper investigates how Bulgarian social economy has currently been performing. In the text, the author mainly focuses on an analysis of various financial indicators of **Social Enterprises** in Bulgaria as well as on different relations between these indicators. This research explores social phenomena on the Bulgarian market related to **Social Entrepreneurs (SErs)** and **Social Entrepreneurship (SEp)**. The article investigates which factors are important to facilitate their relationships and provide a full profile of SErs. The research methodology is of a survey-descriptive type. A wide range of research methods are used to successfully achieve the goals and tasks of the research. Analysis of collected data was made using the Statistical Package for the Social Sciences (SPSS).
JEL: L26; L31