

INTERNATIONAL SCIENTIFIC CONFERENCE "DEVELOPMENT THROUGH RESEARCH AND INNOVATION - 2022"

CONFERENCE PROCEEDINGS



HR EXCELLENCE IN RESEARCH



MINISTERUL
EDUCAȚIEI ȘI CERCETĂRII



Academia de Studii Economice a Moldovei



SPECIALIZATION - EXPERIENCE - OPPORTUNITY

ARMENIAN STATE
UNIVERSITY OF
ECONOMICS



Co-funded by the
Erasmus+ Programme
of the European Union

MINERVA 2019-2023
Strengthening Research Management and
Open Science Capacities of HEIs in Moldova and Armenia

Online Conference for Researchers,

PhD Students and Post-Doctoral Researchers,

August 26th, 2022

The Academy of Economic Studies of Moldova,
Chisinau, Moldova

Republic of Moldova, Chisinau, 2022



MINISTERUL
EDUCAȚIEI ȘI CERCETĂRII



HR EXCELLENCE IN RESEARCH



Co-funded by the
Erasmus+ Programme
of the European Union



THE 3RD

INTERNATIONAL SCIENTIFIC CONFERENCE “DEVELOPMENT THROUGH RESEARCH AND INNOVATION - 2022”

Online Conference for Researchers, PhD Students and Post-Doctoral Researchers

August 26th, 2022

The Academy of Economic Studies of Moldova, Chisinau, Republic of Moldova

CONFERENCE PROCEEDINGS

Republic of Moldova, Chișinău, 2022

CZU 082
D 35

Conference Proceedings

International Scientific Conference

"Development Through Research and Innovation - 2022" (August 26th 2022)

Copyright 2022

All rights reserved

The editors are not held responsible for the contents of the published scientific papers, nor for the researchers' opinions presented in this Volume

GENERAL CHAIR

Prof. Stratan Alexandru, Rector of the Academy of Economic Studies of Moldova, Republic of Moldova

ORGANIZING COMMITTEE CHAIRS

Cociug Victoria, PhD, Vice Rector for Research and Partnerships, ASEM, Republic of Moldova

Feuras Eugenia, Doctor Habilitatus, Director of the Doctoral School of ASEM, Republic of Moldova

Copaceanu Cristina, PhD, Director of the Doctoral School in Consortium with ASEM and USPEE "C. Stere", Republic of Moldova

Staver Liliana, Head of the Science Service, ASEM, Republic of Moldova

Mistrean Larisa, PhD, the Academy of Economic Studies of Moldova, Republic of Moldova

Dorogaia Irina, PhD, the Academy of Economic Studies of Moldova, Republic of Moldova

Shishmanov Krasimir, Professor, PhD, Dimitar A. Tsenov Academy of Economics, Svishtov, Bulgaria

Fortuna Olesea, PhD student, Doctoral School ASEM, Republic of Moldova

Bahnaru Roman, PhD student, Doctoral School ASEM, Republic of Moldova

Turcan Ștefan, PhD student, Doctoral School ASEM, Republic of Moldova

Panuș Corina, PhD student, Doctoral School ASEM, Republic of Moldova

Kulikova Elizaveta, PhD student of the Department of Financial Management and Stock Market, Odessa National University of Economics, Ukraine

Zuhran Kadieva, PhD student, Technical University of Varna, Bulgaria

Meral Ahmed, PhD student, Technical University of Varna, Bulgaria

Asiye Bilgili, PhD Student, Halic University, Turkey

Özmen Recep, PhD Student, Çannakkale Onsekiz Mart University, Turkey

Matei Ionela, PhD Student, Alexandru Ioan Cuza University, Romania

Jalea Alexandra Raluca, PhD Student, Alexandru Ioan Cuza University, Romania

Popa Bogdan, PhD Student, University of Craiova, Romania

Belu Alina, PhD Student, University of Craiova, Romania

DESCRIEREA CIP A CAMEREI NAȚIONALE A CĂRȚII DIN REPUBLICA MOLDOVA

"Development Through Research and Innovation - 2022", online international scientific conference (3 ; 2022 ; Chișinău). The 3rd International Scientific Conference "Development Through Research and Innovation - 2022" : Online Conference for Reserachers, PhD Student and Post-Doctoral Researchers, August 26th 2022, Chisinau : Conference proceedings / general chair: Stratan Alexandru ; organizing committee chairs: Cociug Victoria [et al.] – Chișinău : ASEM, 2022. – 191 p. : fig., tab.

Antetit.: Min. Educației și Cercet., Acad. of Econ. Studies of Moldova. – Referințe bibliogr. la sfârșitul art. – În red. aut.

Cerințe de sistem: PDF Reader.

ISBN 978-9975-3590-5-4 (PDF).

082

D 35

ISBN 978-9975-3590-5-4 (PDF).

DOI: 10.5281/zenodo.7533819

This Volume comprises the proceedings of the International Scientific Conference "Development through Research and Innovation - 2022", IIIrd Edition, August 26, 2022, which was held in the Academy of Economic Studies of Moldova (ASEM), Chisinau, Republic of Moldova

PROGRAM COMMITTEE MEMBERS

Cociug Victoria, PhD, Vice-Rector for Research and Partnerships, ASEM, Republic of Moldova
Feuras Eugenia, Doctor Habilitatus, Director of the Doctoral School of ASEM, Republic of Moldova
Copaceanu Cristina, PhD, Director of the Doctoral School in Consortium with ASEM and USPEE "C. Stere", Republic of Moldova
Dorogaia Irina, PhD, the Academy of Economic Studies of Moldova, Republic of Moldova
Mistrean Larisa, PhD, the Academy of Economic Studies of Moldova, Republic of Moldova
Ohrimenco Serghei, Doctor Habilitatus, University Professor, the Academy of Economic Studies of Moldova, Republic of Moldova
Petrescu Marius, PhD, University Professor, Director of IOSUD Valahia, Targoviste, Romania
Popescu Delia Mioara, PhD, University Professor, Valahia University of Targoviste, Romania
Popescu Jesica, PhD, Assoc. Prof., University of Craiova, Romania
Sitnikov Cătălina, PhD, Assoc. Prof., University of Craiova, Romania
Ovidiu Stoica, PhD, Assoc. Professor, Alexandru Ioan Cuza University, Romania
Manolică Adriana, PhD, Assoc. Professor, Alexandru Ioan Cuza University, Romania
Duica Mircea-Constantin, PhD, Assoc. Prof., Valahia University of Targoviste, Romania
Hornyk Volodymyr, PhD, Assoc. prof., University Professor, V.I. Vernadsky Taurida National University, Ukraine
Varadzhakova Desislava, PhD, Assoc. prof., National Institute of Geophysics, Geodesy and Geography Bulgarian Academy of Sciences, Bulgaria
Özen Ercan, PhD, Assoc. Prof., School of Applied Sciences, University of Uşak, Department of Banking and Finance, Turkey
Tufan Ekrem, PhD, Assoc. Prof., Çanakkale Onsekiz Mart University, Faculty of Applied Sciences, Turkey
Duran Erol, PhD, Assoc. Prof., Çanakkale Onsekiz Mart University, Faculty of Tourism, Turkey
Yüksel Atila, PhD, Assoc. Prof., Aydın Adnan Menderes University, Faculty of Tourism, Turkey
Undey Nur, PhD, Assoc. Prof., Halic University, Faculty of Management, Istanbul, Turkey
Vasileva Beaneta, PhD, Assoc. Prof., Technical University of Varna, Bulgaria
Esitti Bekir, PhD, Assoc. Prof., Çanakkale Onsekiz Mart University, Faculty of Tourism, Turkey
Tulay Güzel, PhD, Assoc. Prof., Çanakkale Onsekiz Mart University, Faculty of Tourism, Turkey
Demirova Sijka, PhD, Assoc. Prof., Technical University of Varna, Bulgaria
Lesidrenska Svetlana, PhD, Assoc. Prof., Technical University of Varna, Bulgaria
Nikolova Nedka, PhD, Assoc. Prof., Technical University of Varna, Bulgaria
Fatma Kosovali Cavus, PhD, Assistant Professor, TC Halic University, Turkey
Dimitar Dimitrov, PhD, Assoc. Prof., "St. Cyril and St. Methodius" University of Veliko Tarnovo, Bulgaria
Tatul Mkrtchyan, PhD, Vice-Rector for Science, Armenian State University of Economy, Armenia
Nerses Gevorgyan, PhD, Armenian State University of Economy, Armenia
Kovalev Anatoly, PhD, Assoc. Prof., Odessa National University of Economics, Odessa, Ukraine
Angelova Polyana, PhD, Assoc. Prof., Dimitar A. Tsenov Academy of Economics, Svishtov, Bulgaria
Pencho Penchev, PhD, Assoc. prof., "St. Cyril and St. Methodius" University of Veliko Tarnovo, Bulgaria

International Scientific Conference “**Development Through Research And Innovation - 2022**” is a deliverable within MINERVA project” Strengthening research management and open science capacities of HEIs in Moldova and Armenia”, reference number 597912-EPP-1-2018-1-MD-EPPKA2-CBHE-SP, funded by the European Union through the Erasmus + Programme 2014-2020, KA2 – Cooperation for innovation and the exchange, Key action 2 - Capacity Building in Higher Education.



Co-funded by the
Erasmus+ Programme
of the European Union

MINERVA 2019-2023
Strengthening Research Management and
Open Science Capacities of HEIs in Moldova and Armenia

„This project is funded by the European Commission. Financial support from the European Commission for this project does not constitute endorsement of content that reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.”

CONTENT

TITLE	PAGE
ENTREPRENEURIAL COMPETITIVENESS: COMPARATIVE ANALYSIS BETWEEN THE REPUBLIC OF MOLDOVA AND OTHER EASTERN EUROPEAN NATIONS <i>AUGUSTIN IGNATOV, Ph.D. Student</i>	6
THE EFFICIENCY OF PROMOTION OF GOODS AND SERVICES THROUGH SOCIAL NETWORKS: A STUDY BASED ON THE PRACTICE OF SMALL AND MEDIUM ENTERPRISES IN MOLDOVA <i>GAGAUZ VALERIU, Ph.D. Student</i>	26
NATURAL CONDITIONS AND ECONOMIC FACTORS AFFECTING THE TERRITORIAL ORGANIZATION OF FOOD INDUSTRY ENTERPRISES IN NAKHCHIVAN AUTONOMOUS REPUBLIC <i>MAHAMMAD SULEYMANOV, Researcher, Ph.D. Student</i>	33
VERTICAL AGREEMENTS ON DIGITAL MARKETS <i>CAROLINA PARCALAB, Ph.D. Student</i>	38
LEADERSHIP – A MECHANISM TO OVERCOME THE CULTURAL DIFFERENCE IN NEGOTIATION <i>GHILEȚCHI ZORINA, Ph.D. Student</i>	56
THE ROLE OF LEGALISM IN THE DEVELOPMENT OF CHINESE LAW <i>MARILENA-OANA NEDELEA, Ph.D., University Lecturer</i>	67
THE ROLE OF UNIVERSITY IMAGE AND ITS IMPACT TO COMPETITIVE ADVANTAGE <i>JOMIR EUDOCHIA, Ph.D. Student</i>	77
ECO-INNOVATION – A DRIVER TO SUSTAINABLE BUSINESSES <i>TATIANA PĂDURARU, Ph.D. Student</i>	85
EXAMINATION OF METHODOLOGICAL ASPECTS REGARDING THE HARMONIZATION OF BUDGETARY ACCOUNTING IN THE CONTEXT OF IPSAS <i>RAILEAN TATIANA, Ph.D. Student</i>	94
QUANTITATIVE AND QUALITATIVE STRUCTURAL ECONOMIC CHANGES IN THE CITIES OF ZĂRNEȘTI (ROMÂNIA) AND STRĂȘENI (REPUBLIC OF MOLDOVA) IN THE PRE- AND POST-COVID-19 PERIOD <i>CRĂCIUN LAURENȚIU, Ph.D. Student</i>	100

THE ANALYSIS OF HEALTH EXPENDITURES IN OECD MEMBER COUNTRIES	<i>ZUBCOVA ELENA, Ph.D. Student</i>	<i>113</i>
	<i>PETROIA ANDREI, Ph.D.</i>	
PROVISION OF TOURIST SERVICES IN THE BASIN OF THE LOWER COURSE OF THE DNISTRE RIVER	<i>MOROZ IVAN, Ph.D. Student</i>	<i>120</i>
APPLYING THE VALUE-ADDED TAX UNDER THE CONDITIONS OF PUBLIC-PRIVATE PARTNERSHIP	<i>PANUS CORINA, Ph.D. Student</i>	<i>128</i>
FINANCING THE DIGITIZATION OF EDUCATION IN THE REPUBLIC OF MOLDOVA: THE EDUCATION 2030 STRATEGY AND THE OPPORTUNITIES OF BLOCKCHAIN TECHNOLOGY	<i>ANDRONIC ADRIAN, Ph.D. Student</i>	<i>133</i>
THE ROLE AND INTEGRITY OF SUBJECTS IN THE PUBLIC PROCUREMENT SYSTEM IN THE PREVENTION OF CORRUPTION	<i>GALAMAGA DORINA, Ph.D. Student</i>	<i>142</i>
THE ENERGY SAVING AND COMFORT RATIO OF SMART LIGHTING	<i>CATRUC ADRIANA, Ph.D. Student</i>	<i>154</i>
THE PROFITABILITY OF THE GOVERNMENT SECURITIES: INTEREST RATE vs. YIELD	<i>SPEIAN (FRISCU) OLESEA, Ph.D. Student</i>	<i>159</i>
SOME ASPECTS OF ASSESSING THE EFFECTIVENESS OF INTERNATIONAL FINANCIAL ASSISTANCE TO THE REPUBLIC OF MOLDOVA	<i>STUPACHEV SERGEY, Ph.D. Student</i>	<i>168</i>
DEFICIENCIES OF THE VALUE ADDED TAX SYSTEM IN THE REPUBLIC OF MOLDOVA FROM THE PERSPECTIVE OF EU DIRECTIVES	<i>NOROC DOREL, Ph.D. Student</i>	<i>173</i>
REGULATION OF THE BANKING SECTOR – BETWEEN THE NEEDS OF THE MARKET AND THE RISKS OF OVER-REGULATION	<i>DERMENGI DANIELA, Ph.D. Student</i>	<i>180</i>

CZU: 332.1:339.137.2(4-11)

DOI: <https://doi.org/10.53486/dri2022.01>

ENTREPRENEURIAL COMPETITIVENESS: COMPARATIVE ANALYSIS BETWEEN THE REPUBLIC OF MOLDOVA AND OTHER EASTERN EUROPEAN NATIONS

AUGUSTIN IGNATOV¹

Abstract: *The Eastern Europe is the region which in the past decades has met important socio-economic changes determined by the transition period. Some of the countries managed to overcome these difficulties and, therefore, be able to integrate in the EU, while other states failed in this pursuit, presently, confronting with severe poverty, corruption and emigration. The present study aims in this regard to analyse entrepreneurial competitiveness of the Eastern European countries, identifying the leading and lagging economies and, respectively, the evolution of the performance discrepancies.*

Key words: *entrepreneurial competitiveness, the Eastern Europe, the Republic of Moldova, economic growth, development discrepancies*

JEL CLASSIFICATION: F41; F43; O10; O52; R11.

INTRODUCTION

The Eastern Europe is the region which in the past decades has met important socio-economic changes determined by the transition period. Some of the countries managed to overcome these difficulties and, therefore, be able to integrate in the EU, while other states failed in this pursuit, presently, confronting with severe poverty, corruption and emigration. Moreover, the modern business sectors of the Eastern European economies are challenged by globalisation which puts important pressure upon entrepreneurs, small and medium sized enterprises as well as larger firms and economic clusters. The competitiveness on the various markets has much increased due to growing globalisation which is presently identified with liberalisation of trade and migration, progress in the area of technologies and orientation of economies towards innovation, optimisation of international production, and declining transport & communication costs. Thus, businesses and their networks need significant support and stimuli from institutions and governments as to be able to survive, develop and progress. Even if some of the Eastern European nations joined the European Union, this region is still underdeveloped as compared to the Western EU being characterised by lower standards of living and economic strength. It should be underlined that economic development and competitiveness is dependent on business and its growth, since it determines capital formation, innovative and technological investments, economies' export capacities, trade comparative and competitive advantages and FDI attractiveness as well as purchasing power of the citizens which, from the perspective of this research. One of the main causes why the Eastern Europe is underdeveloped regards the low level of social trust in institutions as well as relatively high levels of

¹ Ph.D Student, email: augustinignatov1@gmail.com
ORCID: 0000-0002-3422-2598

corruption. These factors diminish economic competitiveness, as well as, business strength since both external and internal investors are less willing to develop risky, yet profitable projects. Entrepreneurs within an unsecure business environment tend to minimize their expenses to become less exposed to uncertainties, while in a stable and transparent environment they invest more to gain more return and therefore increasing overall societal wealth. Therefore, it is necessary to raise awareness to protect businesses from excessive bureaucracy and corruption in order to determine higher economic activity. Moreover, the economic potential of the Eastern Europe is rather reduced especially due to modest level of technological development and innovation which are crucial in determining increased efficiency of entrepreneurial activities and of the business sector. Moreover, the countries lose the human capital potential which plays a catalysing role establishing more favourable economic environment due to massive emigration. These elements of socio-economic environment are key factors establishing countries' present and future competitiveness and economic structure.

The present study aims in this regard to analyse entrepreneurial competitiveness of the Eastern European countries, identifying the leading and lagging economies and, respectively, the evolution of the performance discrepancies. Particular objectives include: study of relevant theories and literature explaining the dependence of entrepreneurship on various socio-economic factors. In this regard, the study intends to develop an econometric model explaining the dependence of entrepreneurial competitiveness on these factors considering the context of the Eastern Europe. This model should be the main contribution of the paper and it is set to deepen the existing knowledge with empirical exemplification. Finally, the research aims to answer whether modest entrepreneurial competitiveness is determining reduced living standards in the referred region. The data sources used by the study comprises the Global Competitiveness Reports provided by the World Economic Forum as well as the World Bank's various indicators, various periods for raw data assessment. Nevertheless, the period considered for econometric analysis is strictly 2010-2017.

The study concludes that the least entrepreneurially competitive states in the Eastern Europe are the Republic of Moldova, as well as other nations of the Eastern Partnership. The business activity in these countries is weak and the determinants of entrepreneurship are underdeveloped, the situation reducing the nations' growth potential. Thus, a competitive entrepreneurial environment requires strong cooperation between the private and public sector to make more efficient networking in the economic clusters as to deliver most competitive products and services. In this regard, the main task of governing elites is to provide the business sector with efficient regulation, supportive policies and strategies as well as competitive and transparent services. This should aim reducing bureaucratic pressure, improving productivity, insuring stability of the macroeconomic environment. Since the business sector is the main component fostering growth, it needs to be backed to improve its capacity in accumulating industrial and human capital, know-how, business expertise, to allow them to efficiently compete for most favourable positions in global and regional supply chains.

LITERATURE REVIEW

Entrepreneurship is one of the fundamental components determining economic development since it alongside with labour force, land, and capital, and natural resources can generate profit. Entrepreneurship is closely linked to risk taking and engaging in innovation related activities, and certainly, it is a key determinant of nations' ability to compete for profit and welfare. Discussion of entrepreneurship was begun by the representatives of the Classical Political Economy who provided important theoretical background, yet, not comprehensive and specific. In this regard, it should be

underlined the role of Richard Cantillon, an early Irish-French economist, who was the first theoretician who introduced the word “entrepreneur” in its modern understanding, i.e. a risk bearer, in economics in the early 18th century. He defined entrepreneur as an agent who buys factors of production with the aim of reselling them at a higher price in a combined or not form (Cantillon, 1881 & Cantillon, 2010). According to Peter Drucker (1993), the father of modern business corporation and management science, the term “entrepreneur” was popularised by Jean-Baptiste Say around 1800, one of the most known pioneer economists and businessman of French origin, who said that “he shifts economic resources out of an area of lower and into an area of higher productivity and greater yield”. Say also attributed the following functions to entrepreneurs including coordination, organization and supervision which are key in the business activity. Entrepreneurship has been a concept of key importance in economics, the study of which started in the late 17th and early 18th centuries, yet, it has been rather ignored by theoreticians until the early 20th century. The interest in entrepreneurship increased only in the second half of the 20th century (Drucker, 2006 & 2014).

The concept of “entrepreneurship” in the Classical Political Economy was not comprehensively tackled. The theoreticians tended to define the people doing business only from the position of capital holders and skilled labour providers. The main framework of thought of this flow of ideas was orienting away from entrepreneurship. This evolutionary direction of economic thought could be clearly identified in the works of David Ricardo who prioritised land, labour and capital within the framework of rent, wages and profits. Ricardo, in a Malthusian style, mentions that wages and profits from capita will decline over time while rents will growth, economy diverting towards subsistence. Namely it was, some kind of economic gravitational force which was natural and impersonal. In these conditions, entrepreneurship is rather neglected and excluded. Ideas of Ricardo about entrepreneurs are more or less similar to those of Smith, Senior, Marx and Mill, other key representatives of the classical political economy (Ricketts, 2006). For instance, the labour theory of value of Smith, which was based on his “natural law”, rather concentrated on the role of labour for economic development rather than the production function plan based on which this labour is directed. However, it should be noted that Smith was less formal than Ricardo in establishing his economic model the fact which permit to implicitly accredit, at an incipient stage, a key role of entrepreneur for development (Ricketts, 2006). J. S. Mill (1848) developed further the concept of “risk taking” and linked it to entrepreneurship alongside with profits mentioning that “what a person expects to gain, who superintends the employment of his own capital, is always more, and generally much more, than this. The rate of profit greatly exceeds the rate of interest. The surplus is partly compensation for risk”. Despite the fact that Mill analysed entrepreneurship from the perspectives of profit and risk, he used the terms “entrepreneur” and “capitalist” as synonyms, which according to Joseph Schumpeter (Schumpeter, 1939, 1983) are not equivalent, risk associated with innovation is characteristic for entrepreneurs while that associated with profit is linked to capitalist.

The term “entrepreneur” in the framework of the Neo-Classical theory was developed by Menger (1871), Marshall (1890) and Jevons (1871). The fundament of the entrepreneurial analysis in this period was closely linked to the principles of the systematic and subjective marginal analysis, as Jevons underlined “value depends entirely upon utility” referring to marginal utility. Thus, economics was gravitating around the subjective value theory and marginal analysis as compared to the previous period when objective (labour) theory of value was the central point of reflection. As the priorities in economics shifted towards diminishing marginal utility, the views related to entrepreneurship revolved around individual maximising decisions based on the coordinating role of prices (Ricketts,

2006). At the same time, it should be underlined the contribution of Leon Walras, French mathematical economist and General equilibrium theorist, who mentioned that entrepreneurship occur in disequilibrium situations when individuals could benefit from the existing differences between competitive market prices and average costs of production (Jolink, 1996). It is also implied that technology is constant, and it the economy in equilibrium is providing zero-profit opportunities for entrepreneurs (Ebner, 2005 & Walker, 1986). Simultaneously, it should be distinguished, in the context of entrepreneurship, between firm as an organisation, a forth factor of production, and managerial capabilities which is closer denoting the capacity of building proper strategies of exercising efficient activities of the enterprise (Walker, 1986).

The modern ‘Austrian’ school in the context of neoclassical marginalism is the case which researched entrepreneurship in most relevance and it be distinguished from the neoclassical tradition. It reached such important achievements due to its methodological orientation which considered “individualism, subjectivism, the evolutionary nature of institutional change, and the importance of historical time in approaching economic development” (Ebner, 2005). Some of the most important representatives were Friedrich Hayek, Anglo-Austrian economist and Nobel Prize laureate, and Israel Kirzner, British-born American economist. According to Hayek (1937, 1978), entrepreneurship is a market process in which business people search for and implement new techniques and procedures to gain advantage from price differences. Kirzner (1973, 1999) developed the ideas established by Hayek, and introduced several new concepts including “spontaneous learning”, “alertness” and “entrepreneurial discovery”. While, the main focus of Neoclassical analysis (especially considering Marshall, 1890) concentrates on the conditions to necessary to sustain an equilibrium, Kirzner, one of the pioneers of the Neo-Austrian approach, concluded that at the beginning the economy is not in an equilibrium, this is reached as a result of the competition among “alert entrepreneurs” who are permanently searching for information and knowledge disequilibrium or “uncertainties” which are unevenly distributed across the market. Thus, entrepreneurs are attributed the “information-transforming” function which was earlier defended by Hayek (1948), since he transforms irregularities into opportunities. Entrepreneurs in the process of finding irregularities involve “spontaneous learning” empowered by “alertness”, i.e. receptiveness or preparedness to recognize possibilities of any kind, and the opportunity found is “entrepreneurial discovery”. Thus, entrepreneurs are forces of equilibrium balancing the economic system.

Joseph Schumpeter is one of the greatest economists of the first half of the 20th century. Schumpeter’s main contributions to economics are related to his comprehensive study of the concepts of innovation and entrepreneurship. In his views, entrepreneur is the revolutionary innovator capable of introducing new processes, products allowing the economy to be dynamic and evolutionary. Schumpeter mentions that an entrepreneur is someone who could revolutionise production by implementing an invention, or technology. He was the first theoretician who divided the process of innovation in five steps which lead to the economic development: launch of a new product/service; application of new methods of production or sales of a product; opening of a new market; acquiring of new sources of supply and new industry structure (Śledzik, 2013). Schumpeter considered that innovation is a driver of competitiveness and the core of change causing "creative destruction" which is defined as "process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one" (Schumpeter, 1994). In the views of Schumpeter’s first theory of entrepreneurship, entrepreneurs generate new opportunities for investment, development and employment through their implementation of

innovations in the economy. Invention in his views is less important than diffusion and imitation which have larger impact on the economic development (Śledzik, 2013). Schumpeter (1983) linked entrepreneurs to innovation on the basis of their functional interrelation. In this regard, the entrepreneur is a pioneer capable to act in unknown conditions and circumstances to the benefit of the individual interests "act with confidence beyond the range of familiar beacons", "his characteristic task – theoretically as well as historically – consists precisely in breaking up old, and creating new, tradition". Schumpeterian entrepreneur is determined to act by three key motivations including: the desire to create "own kingdom"; the desire for gain; the joy of creation (Śledzik, 2013). The second theory of entrepreneurship developed by Schumpeter underlines that much smaller role of entrepreneurs for economic development than proper innovation being less individualised (Schumpeter, 1939 and 1994). According to Śledzik (2013) depersonalisation "is a radical departure from his earlier recognition entrepreneur as an outstanding individualist" which in general received less attention due to larger concentration historical analysis methodology.

William Jack Baumol, remarkable Neo-Keynesian economist, mentioned in an article published in 1968 that the functions of the entrepreneur are to identify new ideas, opportunities and locate them, and put those ideas to use to generate profit and economic advantage. Baumol's entrepreneur is closely linked to the Schumpeterian one who should have leadership and initiative promoting economic growth. He underlines (1968, 1990) that the entrepreneurship is hard to be explained through formalised analysis and mathematical models due to the fact that charisma and inventiveness, perseverance, key characteristics of entrepreneurs, could not be quantified. The neoclassical model is not able to comprehensively tackle the issue of entrepreneurship since it could not be effectively fitted in formalised into a specific function. He does not criticise in any sense the neoclassical model, yet highlights that there is space for improvement. Uncertainty and unpredictability and closely linked to entrepreneurship since there are many variables linked to it. According to Baumol (1990) entrepreneurs are not always performing a productive task for society leading to economic development since they are the "persons who are ingenious or creative in finding ways to add to their wealth, power, or prestige" which not necessarily presuppose benefit for the society. For instance, in an unfavourable environment, entrepreneurs may search for tax-loopholes, or engaging in warfare. Thus, institutions and the environment is also determinative in motivating entrepreneurs in following one or another goal. Certainly, Baumol's main contribution to entrepreneurship is linked to understanding its qualitative aspects.

Certainly, entrepreneurship is linked to uncertainty. One of the most known economist researching this relation was Frank Knight, adept of the Chicago School of Economics tradition, who published in 1921 the work "Risk, Uncertainty and Profit". He starts from analysing the Walras' situation of economic equilibrium when not profit can be reported by entrepreneur, thus, it is inferred that profits are linked to economic disequilibrium which could be viewed in the form of an unexpected change. For Knight, profit is rather associated to uncertainty rather than risk. According to Ricketts (2006) an uncertainty is "an uncertain situation was one in which probabilities could not be assigned to outcomes so that decision making was impossible to model in terms of neoclassical optimization". In a world of uncertainty, there could be situations in which it could be reported either pure profits or losses, thus presupposing residual income different of the contractual one. In this circumstances, Knight analyses the entrepreneur from the perspective of pure profit and a residual income seeker. Entrepreneurs are distinct from capitalist since their main asset is judgement, the fact which could explain modern venture capital or the relation between money-seekers and investors. Nevertheless,

the relation between these economic agents is very close, unless the ideal cases are considered. Carter et al (1994) pointed that there ventures capitalism is the form of capitalism which best describes the relations between entrepreneurs and capital, talent or abilities of people and one of the fundament of economics i.e. capital.

Other researchers studied the relation between entrepreneurship and economic efficiency. Thus, according to Casson (1982), who extended the ideas of Knight, entrepreneurs coordinate the allocation of scarce resources in the search of pure profit. A dynamic economy provides permanent opportunities, thus, the situation of equilibrium could not be reached, hence, entrepreneur has an intermediary function or “market maker” who exploits the differences in the marginal valuation of goods and services. Casson (2001) underlined the key role of cultural environment which determines the role and behaviour of entrepreneurs as well as of firms. Neoclassical focus on the pure individualism which is socially unrelated to other firms is not corresponding to the real economy, yet, most of the processes could be explained by predicted opportunism. Entrepreneur is the generator of dynamics in firms identifying and exploiting opportunities through improving the transaction costs, information flows, associations and leadership. Gary Becker, another representative of Chicago School of Economics and a Nobel Prize laureate, was a pioneer of applying economic analysis to human behaviour in such areas as discrimination, marriage, family relations, and education, areas which were previously considered as areas of sociology. In his work of 1993, Becker underlined that linked entrepreneurship to human capital creation based on rational benefits, cultural environment, and investments. Investments in the human capital include educational, health care and skills training as well as other factors. He focused on identifying the costs and returns of investments in the human capital, and the private and social gains of individuals.

Wennekers & Thurik (1999) linked entrepreneurship to economic development “entrepreneurship matters. In modern open economies it is more important for economic growth than it has ever been”. Globalisation and ICT revolution caused the massive disequilibrium which requires change and reallocation of resources which, in turn, demands strong entrepreneurial capacities. Entrepreneurship is capable of being identified both at individual, firm and macro levels, in the following dimensions: conditions for entrepreneurship, key elements and impact, an important challenge often met by previous theoreticians. Thus, entrepreneurial capacities at the individual level are expresses through psychological endowments key elements being attitudes, skills and actions, while the impact is self-realization and personal wealth. At the firm level, conditions for entrepreneurship are culture, institutions, business opportunities, elements being innovation, new entries and new markets, the impact resuming to firms’ performance. At the macro-level, key conditions are culture and institutions, elements are identified through variety, competition and selection, while impact results in competitiveness and economic growth. Stevenson & Jarillo (2007) as well as Suddaby et al (2015) have concluded that a competitive and business oriented economy should meet the following conditions including: open-mindedness, acceptance of risk, long term orientation, opportunities and favourable institutions providing incentives. Jones (1975) underlined that economic growth could not appear without the intermediation of entrepreneurship which is responsible for connecting demand and supply. Moreover, entrepreneurs are responsible for the creation of new markets, as well as introducing innovation which is responsible for technological advancement. Shane and Venkataraman (2000) as well as Stevenson & Harmeling (1990) say that the discovery of entrepreneurial opportunities as well as the decision to exploit entrepreneurial

opportunities are generated by the initiative of individuals driven by the intention to obtain economic advantage, which is the payment of the market for the entrepreneur for his intermediation function.

It is important to understand the psychological fundament of entrepreneurship. Espiritu-Olmos and Sastre-Castillo (2015) concluded that there is a strong relation between personal traits and entrepreneurship, some of the most important being internal control, need for achievement, kindness, tolerance of ambiguity, tolerance for risk and extroversion. Namely the persons having these characteristics are more likely to undertake business activities. McClelland & Burnham (2008) highlight that entrepreneurship, in order to be successful, needs to be established on effective management characterised by consistent sense of responsibility, organizational clarity and efficient team spirit. Namely, managers are the successful entrepreneurs who stabilise and exploit business opportunities favouring societal and economic development. They sacrifice self-interest for the welfare of the organization and its operational and strategic purposes. Reynolds (1992) underlines that entrepreneurship has an important role for socio-economic development and by permitting individuals to benefit from their intermediation function realising their potential and competences connecting people and satisfying their needs. It should be considered also that entrepreneurial success presupposes trust among market participants since it is the fundament for building long run relations (Rotter, 1967). Goethner et al (2012) point that entrepreneurship at the level of psychology is influenced by the following determinants including social norms, accepted attitudes, on which the human and social capital is based, as well as expected benefits from performing activities.

METHODOLOGY

The dependent variable reflecting entrepreneurial competitiveness of the Eastern European countries is new business density (new registrations per 1,000 people ages 15-64). New business density (hereafter NBD) directly shows the number of new registered firms within the economy, higher rates of this indicator marking that the business environment is favourable and the competition among entrepreneurs is growing. Favourable dynamics of NBD show that the economy is healthy it assuring enough opportunities for the business sector. Growing business density is a sign of stronger and increasing business competitiveness as new companies enter the market, the economy enhancing its growth potential. The present research has chosen 9 independent variables which will complete the analysis of entrepreneurial competitiveness of the Eastern European countries. First independent variable determining the strength of the business sector is the market size (hereafter MS). The larger is the market the higher are the domestic business opportunities, thus, larger economies can develop more complex and advanced entrepreneurship due to wider resources and opportunities availability. Another determinant of entrepreneurial competitiveness is higher education and training (hereafter HT) which influences the availability of the human capital within the economy assuring it with necessary skills, abilities and knowledge. The goods market efficiency (GME) is further considered which shows the efficiency of the allocation of each factor of production, thus, determining businesses to produce and sell at lowest prices. It also defines the efficiency of market competition and characterises the rapidity to which information influence the prices. Another determinant is labour market efficiency (LME) defining the level to which workers can find the right jobs for their available training and knowledge. It also determines the overall impact of existing incentives both for employers and workers to develop human capital and report the highest productivity. Simultaneously, labour market efficiency marks the level of its flexibility pointing the easiness to

which to individuals could shift from inefficient firms and orient towards more profitable ones. Financial market development (FMD) is further analysed. FMD is a key component of the economic systems, acting as a platform enabling the allocation of financial resources toward most profitable and productive areas of economic activity. It defines, therefore, the efficiency of intermediation, having proper depth and breadth, providing a wide range of financial instruments to fund business activities, reduce risks, provide investments, assuring the economy with necessary liquidities fostering entrepreneurial activities. The sixth factor is the overall macroeconomic environment (ME) which determines the trends in income, inflationary patterns, employment, spending priorities, monetary and fiscal policies. It characterises the extent to which governmental macroeconomic policies stimulate the activity of the private sector. The seventh factor acting as an entrepreneurial performance enhancer is innovation (IN) which fosters competition and its complexity. The proper innovation capacity of the nations defines the existing intensity of investments and efficiency in the research and development of new technologies, products, processes driving economic development and progress. The eighth factor acting as a business competition amplifier and stimulating its complexity growth is business sophistication (BS). It is a sign of an innovation-driven economy marking the efficiency of business networks, as well as, it shows the quality of operations and strategies of the existing business environment. Finally, it is considered log GDP per capita (Inc.) marking the overall income of the population and the overall wealth of the country which certainly determines the strength of the business sector and, respective, entrepreneurial competitiveness level. Afterwards, it is calculated the descriptive statistics of the dataset. The summary statistics will permit to better understand the data sample and form a basis of the initial description. Afterwards, it is analysed the Pearson's correlation coefficients among the variables to show the extent to which the indicators are linearly associated. To identify the extent to which the model build is relevant, a multi-linear regression analysis is performed between the NBD, which is the dependent variable, and the examined independent variables i.e. MS, HT, GME, LME, FMD, ME, IN, BS and Log GDP. The Kaiser-Meyer-Olkin test is performed to analyse the proportion of variance in the variables that might be determined by underlying factors as well as Bartlett's test of sphericity to prove that the variables are unrelated and therefore unsuitable for structure detection. In this way, it can be identified where the dataset is adequate and the regressions are relevant. It is important to underline that the econometric analyses considered the period of 2010-2018 for all calculations.

The present study has the following research hypotheses: first, the entrepreneurial competitiveness of the Eastern European countries is directly linked to all selected determinants. Secondly, more competitive states in terms of entrepreneurship are more developed. Thirdly, the EU integrated Eastern European states are more advanced in terms entrepreneurial competitiveness as compared to the rest of the nations. Finally, the Republic of Moldova is the Eastern European nations with the least competitive entrepreneurship and business.

RESULTS

A core component of entrepreneurial competitiveness is the availability of entrepreneurs, self-driven individuals which act as intermediaries leading economy towards steady equilibrium. Based on the information provided in table 1, it can be underlined that the Republic of Moldova is the fifth least competitive country in the region in terms of creation of new business entities. The results reached equal 1.82 enterprises per 1000 people or 182 new enterprises per 100 000 people. This rate is higher than in Armenia, Ukraine, Azerbaijan. Nevertheless, generation of entrepreneurial force in

the Republic of Moldova is much less active as compared to Estonia, Bulgaria or Georgia, nations in which are created 21.01, 10.92 and respectively 8.93 enterprises to 1000 people, while in the neighbouring country i.e. Romania this rate reaches 5.64. It should be underlined that the dynamics of new registrations in the Republic of Moldova is decreasing the fact which underlines the idea that the business environment is discouraged by weak institutional and regulatory framework as well as by high rates of emigration. Thus, it can be observed that the Republic of Moldova at the beginning of the researched period had levels similar to Georgia, the Czech Republic, and Lithuania, yet, government ineffectiveness, lack of proper reforms and unfavourable business environment demotivated population, the rate of new business registrations decreasing in dynamics.

Table 1. New business density, new registrations per 1,000 people ages 15-64

	2006	2007	2010	2011	2012	2013	2014	2015	2016	2017
Estonia	13.13	12.69	12.93	16.52	16.93	18.04	17.51	18.95	20.76	21.01
Bulgaria	7.22	7.44	6.47	7.98	9.03	8.96	8.96	9.84	10.89	10.92
Georgia	2.07	2.67	3.75	4.59	4.89	5.85	5.80	7.22	8.37	8.93
Latvia	7.21	7.73	7.88	12.18	11.63	11.45	10.55	9.66	8.04	7.57
Romania	6.16	6.80	3.45	4.39	4.12	4.33	4.07	4.84	5.61	5.64
Czech R.	2.24	2.85	3.03	2.89	2.96	3.09	3.42	3.70	3.98	4.23
Slovakia	3.48	4.11	4.45	4.86	5.11	5.59	3.10	2.71	4.70	3.13
Hungary	3.17	3.95	6.45	7.64	4.75	4.18	3.66	3.16	3.38	2.70
Lithuania	2.28	2.83	2.86	3.71	5.31	3.94	4.19	3.19	3.33	2.58
Poland	0.49	0.51	0.66	0.70	0.90	1.10	1.13	1.52	1.66	1.85
Moldova	2.07	2.38	1.61	1.75	1.73	1.75	1.92	1.80	1.75	1.82
Armenia	1.23	1.63	1.24	1.30	1.54	1.54	1.55	1.72	1.74	1.79
Ukraine	0.95	1.17	0.98	1.07	0.92	1.10	1.05	1.21	1.54	1.57
Azer.	0.60	0.90	0.55	0.63	0.69	1.05	0.98	0.75	1.03	1.01

Source: The World Bank Group, New business density, retrieved from data.worldbank.org on January, 22nd, 2019

Another important determinant of entrepreneurial competitiveness is market size on which business activate since it is directly linked to the number of available opportunities within the economy. Based on the information provided in table 2, it can be highlighted that the Republic of Moldova is the smallest market in the region registering the lowest score and one of the smallest in the world being ranked on 120th position. Similar sizes of the domestic market are characteristic for Armenia, Georgia and Estonia. The strongest market in the region is Poland, being 21st largest in the world, followed by Romania, the Czech Republic and Ukraine. The Republic of Moldova is located between two of the largest markets in the region the fact which reduces its potential in attracting investments since larger markets can be advantageous because of the economies of scale, thus, being more profitable. In this regard, the Republic of Moldova is less competitive for undertaking business activities as its small domestic market provides fewer opportunities as compared to the larger markets which can create substantially bigger incentives for generating and developing new activities and ideas. In the conditions when the country registers weak institutions and market mechanisms, one of the least efficient in the region, small market reduces entrepreneurial performance of the Republic of Moldova and, therefore, economic development.

Table 2. Competitiveness of countries in terms of market size, 2010/11-2017/18, rank and score

	10/11	10/11	12/13	12/13	14/15	14/15	16/17	16/17	17/18	17/18
Poland	21	5.08	19	5.12	19	5.12	21	5.13	21	5.17
Romania	43	4.41	43	4.41	45	4.44	42	4.53	41	4.61
Czech R.	42	4.47	40	4.51	42	4.49	46	4.43	46	4.49
Ukraine	38	4.53	38	4.60	38	4.58	47	4.40	47	4.49
Hungary	49	4.27	52	4.25	53	4.26	53	4.27	55	4.33
Slovakia	58	3.97	59	4.00	58	4.03	61	3.99	61	4.08
Azer.	76	3.46	76	3.51	72	3.66	63	3.89	63	3.97
Bulgaria	63	3.79	62	3.82	63	3.87	65	3.85	65	3.92
Lithuania	77	3.45	74	3.53	77	3.60	77	3.53	78	3.62
Latvia	95	3.04	91	3.11	95	3.20	96	3.15	92	3.24
Estonia	101	2.89	96	2.98	100	3.07	100	3.00	98	3.10
Georgia	107	2.80	99	2.87	103	2.98	101	3.00	100	3.09
Armenia	116	2.50	115	2.62	118	2.75	120	2.68	115	2.79
Moldova	121	2.40	121	2.51	124	2.60	124	2.56	120	2.68

Source: World Economic Forum, The Global Competitiveness Report, editions 2010/11-2017/18, retrieved from www.weforum.org on January, 22nd, 2019

Another important dimension of entrepreneurial competitiveness serving as a fundament is competitiveness of higher education and training. Based on the information provided in table 3, it can be underlined that the Republic of Moldova is one of the least competitive countries in the region alongside with Georgia. Despite the fact that the score reported has increased within the period of 2010/11-2017/18, the ranking of the country has diminished, the fact underlining the idea that the world's dynamics, in general, has been more favourable. This situation demonstrates that the Republic of Moldova is meeting important challenge in terms of human capital availability which is a core component of the entrepreneurial competitiveness. The declining dynamics suggest that the state is not sufficiently investing into consolidating and enhancing the efficiency of the human capital the fact which reduce the economic potential of the nation through diminishing the fundament for productivity growth. The economic environment persisting in the Republic of Moldova is not demanding qualified individuals since both the private and public sector is allocating few investments. It can be underlined that in the Eastern Europe there are significant discrepancies in terms of higher education and training, Estonia, the Czech Republic, Lithuania as well as Ukraine being the leading forces which have the potential of attracting business investments both domestic and foreign requiring high quality human capital.

Table 3. Competitiveness of countries in terms of higher education and training, 2010/11-2017/18, rank and score

	10/11	10/11	12/13	12/13	14/15	14/15	16/17	16/17	17/18	17/18
Estonia	22	5.17	25	5.17	20	5.49	18	5.54	19	5.52
Czech R.	24	5.11	38	4.87	35	5.02	27	5.20	27	5.25
Lithuania	25	5.07	26	5.15	26	5.30	26	5.25	29	5.16

Ukraine	46	4.61	47	4.70	40	4.93	33	5.08	35	5.09
Poland	26	5.00	36	4.92	34	5.04	37	5.03	40	4.98
Latvia	35	4.81	42	4.78	31	5.13	39	5.01	42	4.95
Bulgaria	67	4.14	63	4.31	63	4.49	56	4.64	54	4.62
Slovakia	53	4.49	54	4.50	56	4.65	61	4.54	62	4.54
Azer.	77	3.96	89	3.91	90	3.90	78	4.16	68	4.46
Armenia	91	3.66	70	4.22	75	4.20	71	4.38	69	4.42
Romania	54	4.47	59	4.36	58	4.63	67	4.45	70	4.41
Hungary	34	4.81	49	4.67	52	4.68	72	4.36	73	4.33
Moldova	78	3.95	88	3.96	84	4.08	91	4.04	83	4.09
Georgia	90	3.74	93	3.82	92	3.89	89	4.06	87	4.02

Source: World Economic Forum, The Global Competitiveness Report, editions 2010/11-2017/18, retrieved from www.weforum.org on January, 22nd, 2019

Table 4 offers information regarding the competitiveness of the Eastern European nations in terms of goods market efficiency. As it can be observed, the Republic of Moldova is the second least competitive country in the region, following Ukraine, ranking 97th globally. It should be underlined that this performance has consistently increased during the research period. This fact underlines the idea that the intensity of local competition in the country is much lower as compared to the rest of the nations, the market being exposed to the risk of domination of just few companies, thus, it can be concluded that anti-monopoly policy in the Republic of Moldova is inefficient. This fact acts a serious impediment for entrepreneurial competitiveness, unfair competition raising the risk and minimising the profit opportunities for new comers or for those not benefiting from political protection. The business environment in the Republic of Moldova is one of the most restrictive in the Eastern Europe imposing unfavourable conditions in terms of taxation, business operation procedures, and customs regulation. The states such as Estonia, Azerbaijan, Armenia, the Czech Republic and Lithuania are the most favourable in terms of goods market efficiency, registering much higher performances than Romania, Bulgaria and Hungary, besides and Ukraine and the Republic of Moldova. In these conditions, the market of Moldova tends to be not competitive in promoting both local and foreign investments the situation reducing its capability to grow.

Table 4. Competitiveness of countries in terms of goods market efficiency, 2010/11-2017/18, rank and score

	10/11	10/11	12/13	12/13	14/15	14/15	16/17	16/17	17/18	17/18
Estonia	29	4.71	31	4.73	26	4.89	20	5.06	21	5.09
Azer.	93	3.92	60	4.31	72	4.31	50	4.49	31	4.80
Armenia	113	3.72	72	4.22	64	4.37	45	4.59	35	4.70
Czech R.	35	4.58	41	4.53	50	4.53	36	4.67	38	4.66
Lithuania	73	4.12	56	4.36	47	4.57	39	4.64	44	4.57
Poland	45	4.38	51	4.39	51	4.49	47	4.57	45	4.55
Georgia	64	4.18	82	4.18	60	4.40	46	4.57	50	4.51
Slovakia	51	4.34	54	4.37	66	4.36	53	4.45	55	4.48
Latvia	72	4.13	47	4.42	36	4.67	49	4.52	59	4.42

Hungary	67	4.16	67	4.28	65	4.36	59	4.40	64	4.38
Bulgaria	82	4.00	83	4.17	63	4.37	57	4.41	69	4.32
Romania	76	4.08	113	3.86	89	4.18	80	4.22	92	4.14
Moldova	104	3.83	100	3.98	103	4.07	107	3.99	97	4.06
Ukraine	129	3.53	117	3.82	112	3.99	108	3.98	101	4.04

Source: World Economic Forum, The Global Competitiveness Report, editions 2010/11-2017/18, retrieved from www.weforum.org on January, 22nd, 2019

Another important aspect of competitive entrepreneurial environment is the presence of efficient labour market. As it can be remarked in table 5, the Republic of Moldova is the country with the lowest performance in terms of labour market efficiency in the region, ranking 94th globally. The dynamics consistently declined within 2010/11-2017/18, during this period the country has lost 26 positions. This situation characterises unfavourable evolution of the productivity of human capital, less harmony being registered between workers and employers. The labour market in the Republic of Moldova is less flexible in allocating the human resources to most productive sectors. In this regard, it should be mentioned that the country’s labour market is overregulated, the promoted employment protection policies being detrimental to fostering the shifts towards more productive industries, thus, the state losing potential gains from higher productivity. Rigid labour markets as it the case of Moldova decrease the ability of the country to concentrate production capacities to emerging and dynamic sectors fostering the workforce’s capability to meet the requirements of the new high-tech sectors. The leading force in the Eastern Europe in terms of labour markets efficiency is Estonia, followed by Azerbaijan, the Czech Republic and Latvia. It should be noted that similar to Moldova countries i.e. Armenia and Georgia register also high levels of competitiveness in this area.

Table 5. Competitiveness of countries in terms of labour market efficiency, 2010/11-2017/18, rank and score

	10/11	10/11	12/13	12/13	14/15	14/15	16/17	16/17	17/18	17/18
Estonia	17	4.91	10	5.11	11	5.02	15	5.03	15	5.02
Azerbaijan	25	4.82	26	4.80	33	4.59	26	4.77	17	5.01
Czech R.	33	4.75	75	4.32	62	4.26	44	4.50	41	4.49
Latvia	52	4.58	27	4.78	17	4.82	34	4.57	43	4.47
Armenia	47	4.61	30	4.72	74	4.20	55	4.40	51	4.40
Georgia	31	4.75	35	4.67	41	4.49	43	4.51	53	4.39
Lithuania	48	4.61	65	4.41	53	4.33	59	4.37	61	4.33
Bulgaria	58	4.51	49	4.54	67	4.24	54	4.40	67	4.25
Hungary	62	4.46	79	4.27	75	4.17	80	4.13	71	4.21
Poland	53	4.58	57	4.48	79	4.14	79	4.13	78	4.14
Ukraine	54	4.54	62	4.44	80	4.12	73	4.23	86	4.01
Slovakia	40	4.66	86	4.20	97	3.95	93	3.98	87	4.01
Romania	76	4.32	104	4.01	90	4.04	88	4.04	89	3.97
Moldova	68	4.41	81	4.26	82	4.11	91	3.99	94	3.94

Source: World Economic Forum, The Global Competitiveness Report, editions 2010/11-2017/18, retrieved from www.weforum.org on January, 22nd, 2019

Competitive entrepreneurial environments are based on efficient financial markets which insure effective transfer of financial resources to most productive sectors. As it can be remarked in table 6, the Republic of Moldova is the Eastern European country with the least efficient financial intermediation in the region ranking 124th globally. During 2010/11-2017/18 the performance of the state has considerably diminished, 21 positions being lost. These modest results reflect unfavourable mechanisms of establishing prices which do not consider all available public information. Also, they demonstrate that the Republic of Moldova register consistent irregularities on various markets which considerably increase the risks for entrepreneurs. At the same time, they demonstrate serious impediments in directing savings towards most profitable investments areas. Moreover, the modest performance is determined by reduced credit liquidity, equity transfers, insurance activity, and little availability of other financial products, situation raising operational risks for the business. Countries with similar results as those of the Republic of Moldova are Ukraine, and at a longer distance, Romania, Azerbaijan, and Armenia. Thus, one of the key pillars of efficient entrepreneurial environment i.e. availability of productive financial intermediation mechanisms is weakly represented in the Republic of Moldova. The business sector in this regard is less competitive as compared to the leading forces of the region including Estonia, the Czech Republic, Slovakia, Hungary and Poland.

Table 6. Competitiveness of countries in terms of financial market development, 2010/11-2017/18, rank and score

	10/11	10/11	12/13	12/13	14/15	14/15	16/17	16/17	17/18	17/18
Estonia	45	4.50	39	4.51	29	4.67	22	4.82	22	4.85
Czech R.	48	4.49	57	4.25	44	4.45	27	4.74	23	4.80
Slovakia	37	4.61	48	4.45	39	4.50	33	4.56	32	4.55
Hungary	68	4.16	72	4.05	73	3.93	70	3.97	45	4.31
Poland	32	4.66	37	4.59	35	4.60	46	4.24	53	4.17
Bulgaria	91	3.95	80	3.97	60	4.17	59	4.14	58	4.14
Lithuania	89	3.95	87	3.86	65	4.09	60	4.13	59	4.10
Georgia	108	3.62	93	3.79	76	3.90	58	4.16	63	4.06
Latvia	86	3.98	52	4.40	33	4.63	52	4.19	64	4.05
Armenia	110	3.60	78	3.97	97	3.71	90	3.68	78	3.88
Azer.	71	4.12	98	3.73	89	3.77	97	3.55	79	3.84
Romania	81	4.01	77	3.98	64	4.12	86	3.73	88	3.74
Ukraine	119	3.31	114	3.52	107	3.54	130	2.95	120	3.11
Moldova	103	3.68	104	3.65	100	3.70	129	2.96	124	3.08

Source: World Economic Forum, The Global Competitiveness Report, editions 2010/11-2017/18, retrieved from www.weforum.org on January, 22nd, 2019

Stability of the macroeconomic environment not necessarily promotes direct economic development, yet, it is an imminent condition to motivate business people to foster their activity by raising investments in the sectors with the highest productivity. The Republic of Moldova registers one of the lowest macroeconomic performances in the region, slightly higher than in Ukraine and Armenia, ranking 81st globally. It should be observed that the result recorded are evolving positively in dynamics, nevertheless, they are still modest to as compared to 2014/15 (table 7). The modest

results registered by the Republic of Moldova demonstrate that its economic environment tends to be rather fluctuating in terms of fiscal policy and inflation, situation which negatively affects capital accumulation and productivity growth within the economy. It is important to remark that volatile economic environment increase the business risks and the associated costs, factors which raise the costs of incurring debt. In these circumstances, entrepreneurial competitiveness is diminished since it is minimised the willingness of firms and banks to expand activities. It should be remarked that the Czech Republic is one of the leading economies on the planet in terms of macroeconomic environment being ranked the 8th in this regard. At the same time, leading regional economies are Estonia, Latvia, Bulgaria and Lithuania. From these perspective, the macroeconomic environment in the Republic of Moldova is rather not attractive for both domestic and foreign investors, modest scoring decreasing the willingness of entrepreneurs in expanding their activities.

Table 7. Competitiveness of countries in terms of macroeconomic environment, 2010/11-2017/18, rank and score

	10/11	10/11	12/13	12/13	14/15	14/15	16/17	16/17	17/18	17/18
Czech R.	48	4.90	42	5.19	40	5.37	19	5.89	8	6.23
Estonia	19	5.40	20	6.01	20	6.00	12	6.13	15	6.07
Latvia	84	4.47	46	5.06	32	5.52	24	5.56	23	5.77
Bulgaria	42	5.00	31	5.42	36	5.45	42	5.21	25	5.72
Lithuania	71	4.56	75	4.57	42	5.35	34	5.44	29	5.61
Slovakia	32	5.20	54	4.87	45	5.23	37	5.28	35	5.40
Romania	78	4.50	58	4.83	46	5.20	28	5.53	38	5.25
Poland	61	4.70	72	4.60	63	4.77	45	5.14	41	5.20
Hungary	69	4.59	44	5.15	61	4.78	47	5.12	46	5.13
Georgia	130	3.26	88	4.40	48	5.14	40	5.24	48	5.10
Azerbaijan	13	5.62	18	6.05	9	6.41	39	5.24	65	4.80
Moldova	90	4.31	93	4.35	56	4.91	100	4.14	81	4.53
Armenia	99	4.23	83	4.50	77	4.62	88	4.31	101	4.13
Ukraine	132	3.20	90	4.40	105	4.14	128	3.17	121	3.52

Source: World Economic Forum, The Global Competitiveness Report, editions 2010/11-2017/18, retrieved from www.weforum.org on January, 22nd, 2019

Despite of the fact that the Republic of Moldova has a relatively high level of technological readiness, the innovation performance of both the private and public sector is reduced, the country being positioned on the last place in the region and on 128th in the world. This fact underlines the idea that the state does not provide a sufficiently efficient free market with enough players and effective competition capable of motivating business sector to invest more funds into research and development to gain competitive advantages. It can be underlined that throughout the years the score and ranking of the Republic of Moldova have remained the same the situation underling the lack of governmental involvement in promoting efficient policies in this area. Georgia and Romania are the next weakest innovators in the Eastern Europe. It should be highlighted that Ukraine registers relatively high performance, this fact being justified by its wide industrial soviet inheritance which put the basis for present technological fundament. Estonia, Azerbaijan and the Czech Republic are the nations with the highest innovation efficiency in the region being ranked 30th, 33rd, and 36th globally (table 8). In

this conditions, the chances that the Republic of Moldova will develop an entrepreneurial environment oriented towards innovation are reduced since neither the government nor the private sector pay sufficient attention in terms of motivating determinants and investments.

Table 8. Competitiveness of countries in terms of innovation, 2010/11-2017/18, rank and score

	10/11	10/11	12/13	12/13	14/15	14/15	16/17	16/17	17/18	17/18
Estonia	37	3.68	30	3.93	30	3.95	28	4.05	30	4.04
Azerbaijan	61	3.16	46	3.45	59	3.33	44	3.63	33	4.00
Czech R.	27	3.92	34	3.81	39	3.67	37	3.78	36	3.87
Lithuania	51	3.38	43	3.51	44	3.62	39	3.75	41	3.73
Poland	54	3.31	63	3.25	72	3.26	60	3.39	59	3.40
Ukraine	63	3.11	71	3.16	81	3.16	52	3.44	61	3.37
Hungary	41	3.55	37	3.61	50	3.50	80	3.24	62	3.36
Slovakia	85	2.95	89	2.98	78	3.18	68	3.32	67	3.33
Bulgaria	92	2.91	92	2.98	105	2.94	65	3.36	68	3.32
Armenia	116	2.63	105	2.89	104	2.95	87	3.20	70	3.31
Latvia	77	3.02	64	3.25	70	3.27	64	3.36	83	3.22
Romania	87	2.94	102	2.92	66	3.28	93	3.14	96	3.08
Georgia	125	2.51	126	2.60	121	2.71	116	2.85	118	2.79
Moldova	129	2.49	135	2.40	131	2.53	133	2.51	128	2.64

Source: World Economic Forum, The Global Competitiveness Report, editions 2010/11-2017/18, retrieved from www.weforum.org on January, 22nd, 2019

The business sector in the Republic of Moldova has a basic development level registering the lowest sophistication and complexity in the Eastern Europe, and one of the lowest in the world since the country is ranked 120th globally. It should be underlined that the performance has significantly diminished within the period of 2010/11-2017/18, the country losing 7 positions despite of increasing scoring (table 9). This fact underlines the idea that the country is stagnating in the area of entrepreneurial competitiveness since the complexity of the business activities remain reduced. Accordingly, productivity and the value added generated is also reduced the situation causing minimisation of the growth potential and development. Business activity in the country is elementary this situation persisting in dynamics. This situation marks the insufficient governmental efforts in promoting efficient market mechanisms and competition capable of improving the complexity of the entrepreneurial activities. Business sector is not motivated in developing its capacities as the entrepreneurial environment is overregulated, and suppressed by extractive intervention of bureaucracy in its activities. Low business sophistication causes reduced entrepreneurial competitiveness, the authorities not undertaking any significant step towards improving the situation. The most competitive countries in this area are the Czech Republic, Azerbaijan, Estonia and Lithuania. At the same time, Ukraine, as a neighbouring country to Moldova, registers higher results, while Romania records a performance similar ours.

Table 9. Competitiveness of countries in terms of business sophistication, 2010/11-2017/18, rank and score

	10/11	10/11	12/13	12/13	14/15	14/15	16/17	16/17	17/18	17/18
Czech R.	34	4.47	35	4.45	35	4.46	32	4.49	30	4.61
Azerbaijan	72	3.84	69	3.91	80	3.86	60	4.02	40	4.44
Estonia	56	4.13	51	4.20	48	4.32	44	4.26	45	4.36
Lithuania	49	4.21	56	4.16	49	4.31	42	4.28	46	4.35
Slovakia	57	4.12	61	4.02	65	4.00	55	4.10	54	4.19
Poland	50	4.20	60	4.06	63	4.06	54	4.10	57	4.11
Latvia	80	3.73	71	3.89	61	4.09	58	4.06	62	4.07
Armenia	109	3.33	92	3.70	93	3.73	81	3.75	68	3.99
Bulgaria	95	3.52	97	3.62	105	3.61	79	3.78	79	3.82
Ukraine	100	3.48	91	3.70	99	3.66	98	3.62	90	3.72
Hungary	69	3.87	86	3.74	92	3.75	113	3.47	96	3.68
Georgia	111	3.29	113	3.40	113	3.49	102	3.60	99	3.67
Romania	93	3.55	110	3.47	90	3.77	104	3.56	116	3.47
Moldova	113	3.28	120	3.30	124	3.35	127	3.20	120	3.36

Source: World Economic Forum, The Global Competitiveness Report, editions 2010/11-2017/18, retrieved from www.weforum.org on January, 22nd, 2019

Table 10 provides information regarding the descriptive statistics of the dataset including market size (MS), higher education and training (HT), goods market efficiency (GME), labour market efficiency (LME), financial market development (FMD), macroeconomic environment (ME), innovation (IN), business sophistication (BS), Log GDP per capita (Inc.) and new business density (NBD). As it can be observed, on overall, the Eastern Europe has stronger positions in terms of macroeconomic environment as well as higher education and training. The data is more spread out in the following areas including the market size and macroeconomic environment, as well as income, yet the highest spread is in terms of new business density.

Table 10. Descriptive statistics of the dataset

	MS	HT	GME	LME	FMD	ME	IN	BS	Inc.	NBD
Mean	3.74	4.60	4.33	4.42	4.03	5.01	3.24	3.86	9.73	4.99
Standard Error	0.07	0.04	0.03	0.03	0.04	0.06	0.04	0.03	0.06	0.44
Median	3.84	4.61	4.36	4.41	3.99	5.03	3.25	3.84	9.94	3.56
Standard Deviation	0.77	0.47	0.29	0.29	0.43	0.68	0.41	0.35	0.59	4.65
Sample Variance	0.59	0.22	0.09	0.09	0.18	0.47	0.16	0.12	0.34	21.63
Kurtosis	-1.10	-1.01	0.21	-0.57	-0.25	0.51	-0.52	-0.94	-0.46	2.65
Skewness	0.02	-0.04	-0.11	0.35	-0.27	-0.39	-0.05	0.10	-0.86	1.70
Range	2.78	1.88	1.56	1.21	1.90	3.29	1.65	1.41	2.25	20.46
Minimum	2.40	3.66	3.53	3.90	2.95	3.12	2.40	3.20	8.25	0.55
Maximum	5.17	5.54	5.09	5.11	4.85	6.42	4.05	4.61	10.50	21.01
Count	112	112	112	112	112	112	112	112	112	112

Source: Own calculations

Based on the information presented in table 11, it can be underlined that the indicators are moderately inter-correlated since 23 calculated coefficients out of 50 are higher than 0.50. Nevertheless, in order to avoid the limitations of multi-collinearity, it has been undertaken a factor analysis to estimate the empirical model of the entrepreneurial competitiveness i.e. Kaiser-Meyer-Olkin measure of sampling and the Bartlett’s test of sphericity.

Table 11. Pearson’s correlation matrix of the indicators

	MS	HT	GME	LME	FMD	ME	IN	BS	Inc.	NBD
MS	1.00									
HT	0.37	1.00								
GME	-0.04	0.55	1.00							
LME	-0.39	0.14	0.38	1.00						
FMD	0.21	0.53	0.68	0.29	1.00					
ME	0.00	0.23	0.60	0.29	0.58	1.00				
IN	0.36	0.79	0.67	0.33	0.50	0.48	1.00			
BS	0.31	0.76	0.74	0.31	0.69	0.52	0.85	1.00		
Inc.	0.52	0.66	0.62	0.08	0.75	0.62	0.75	0.78	1.00	
NBD	-0.30	0.40	0.54	0.50	0.50	0.44	0.35	0.23	0.34	1.00

Source: Own calculations

Table 12 presents the model of estimation between NBD reflecting general entrepreneurial competitiveness of the Eastern European countries and other indicators determining entrepreneurship. As it can be noticed, the coefficient of determination is high reaching 0.80, the same observation could be made also for adjusted R square. The significance level F is 0.00, the fact marking the relevance of the model. The P-values of the dependent variables is significant for all cases, ranging between 0.00 and 0.01, except for innovation (IN) the value reaching 0.08, higher than 0.05. Nevertheless, it has been decided to make an exception and include the variable in the model since its P-value just slightly exceeds the admissible 0.05. Also, it has been decided to make this exception due to the fact that P-values of other variables are almost ideal and, therefore, this deviation will not diminish the relevance of the model on overall. By taking into account the information presented in table 12 it can be built the econometric model (1). Accordingly, it can be underlined that the entrepreneurial competitiveness is directly dependent on income or the level of GDP per capita, innovation, macroeconomic environment, financial market development, labour market efficiency, goods market efficiency and higher education and training. At the same time, it is surprisingly to find that the entrepreneurial competitiveness is inversely connected with the business sophistication and market size. Thus, in the case of the Eastern European countries business sophistication and market size is not always beneficial for entrepreneurial competitiveness.

Table 12. Multi-linear regression analysis between NBD and other indicators reflecting entrepreneurial competitiveness

Regression Statistics		ANOVA	df	SS	MS	F	Sig. F	
Multiple R	0.90							
R Square	0.80	Regress.	9	1930.03	214.45	46.48	0.00	
Adj. R	0.79	Residual	102	470.57	4.61			
SE	2.15	Total	111	2400.59				
Obs.	112							
	<i>Coeff.</i>	<i>SE</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>L. 95%</i>	<i>U. 95%</i>
Intercept	-44.43	7.57	-5.87	0.00	-59.44	-29.41	-59.44	-29.41
MS	-2.25	0.45	-5.01	0.00	-3.14	-1.36	-3.14	-1.36
HT	6.46	0.84	7.65	0.00	4.79	8.13	4.79	8.13
GME	3.48	1.38	2.52	0.01	0.74	6.22	0.74	6.22
LME	4.44	1.02	4.36	0.00	2.42	6.45	2.42	6.45
FMD	3.89	1.02	3.81	0.00	1.86	5.92	1.86	5.92
ME	1.24	0.48	2.59	0.01	0.29	2.19	0.29	2.19
IN	2.60	1.47	1.77	0.08	-0.31	5.51	-0.31	5.51
BS	-15.75	1.43	-11.03	0.00	-18.58	-12.92	-18.58	-12.92
Inc.	2.46	0.94	2.63	0.01	0.61	4.32	0.61	4.32

Source: Own calculations

Based on the model identified, it can be pointed the dependent variables which have the strongest favourable impact upon entrepreneurial competitiveness are: higher education and training, labour market efficiency, financial market development, and goods market efficiency. This situation is determined by the coefficients of the variables. It has been performed the Kaiser-Meyer-Olkin measure of sampling adequacy, the KMO measure reaching 0.86, the situation proving that the analysis provided reliable factors. Moreover, it has been performed the Bartlett's test of sphericity, the p-value of which being 0.000 the fact demonstrating that factor analysis is an appropriate method to apply.

$$(1) NBD=2.46Inc+2.60IN+1.24ME+3.89FMD+4.44LME+3.48GME+6.46HT-15.75BS-2.25MS-44.43$$

CONCLUSIONS

Certainly, entrepreneurial performance is a determinative factor of the economic competitiveness, this fact has been assessed not only at the level of the Republic of Moldova, but also in the cases of other Eastern European nations. It has been identified an explicit relation of dependence between the level of entrepreneurial competitiveness and other determinants of the business activity. It can be remarked a clear differentiation between the Eastern European economies which integrated in the European Union and those which are part of the Eastern Partnership initiative, the member of which is the Republic of Moldova. The competitiveness of the business sector of the Eastern Europe in the innovation driven sectors is modest. Lack of entrepreneurial competitiveness caused the business sector to stagnate. The unfavourable business environment is hindering entrepreneurial progress the situation minimising the growth potential of the states, especially, those which have not integrated in the EU. Unless an intensive entrepreneurial basis is developed, the economic competitiveness will be reduced. Development rearrange of the Eastern Partnership countries tends to increase in dynamics, the situation which weakens the ability of these states to progress in the future since underdeveloped economies are less likely to strengthen business competitiveness. Unless more radical reforms are promoted in the area of business sector

liberalisation, the country is set to confront with important economic challenges. The present study proposed the following research hypotheses: first, the entrepreneurial competitiveness of the Eastern European countries is directly linked to all selected determinants. Secondly, more competitive states in terms of entrepreneurship are more developed. Thirdly, the EU integrated Eastern European states are more advanced in terms entrepreneurial competitiveness as compared to the rest of the nations. Finally, the Republic of Moldova is the Eastern European nations with the least competitive entrepreneurship and business. It should be mentioned that the study accepts all formulated hypotheses, except the first. It has been found out that not all analysed determinants of entrepreneurial competitiveness have direct impact on entrepreneurship, in this regard I refer to business sophistication and market size.

REFERENCES

1. Baumol, W.J. (1968) ‘Entrepreneurship in Economic Theory’, *American Economic Review*, 58, Papers and Proceedings, p.64-71.
2. Baumol, W.J. (1990) ‘Entrepreneurship: Productive, Unproductive and Destructive’, *Journal of Political Economy*, 98 (5), Part 1, p.893-921.
3. Becker, G. S., 1993, *Human Capital, A Theoretical and Empirical Analysis with Special Reference to Education*, The University of Chicago Press, Chicago.
4. Cantillon, R. (1881). The Nationality of Political Economy. *Contemporary Review*, 61. Retrieved from <http://www.ecn.ulaval.ca/~pgon/hpe/documents/physiocratie/Jevons%20sur%20Cantillon.pdf> on January 2, 2019.
5. Cantillon, R. (2010). *Essay on Economic Theory*, An. Ludwig von Mises Institute. Auburn.
6. Carter, N. M., Stearns, T. M., Reynolds, P. D., & Miller, B. A. (1994). New venture strategies: Theory development with an empirical base. *Strategic Management Journal*, 15(1), 21-41.
7. Casson, M. (2001) *Information and Organisation: A New Perspective on the Theory of the Firm*, Oxford University Press.
8. Casson, M. (1982) *The Entrepreneur: An Economic Theory*, Martin Robertson, Oxford.
9. Drucker, P. (2014) *Innovation and Entrepreneurship*. Routledge, New York.
10. Drucker, P. (2006). *Classic Drucker: essential wisdom of Peter Drucker from the pages of Harvard Business Review*. Harvard Business Press. Boston.
11. Espiritu-Olmos, R., & Sastre-Castillo, M. A. (2015). Personality traits versus work values: Comparing psychological theories on entrepreneurial intention. *Journal of Business Research*, 68(7), 1595-1598.
12. Hayek, F.A. (1937) ‘Economics and Knowledge’, *Economica*, (New Series), 4 (13), p.33-54.
13. Jolink, A., (1996), *The Evolutionist Economics of L’eon Walras*, Routledge, London and New York.
14. Jones, H.G. (1975), *An Introduction to Modern Theories of Economic Growth*, Nelson, London.
15. Kirzner, I. M., (1973), *Competition and Entrepreneurship*, University of Chicago Press, Chicago.
16. Kirzner, I. M., (1999), Creativity and/or alertness: A reconsideration of the Schumpeterian entrepreneur, *Review of Austrian Economics*, Vol. 11, Kluwer Academic Publishers, pp. 5–17.
17. Knight, F. (1921) *Risk, Uncertainty and Profit*, Houghton Mifflin Co, Boston and New York.
18. Low, M., and MacMillan I. (1988). “Entrepreneurship: Past Research and Future Challenges,” *Journal of Management*, 14 (2), 139-161.
19. Marshall, A. (1890). *Principles of Economics*. 1 (First ed.). London: Macmillan.
20. McClelland, D. C., & Burnham, D. H. (2008). *Power is the great motivator*. Harvard Business Review Press. Retrieved from <https://hbr.org/2003/01/power-is-the-great-motivator> on January 2, 2019.
21. Mill, J. S. (1848), *Principles of Political Economy with Some of their Applications to Social Philosophy*, (1 ed.), London: John W. Parker.
22. Reynolds, P. D. (1992). Sociology and entrepreneurship: Concepts and contributions. *Entrepreneurship theory and practice*, 16(2), 47-70.
23. Rotter, J. B. (1967). A new scale for the measurement of interpersonal trust. *Journal of Personality*, 35(4), 651-665.
24. Schumpeter, J. (1939) *Business Cycles I-II*, New York: McGraw-Hill. New York.
25. Schumpeter, J. A. (1994). *Capitalism, Socialism and Democracy*. London: Routledge. ISBN 978-0-415-10762-4.
26. Schumpeter, J., (1983). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Translated by Redvers Opie. New Brunswick: Transaction Books.

27. Shane, S., and S. Venkataraman (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25 (1), 217-226.
28. Stevenson, H., & Harmeling, S. (1990), “Entrepreneurial Management’s Need for a More "Chaotic" Theory”, *Journal of Business Venturing*, 5 (1), 1-14.
29. Stevenson H.H., Jarillo J.C. (2007), A Paradigm of Entrepreneurship: Entrepreneurial Management. In: Cuervo Á., Ribeiro D., Roig S. (eds) *Entrepreneurship*. Springer, Berlin, Heidelberg. DOI https://doi.org/10.1007/978-3-540-48543-8_7
30. Suddaby, R., Bruton, G. D., & Si, S. X. (2015), Entrepreneurship through a qualitative lens: Insights on the construction and/or discovery of entrepreneurial opportunity. *Journal of Business venturing*, 30(1), 1-10.
31. Wennekers S., Thurik R. (1999), Linking entrepreneurship and economic growth. *Small Business Economics*, 13 (1), p. 27–55.
32. Drucker, P. F. (1993). *Innovation and entrepreneurship: practice and principles*. New York: Harper Business.
33. Ricketts, M. (2006), “Theories of entrepreneurship: Historical development and critical assessment,” in Casson, M., Yeung, B., Basu, A., and Wadeson, W. (eds.), *The Oxford Handbook of Entrepreneurship*. Oxford (Oxford University Press), pp. 33–58.
34. Walker, D.A. (1986), “Walras’s theory of the entrepreneur”, *De Economist*, 134 (1), pp. 1-24.
35. Ebner, A. (2005). Entrepreneurship and economic development: From classical political economy to economic sociology. *Journal of Economic Studies*, 32(3), 256-274.
36. Menger, C. (1871) *Grundsätze der Volkswirtschaftslehre*, translated and edited (1950) as *Principles of Economics*, Free Press, Glencoe, IL.
37. Jevons, W.S. (1871) *The Theory of Political Economy*, Collison Black, R.D. (ed.) (1970) Penguin Books.
38. Hayek, F. 1948. *Individualism and Economic Order*. Chicago: University of Chicago Press.
39. Śledzik, K. (2013), *Schumpeter’s View on Innovation and Entrepreneurship*. Management Trends in Theory and Practice, (ed.) Stefan Hittmar, Faculty of Management Science and Informatics, University of Zilina & Institute of Management by University of Zilina, 2013, ISBN 978-80-554-0736-4.
40. Goethner, M., Obschonka, M., Silbereisen, R. K., & Cantner, U. (2012). Scientists’ transition to academic entrepreneurship: Economic and psychological determinants. *Journal of economic psychology*, 33(3), 628-641.

CZU: [659.1:004.738.5]:334.72.012.63/.64(478)

DOI: <https://doi.org/10.53486/dri2022.02>

THE EFFICIENCY OF PROMOTION OF GOODS AND SERVICES THROUGH SOCIAL NETWORKS: A STUDY BASED ON THE PRACTICE OF SMALL AND MEDIUM ENTERPRISES IN MOLDOVA

GAGAUZ VALERIU ²

Abstract: *With the increasing popularity of social networks among users, studying their use for marketing purposes by small and medium-sized enterprises (SMEs) is particularly important. The article is based on a study of the communicative performance of SMEs in social networks on the example of 50 commercial trade and the provision of services companies from Moldova. The quality, coverage, and number of reactions to advertising posts were analyzed. Even though SMEs use social networks for marketing purposes, they are not entirely oriented to modern trends and create publications chaotically. On average, a large number of subscribers get low organic reach and low efficiency in their marketing activities. It was concluded that SMEs need to ensure the brand's presence on various social media platforms because, in current conditions, Internet platforms can most quickly and cost-effectively increase consumer awareness of the brand.*

Key words: *social media marketing, small business, promotion efficiency*

JEL CLASSIFICATION: M31.

INTRODUCTION

The Covid-19 pandemic and the isolation of people and businesses have mainly influenced the growth of interest in Internet marketing and social media marketing (SMM). The need for companies to survive in difficult conditions has accelerated the growth of online commerce, and there has been a shift from classic offline shopping to online. To avoid losses, the offline retail business was forced to get involved in the development of digital marketing: small companies created and began to promote social media accounts, and large companies began to accelerate the integration of their applications.

Social networks have significant potential for marketers, as they cover audiences of millions. The average screen time for social networks continues to increase, and the number of users skyrockets by tens of millions per code. Social networks provide direct access to the audience without restrictions on location and time. A rich set of social media tools allows you to properly segment the audience, quickly and easily create content, process, develop and launch advertising campaigns, and view statistics. The accessible interface enables users to advertise their projects on their own without the need to involve advertising companies.

According to AppDynamics, a large cloud technology company, 65% of offline retail companies in 2020 implemented delayed IT projects. A study by Coffee Analytics and Scanners showed that social media users increased dramatically in the first weeks of self-isolation. Still, after

² Ph.D Student, email: gagauzvf@gmail.com
ORCID: 0000-0003-3011-2081

a month, there was positive growth in social media users. According to Global Digital, almost half a billion new users signed up on social media in 2021.

In recent years, not only has the interest of ordinary users and businesses in social networks changed, but content consumption has also changed. Increasingly, social networks act as search engines, where users search for goods and services, information about companies, and video feeds such as Reels, Shorts, and TikTok have become a substitute for television. Major social networks such as Instagram are changing their rules to be more convenient for smaller publishers, including small businesses. The level of trust in information on social networks is higher than on commercial sites, and consumers are more likely to trust information from users like themselves. Social media has made the human factor incredibly influential in the extended marketing mix.

SMALL AND MEDIUM ENTERPRISES IN MOLDOVA

According to the National Bureau of Statistics, microenterprises account for 97% of Moldova's total number of small and medium-sized enterprises. Following Law no. 179 of 21.07.2016 on small and medium-sized enterprises, a micro-enterprise is an enterprise with no more than 9 employees, an annual turnover of up to 9 million lei or a total amount of assets owned by it up to 9 million lei. National strategies for the last 10 years have contained goals for the digitalization of business (Digital transformation strategy of the Republic of Moldova for the years 2023–2030, Digital Moldova Strategy 2020), and state organizations for the development of the small and medium-sized enterprises sector, such as EDO (Entrepreneurship Development Organization), allocate significant funds to support the digitalization of small and medium-sized enterprises. However, the development of SMEs in Moldova faces several difficulties reflected in the statistics of business closures and relatively low economic indicators (BNS, 2022).

Obviously, in the context of the digitalization of the economy, the sustainability of SMEs largely depends on introducing new technologies in business process management and using the benefits of digital marketing. The statistics of recent years consider innovative marketing methods as one of the aspects of the creative activity of enterprises. However, the share of enterprises that use innovative marketing methods is tiny. The share of enterprises implementing organizational and marketing innovations is about 3% of the total number of enterprises (BNS, 2021).

Existing research highlights the benefits of digital marketing for SMEs, including the use of social media (Ignatieva, Zedgenizova, 2019; Aldarova, 2017; Vinokurova, Arbuzova, 2021). Social media promotes collaboration, information sharing, mutual trust, communication, and commitment among partners in the supply chain and improves the experience of suppliers and buyers (Trivedi & Malik, 2022).

Empirical evidence shows that SMEs' social media use falls into six categories: (1) branding, advertising and promotion; (2) improving community engagement and content sharing; (3) building trust and relationships; (4) reach of potential customers; (5) digital marketing trends, and (6) inexpensive content promotion and customization. However, achieving these benefits for SMEs is possible if social media marketing is done effectively and consistently (Berto Mulia Wibawa et al., 2022). Researchers note that there is a positive relationship between the level of education of SME owners/managers and the firm's online marketing activity (Civelek, 2020). In addition, empirical evidence shows that social media entrepreneurial marketing is not necessarily a productive approach for new firms or those operating under human and financial resource constraints (Fink et al., 2020)

Moldovan SMEs are increasing their online presence, including on social networks, but empirical studies on the effectiveness of their marketing activities are almost non-existent. This work aims to fill this gap partially. The purpose of the study is to analyze the marketing activities of Moldovan SMEs in social networks to determine the effectiveness of communication with customers.

RESEARCH METHODOLOGY

The object of the study was 50 commercial SMEs in the provision of car repair services and the sale of auto parts in Chisinau, operating on the market for at least five years. The study was conducted based on the analysis of social media posts by SMEs in June 2022.

Three social networks were selected for Moldova based on the data on the audiences of various social platforms: Facebook, Instagram, and TikTok. Youtube was not included in the study, as it is not exactly a social network. In addition, a preliminary survey showed that out of the entire sample, only a few companies have business accounts on this platform. However, they did not show any activity on it. According to marketing company NapoleonCat, Moldova has 1.96 million Facebook users, 1.05 million Instagram users, and presumably the same number of TikTok users in 2022 (NapoleonCat, 2022).

For each account, the number of publications for the selected period, the total number of reactions, the average coverage of publications, the maximum coverage of publications, and the maximum number of reactions were recorded.

To assess the effectiveness of promoting goods and services through social networks, the following indicators were calculated:

ER (Engagement Rate) – overall engagement score on a social media page.

$$ER = \frac{\text{total reactions}}{\text{number of subscribers}} * 100$$

ERR (Engagement Rate Reach), ER_{post} – the reach of a social media post.

$$ER_{post} = \frac{\text{reactions to post}}{\text{number of subscribers}} * 100$$

The engagement rate shows how the audience interacts with the content. This indicator is measured as a percentage of all actions to reach or the number of subscribers.

LR - attractiveness level

$$LR = \frac{\text{total number of likes}}{\text{number of subscribers}} * 100$$

To compare results, we tested one 48-second short video post that was posted to TikTok, YouTube Shorts, and Instagram Reels simultaneously. The video publication was devoted to some technical aspects of the work of one of the SMEs in the field of providing car repair services and the sale of auto parts in Chisinau. Testing was carried out for two days, from August 5 to 7, 2022.

RESEARCH RESULTS AND DISCUSSION

The study showed that in the period under review, only 29 out of 50 companies were active on social networks, and 21 companies did not create a single publication. Fifteen companies were active on Instagram and Facebook, four simultaneously on TikTok and Facebook, seven simultaneously on TikTok and Instagram, and only four were active on all three social networks under consideration. To calculate the coefficients, only the number of active accounts was taken into account.

The study found that most companies promote their content on Facebook and Instagram, and inactive companies do not own TikTok accounts. As a younger social network, companies use TikTok less commonly to promote products and services than others. It found that active accounts created Facebook and Instagram posts an average of 1-2 times a week, while companies that worked on TikTok posted content almost daily because Facebook and Instagram severely limit organic reach. Related to this fact is that, on average, the number of followers on TikTok is two more than on Facebook and Instagram. For example, for Facebook, organic reach is in the range of 5-7%. Instagram, being part of Meta, like Facebook, followed the same policy until mid-2022. At the beginning of October 2022, the coverage of subscribers was from 25% to 30%. The coverage also expanded due to accounts that did not subscribe to the profile, and the figure often does not exceed 5%.

According to the data (Table 1), the average reach of posts on TikTok is more than 20 times higher than on Facebook and Instagram. The average number of audience reactions to content for TikTok is 22 times more than Facebook and 73 times more than Instagram. The maximum reach of a single post on TikTok was 177,000 users, 95 times more than Instagram and 465 times more than Facebook. The maximum number of reactions per post on TikTok was 16035, almost 10 times more than Instagram and 16 times more than Facebook. The Love Rate for TikTok is 13 times higher than for Instagram and 61 times higher for Facebook, meaning content on TikTok evokes a more significant emotional response than on other networks.

Table 1. SME indicators in social networks

		Facebook	Instagram	TikTok
1.	Active accounts	21	21	7
2.	The average number of followers per account	2884	1916	4733
3.	The average number of publications per 1 month	6,6	6,1	27
4.	The average number of reactions per 1 month	490	149	11 000
5.	The average coverage of publications	645	752	13 462
6.	Responses on average	489	149	11 000
7.	Maximum coverage of 1 publication	380	1 852	177 000
8.	Maximum number of reactions per 1 publication	980	1 615	16 035
9.	The average LR Love Rate	0,16%	0,72%	9,76%
10.	The average ER	16,97%	7,78%	232,41%
11.	The average ERR	75,88%	19,81%	81,71%

Source: calculated by the author based on research

There were some deviations from the average performance of posts on Facebook and Instagram, and the variations were associated with paid promotion. Organic reach for paid-promoted accounts remained at a low level. For example, in the SST-Chiptuning account with 185 thousand subscribers, there are photo posts with 15 likes and one comment and videos with 502 likes and two comments, the maximum ER for such posts is 0.27%. Relatively high average and maximum organic reach were only available on TikTok. The maximum coverage and number of reactions for a single post on TikTok are orders higher than those for Facebook and Instagram. By Love Rate Engagement Rate, TikTok leads compared to Facebook and Instagram.

As for the latest ERR indicator - Engagement Rate by Reach - TikTok has the highest ERR, but Facebook's 75.88% indicator requires comment. It is essential to understand that ERR is a relative value and consists of absolute values, which in the case of Facebook are very low compared to TikTok and the high ERR is due to a small gap between the compared engagement and reaction numbers.

The "normal", "medium", "low", or "high" indicators will be different for each network. For this reason, selecting your own set of indicators for organizing activities in each social network is necessary. It is also necessary to compare the performance indicators of marketing activities in social networks with business indicators. Ultimately, marketing efforts aim to increase sales and promote new products and services. Large reach and high engagement, along with inappropriate content with a dubious degree of impact on the audience, can undermine the brand image, worsen the image, and therefore affect the decline in sales.

The rise of the TikTok concept has influenced the development of other platforms. Instagram adopted Reels in 2020 and changed the rules in 2022 to limit organic reach in favor of smaller content creators (with relatively few followers). YouTube also introduced Shorts in 2020. Reels and Shorts are almost identical to TikTok posts. Short video content has become more critical.

For testing, one 48-second short video post was selected that was posted on TikTok, YouTube Shorts, and Instagram Reels simultaneously. This publication showed that the TikTok network provides the maximum coverage of the audience of subscribers and gives access to a new audience. Publication coverage is not limited to the country of publication but is expanded to include users in other countries who may be potentially interested in this content (Table 2). TikTok content engagement rates are one or even two orders higher than YouTube Shorts and Instagram Reels. This applies to the publication's coverage, reactions of different types, and new subscribers.

Table 2. Coverage metrics on social media platforms (one video post, August 5-7, 2022)

		TikTok	Instagram Reels	YouTube Shorts
Subscribers		7200	125	52
	Subscribers RM	14%	78%	43%
	Subscribers RM	1 008	97,5	22,36
Coverage		1 400 000	232	6 300
	Likes	33 000	9	82
	Comments	333	0	0
	Reposts	416	0	3
	Conservation	1 713	0	
	New subscribers	2 120	18	11
Coverage	RM users	7%		
	RM users	98 000		

Source: calculated by the author based on research

The study clearly shows that in the category of short video content, TikTok is the leader in all indicators. Business activity within the already mastered social networks is relatively low due to the restrictions that social networks impose on organic (free) impressions. Younger social networks are much less often used by businesses to promote their brand and their products.

Because third-party marketing organizations' services are expensive, it is typical for SMEs in Moldova to promote themselves on social networks. An analysis of the accounts of SMEs shows that, in most cases, enterprises have a particular strategy in this direction. The objectives of the brand's presence in social networks and its positioning on these platforms are unclear.

CONCLUSIONS

Businesses use social networks to create accounts and publications, while SMEs are poorly oriented in modern trends; they make publications chaotically. Despite a large number of subscribers, SMEs get shallow organic coverage and low efficiency in their marketing activities.

The target audience spends a lot of time on social networks, and social media's organic reach is higher than other platforms. SMEs should pay more attention to creating and promoting content that better reveals the business itself, its products and services, goals, and values to the target audience.

For communication and cost-effectiveness of social media marketing, SMEs should have a clear strategy and tactics for managing the community. It is necessary to diversify social platforms, monitor trends and changes in user preferences, diversify content, and develop their resources - websites and instant messengers. It should be taken into account that all media resources are out of business ownership and can always be disabled or deleted by the social network.

The most significant players in the social networks and media markets, such as Instagram and Youtube, respond to changes in the needs and interests of the audience and make adjustments in their work and the entire concept of their platforms. In the same way, businesses must be ready to respond, change and redirect their content to new, more popular, and trending platforms, and create content in new formats.

TikTok, Reels, and Shorts (short-length videos) are essentially the same formats and do not require additional resources or effort to create. The business can produce content and host it across multiple platforms simultaneously, saving resources and maximizing the value of placement diversification and increased brand presence.

REFERENCES

1. Abbas, J., Mahmood, S., Ali, H., Ali Raza, M., Ali, G., Aman, J., ... & Nurunnabi, M. (2019). The effects of corporate social responsibility practices and environmental factors through a moderating role of social media marketing on sustainable performance of business firms. *Sustainability*, 11(12), 3434. <https://doi.org/10.3390/su11123434>
2. Berto Mulia Wibawa, Imam Baihaqi, Ninditya Nareswari, Rachma Rizqina Mardhotillah, & Faras Pramesti. (2022). Utilization of Social Media and Its Impact on Marketing Performance: A Case Study of SMEs in Indonesia. *International Journal of Business and Society*, 23(1), 19-34. <https://doi.org/10.33736/ijbs.4596.2022>
3. BNS (2021) Rezultatele activității de inovare a întreprinderilor în Republica Moldova în anii 2019-2020. <https://statistica.gov.md/newsview.php?l=ro&id=7222&idc=168>
4. BNS (2022) Activitatea întreprinderilor mici și mijlocii în Republica Moldova în anul 2021 <https://statistica.gov.md/newsview.php?l=ro&id=168&id=7496>
5. Borah, P. S., Iqbal, S., & Akhtar, S. (2022). Linking social media usage and SME's sustainable performance: The role of digital leadership and innovation capabilities. *Technology in Society*, 68, 101900.

6. Civelek, M., Gajdka, K., Světlík, J., & Vavrečka, V. (2020). Differences in the usage of online marketing and social media tools: evidence from Czech, Slovakian and Hungarian SMEs. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 15(3), 537-563. DOI: [10.24136/eq.2020.024](https://doi.org/10.24136/eq.2020.024)
7. Fink, M., Koller, M., Gartner, J., Floh, A., & Harms, R. (2020). Effective entrepreneurial marketing on Facebook– A longitudinal study. *Journal of business research*, 113, 149-157. DOI: [10.1016/j.jbusres.2018.10.005](https://doi.org/10.1016/j.jbusres.2018.10.005)
8. Floris, M., & Dettori, A. (2020). Is Social Media Adoption a Powerful Means to Reach High Performance in Small- and Medium-Sized Firms? An Empirical Investigation. *International Journal of Marketing Studies*, 12(2), 1-50. DOI: [10.5539/ijms.v12n2p50](https://doi.org/10.5539/ijms.v12n2p50)
9. Napoleoncat (2022) <https://napoleoncat.com/stats/facebook-users-in-moldova/2022/05/>
10. Trivedi, S., & Malik, R. (2022). Social Media Marketing as New Marketing Tool. In *Research Anthology on Social Media Advertising and Building Consumer Relationships* (pp. 18-33). IGI Global. DOI: 10.4018/978-1-7998-7231-3.ch015
11. Алдарова И. (2017). Социальные сети как инструмент современного маркетинга // Бизнес-образование в экономике знаний. №2 (7). URL: <https://cyberleninka.ru/article/n/sotsialnye-seti-kak-instrument-sovremennogo-marketinga>.
12. Винокурова, М. В., & Арбузова, М. Ю. (2021). Маркетинг в социальных сетях как инструмент развития предпринимательства. In: *Развитие российского общества: вызовы современности* (pp. 281-287).
13. Игнатъева И.В., Зедгенизова И.И. (2019) Маркетинг социальных сетей как инструмент продвижения // Инновации и инвестиции. №7. URL: <https://cyberleninka.ru/article/n/marketing-sotsialnyh-setey-kak-instrument-prodvizheniya>.

CZU: [338.1:330.15]:664(479.2)

DOI: <https://doi.org/10.53486/dri2022.03>

NATURAL CONDITIONS AND ECONOMIC FACTORS AFFECTING THE TERRITORIAL ORGANIZATION OF FOOD INDUSTRY ENTERPRISES IN NAKHCHIVAN AUTONOMOUS REPUBLIC

MAHAMMAD SULEYMANOV³

Abstract: *In the Nakhchivan Autonomous Republic, the Gross Domestic Product indicator for 2021 has exceeded 3 billion manats, where the highest indicator is related to industrial production with 35%. The development of the industry, which has a large share in the Gross Domestic Product, depends on the efficient and correct organization of industrial areas on the territory, and this plays an important role in the development of the national economy and in ensuring social protection. The correct and efficient location of industrial production ensures the efficient use of natural resources, improvement of the employment level of the population, increase of labor productivity and production efficiency based on economical use of economic resources, optimal socio-economic development of economic regions. The location of the industrial enterprise affects the development of transportation, communication and other areas in the region, the supply of energy and raw materials for production, the complexity of interregional and intersectoral relations, and the increasing importance of environmental protection. As a result of all this, effective placement on the territory plays a positive role in the development of both the society and the country in a certain sense.*

Key words: *food industry, socio-economic development, natural factor, territorial organization*

JEL CLASSIFICATION: L00, L66, O14.

INTRODUCTION

Intensification of production, increasing its efficiency, and raising the material and cultural standard of living of the people based on this form the basis of the economic strategy of any state. The successful solution of these problems in a certain sense depends on the improvement of the correct placement of industrial production on the territory, the further specialization and proportional development of the economies of states and regions, the formation and development of different levels of territorial-production complexes in order to use their local resources more efficiently. Effective placement of industrial production, positive impact on the development of society is primarily due to the essence of industrial production. At the modern stage of economic development, the correct placement of industrial production is of great importance. The successful fulfillment of the tasks ahead in the field of accelerating the socio-economic development of the country on the basis of scientific and technical progress depends in a certain sense on the effective deployment of industrial production. Effective location of industrial production, in turn, interacts with important socio-economic problems of society's development. Effective placement of industrial production ensures the increase of dynamism and efficiency of public production. At the same time, the effective placement of industrial production ensures the efficient development of a region through the efficient

³ Researcher, Ph.D Student, email: mahammad.suleymanov85@gmail.com
ORCID: 0000-0002-9706-3395

use of labor resources and other opportunities, saving public labor. Improving the material well-being of the population plays an important role in eliminating the differences between urban and rural areas, mental labor and physical labor, and cultural-household service level differences. Effective location of industrial production, in turn, interacts with important socio-economic problems of society's development. Effective placement of industrial production ensures the increase of dynamism and efficiency of public production. At the same time, the effective placement of industrial production ensures the efficient development of a region through the efficient use of labor resources and other opportunities, saving public labor. Improving the material well-being of the population plays an important role in eliminating the differences between urban and rural areas, mental labor and physical labor, and cultural-household service level differences.

FACTORS AFFECTING THE LOCATION OF INDUSTRIAL ENTERPRISES ON THE TERRITORY

One of the factors influencing the placement of industrial enterprises on the territory is natural factors. These natural factors include the following - mineral resources of individual regions of the country, geography of population settlement in the regions, possibility of using water energy, availability of natural waterways, quantitative and qualitative characteristics of forest resources, climatic conditions of the region, etc. The forms of the natural factor affecting the placement of industrial production have a unique effect on the placement of individual areas of industry. Thus, natural conditions in productive industries and water power directly affect the construction of enterprises and all technical and economic indicators of their use. The nature of deposits of minerals available in the region, quantitative characteristics of resources, physicochemical properties of minerals determine the level of concentration of extractive industrial enterprises, production methods, and the nature of the primary processing of extracted substances. The quantity of economic efficiency indicators depends on the size of the mining enterprises, the extraction technique, and the properties of the extracted substances.

Water resources, one of the forms of the natural factor, have an important influence on the location of many industries, for example, food industry enterprises, hydroelectric power plants, chemical industry and other areas. The lack of sufficient water resources in the region can slow down the work of industrial enterprises. Climatic conditions, like a natural factor, also affect the location of industry in a unique way. Thus, housing, clothing, and food costs are higher in regions with a cold climate than in regions with a warm climate. When building enterprises in regions with a cold climate, capital investments are higher than in regions with a warm climate, and its operating costs are also high. It should be noted that as a result of the high level of scientific and technical progress in modern times, the effect of natural factors affecting the location of industrial production is partially weakened by technical factors. So, if the natural factor makes the location of industrial enterprises dependent on the raw material base, the availability of natural resources, the technical factor, on the contrary, seriously reduces the tension in this issue in many cases. New methods of extraction, refining and processing of mineral raw materials and fuel types allow to successfully attract fields that were previously impossible to use into the scope of industry. It should be noted that scientific and technical progress can only weaken the influence of the natural factor on the location of many areas of industry, but it cannot completely eliminate it. Therefore, in modern conditions, every entrepreneur engaged in state or industrial activity plans the location of the industry he will start working on the selection of the region where the enterprises will be established, production specialization of the regions, and the study and

economic comprehensive characterization of separate deposits of minerals, in order to choose the most economically efficient option, it should give a quantitative economic value to each option. It is impossible to effectively place the industry in individual economic regions of the country without economically assessing the natural conditions and taking into account their impact. For this, it is necessary to have general information about the potential resources of raw materials, fuel and energy in the regions of the country, the degree of their study, the quantitative characteristics of individual resources and the classification of quality properties. As we mentioned, one of the most important factors affecting the location of industrial production is scientific and technical progress. The placement of industrial production is directly influenced by several main directions of scientific and technical progress, electrification, chemicalization, the nature and improvement of technological processes.

Automation and complex mechanization, which are other directions of scientific and technical progress, also have a great impact on the placement of industrial production. Thus, it can weaken the limitation of labor resources existing as a natural factor, and thereby create ample conditions for locating industrial production in regions with limited labor resources. One of the factors that seriously affects the location of industrial production is the transport factor. The amount of cost of products produced in industrial areas also depends on how industrial production is located on the territory of the country. Improving the geographical location of industry makes it possible to reduce the inefficient transportation of raw materials and finished products over long distances. This, in turn, creates ample opportunities to significantly reduce the share of raw materials, material and fuel transportation costs in the cost of individual types of industrial products. Therefore, under the influence of transport, some areas of the industry are located near the sources of raw materials, others at the places of consumption of their products, and other areas are located near cheap sources of energy.

INDICATORS OF FOOD INDUSTRY ENTERPRISES IN NAKHCHIVAN AUTONOMOUS REPUBLIC

Industry is one of the areas where high achievements have been achieved in the Nakhchivan Autonomous Republic. The industry of the Nakhchivan Autonomous Republic has historically occupied one of the leading positions in the economy of Azerbaijan. This important field, which mainly includes food, light and other industries, has entered the path of more intensive development since the middle of the 20th century. In the autonomous republic, in recent years, bakery products, flour, meat and dairy products, poultry, pasta, tea, sugar, salt, sweets, fruit juice, alcoholic beverages, pasteurized and packaged honey, roasted and packaged agricultural products and mineral waters industrial enterprises engaged in production have been commissioned. The graph below shows the industrial products produced in the autonomous republic between 2011 and 2021 in manat according to official data.

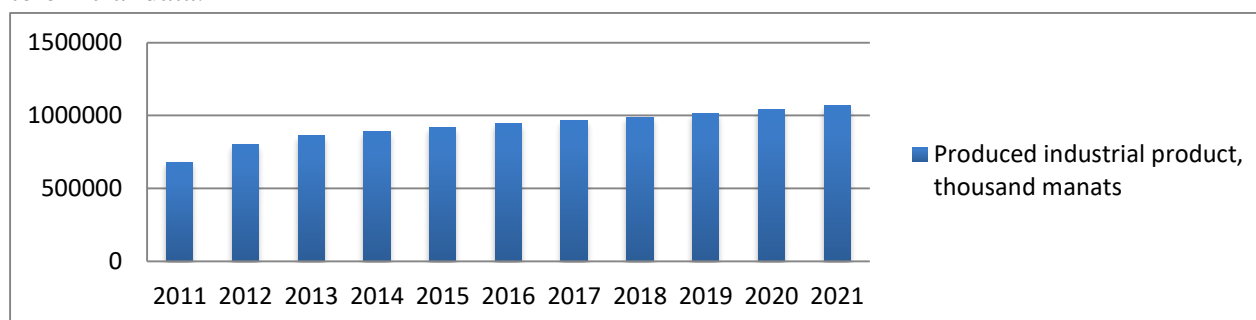


Figure 1. Industrial product produced in Nakhchivan Autonomous Republic, thousand manats

Source. Nakhchivan Autonomous Republic State Statistics Committee

In the research, the industrial products produced in the Nakhchivan Autonomous Republic between 2011 and 2021 are presented graphically. The growth over the years has been a 57% increase from 2011 to 2021. This indicator indicates the development of the industry and its growth from year to year. In 2021, industrial products worth 1 billion 69 million 655 thousand 700 manats were produced in the autonomous republic, which exceeded the previous year by 1.7 percent. 94.6 percent of the production of industrial products was made up of goods and 5.4 percent of services. The share of the private sector in the manufactured industrial product was 92.3 percent. In 2021, production and service facilities for 142 projects in various fields of economic activity were established in the autonomous republic with the support of the state, and the creation of production and service facilities for 52 projects was continued.

Here, according to the classification of international economic activities, the work of the industry is shown in the table.

Table 1. The work of the industry according to the classification of the types of international economic activity

Types of activities \ Years	2011	2013	2015	2017	2019	2021
In Total	680921,2	862870,5	916817,9	967060,0	1014971,5	1069655,7
Mining industry	826,6	964,7	1016,0	1024,1	1118,2	1145,2
Manufacturing	626928,1	799024,5	875208,0	918228,6	955707,3	989221,5
Of which:						
Food industry	397382,6	503258,0	535339,3	551289,6	575288,6	598861,0
Manufacturing of textiles and wearing apparel	32156,5	39323,1	41615,1	45465,3	48176,1	49263,6
Manufacture of leather and related products	786,3	926,9	1053,0	1141,1	1237,0	1309,9
Manufacture of wood and woodwork	33547,2	39794,1	42896,6	44070,1	45724,0	46670,1
Manufacture of paper and printing production	4562,3	5252,8	7148,3	10028,1	10182,1	10494,8
Chemical industry	6584,8	105,1	105,8	292,2	560,5	520,6
Manufacture of rubber and plastic products	47896,4	64992,1	76345,1	79703,4	81437,1	82954,3
Other industrial sectors	157178,5	208253,7	211298,6	234046,1	251247,9	279581,4

Source. Nakhchivan Autonomous Republic State Statistics Committee

The table shows the growth trend over the years. In 2021, the production of 1 billion 69 million 655 thousand 700 manats was recorded as the main indicator reflecting the overall development of the industry in the autonomous republic, which is 10.6 percent more than the corresponding indicator in 2017 and exceeded the previous year by 1.7 percent. In 2021, the production of products registered in the processing industry exceeded the corresponding indicator in 2017 by 7.7 percent. The processing industry is the area where the products obtained from agriculture and the mining industry are processed and made ready for use and plays an important role in providing employment.

CONCLUSION

The effective placement of industrial enterprises on the country scale is one of the important economic measures that can ensure the development of the national economy and social progress, being an aspect of the territorial organization of productive forces. Efficient placement of industrial production ensures efficient use of natural resources, improvement of the employment level of the

population, increase of labor productivity and efficiency of production based on economical use of economic resources, optimal socio-economic development of economic regions. The location of the industrial enterprise contributes to the development of transport, communication and other areas in the region, the supply of energy and raw materials for production, the complexity of interregional and intersectoral relations, the increasing importance of environmental protection, etc. has an effect. As a result of all this, effective placement on the territory plays a positive role in the development of both the society and the country in a certain sense. It is known from the conducted research that despite the fact that each region of our republic has strong potential opportunities (industrially important natural resources, cheap labor force), currently the level of location of industrial enterprises on the territory of the country does not correspond to the existence of these potential opportunities. In modern times, the existing inequality in the territorial structure of the country's industry necessitates state regulation of the optimal location of the industry on the territory. The economic experience of developed countries shows that the development of productive forces cannot be successfully implemented without the legal basis of regional development - the regional policy of the state. One of the forms of stimulating the efficient location of industrial facilities on the territory is industrial projects based on contracts between state, local and foreign investors. The purpose of these projects may be deepening the level of processing of raw materials and materials produced in the country, increasing their quality, reconstruction and modernization of existing industrial enterprises in the regions. Realization of such projects will allow to increase the technical and economic level of industrial production and increase the local components in the finished product. It is advisable for the government to finance up to 25 percent of the cost of such projects. This will stimulate the attraction of foreign investors to different regions of the country.

In order to improve the territorial organization of the industry, it is also necessary to improve the credit policy of the state. Thus, for the formation of newly created industrial enterprises in the remote regions of the country, the state can undertake a certain part of the financing of those enterprises for several years at the expense of a concessional loan. At the same time, the state can provide loans on favorable terms to expand and modernize production to industrial enterprises that have a significant impact on the improvement of the territorial structure of industry.

REFERENCES

1. Chen, A.H. and Wan, P.J. (1995) 'Food Industry in China: Past, Present, and Future' in *Food Technol.* 49(12), p:65-67
2. Dicken, P., Kelly, P. F., Olds, K., & Wai-Chung Yeung, H. (2001). Chains and networks, territories and scales: towards a relational framework for analysing the global economy. *Global networks*, 1(2), 89-112.
3. Menrad, K. (2004). Innovations in the food industry in Germany. *Research Policy*, 33, 845-878.
4. On the results of socio-economic development of the Nakhchivan Autonomous Republic in 2004. *Nakhchivan* (2005).
5. Sledzik K (2013). Schumpeter's View on Innovation and Entrepreneurship // *SSRN Electronic Journal*, p. 89-95.
6. Veselovsky, M. Y., Pogodina, T. V., Idilov, I. I., Askhabov, R. Y., & Abdulkadyrova, M. A. (2015). Development of financial and economic instruments for the formation and management of innovation clusters in the region. *Mediterranean journal of social sciences*, 6(3), 116.
7. Zakirova, A., Klychova, G., Ostaev, G., Zalilova, Z., & Klychova, A. (2020). Analytical support of management accounting in managing sustainable development of agricultural organizations. In *E3S Web of Conferences* (Vol. 164, p. 10008). EDP Sciences.

CZU: 339.137.2:[339.9:004.738.5]

DOI: <https://doi.org/10.53486/dri2022.04>

VERTICAL AGREEMENTS ON DIGITAL MARKETS

CAROLINA PARCALAB⁴

Abstract. *Introduction: Moldovan competition regulations have been modernized in 2012 in the spirit of European directives. However, European entrepreneurial experience, competitive culture, and case law in the field of competition rules' enforcement are far above. The absence of an extensive experience in this field leads often to confusion about the practical application of competition rules, and the risk exists that pro-competitive economic behaviour is wrongly blamed as an anti-competitive practice. Vertical restraints may be often identified in business contracts with vertical structures, such as supply, distribution, franchising, and agency agreements, whether such contracts are implemented in traditional or digital markets. Digitization and innovative technological solutions have substantially changed the production and distribution chain of goods and services. A good example in this sense is the book market where digitization has had a sensational effect on competition. The launch of the Kindle by Amazon in 2007 has shaken the market for e-books traded online, leading to settlements between major book publishers and e-book distributors agreeing on parity obligations, which have raised competition concerns with authorities in several countries. Agreements between print, e-book, and audio-book publishers and their distributors (Amazon, Apple) have been subject to competition investigations by US and EU competition authorities, as well as by the European Commission, where potentially anticompetitive vertical restraints have been identified.*

Aim: This article aims to investigate the boundaries between the legal and economic essence of vertical restraints; the benefits that such restraints may have over the competition and the impact of digitalization on the firms' behaviour when agreeing on vertical restraints in their new business models.

Method: To study the subject approached in this article, the following research methods were applied, such as analysis and synthesis of conceptual approaches to the use of vertical restraints in the digital economy, to elucidate the factors influencing the firms to use vertical restraints in their business activity and to formulate conclusions and own opinions about how the digitalization influenced the competitive assessment of vertical restraints.

Findings: Vertical restraints are not always a peril for competition, and their primary purpose is to remove market failures such as double marginalization, free riding, information asymmetries, or the risk of not recovering significant investments. They may have a pro-competitive effect, but sometimes it is impossible for businesses to clearly determine the limit beyond which they cannot agree upon vertical restrictions in their contracts.

A proper understanding of vertical restraints, their necessity, and how they "behave" in the digital world can help entrepreneurs to use them rationally, leading to efficiency gains for both new business models and society at large. At the same time, national competition rules are to provide the necessary protection of markets and consumers from anti-competitive vertical restraints.

Key words: vertical agreement, vertical restraint, anti-competitive behavior, digital markets

JEL CLASSIFICATION: D41, K21.

INTRODUCTION

Almost ten years have passed since the Moldovan Competition Law was passed, but many of its concepts remain misunderstood by practitioners to this day. The Competition Council's experience since its establishment includes all types of competition infringements: the Council has investigated horizontal agreements and concerted practices in various markets, abuses of dominant position, and anti-competitive actions by public authorities. As regards vertical agreements, the Council's experience is more modest. One of the most complex cases of competition investigation involving vertical agreements was carried out in 2015-2018 when the Competition Council examined alleged

⁴ Ph.D Student, email: cparcalab@aci.md
ORCID: 0000-0003-0432-6633

anti-competitive vertical agreements in relations between supermarket chains and their suppliers. The investigation was concluded without finding any infringement and without any sanctioning decision, either due to the commitments proposed made the supermarket chains involved in the investigation or by finding no signs of violation of the Competition Law by other chains (Decision No. DA-3/15-28, 2018). The case referred to above was illustrative in highlighting the absence among businesses of a common understanding of vertical agreements' essence and where they might affect competition.

The rapid changes occurring in legal and economic relationships due to digitization and new digital business models make the correct understanding of vertical agreements even more pressing at the national level. Product suppliers could prohibit distributors with whom they collaborate from distributing their products on online platforms; producers could prohibit software developers from collaborating with other manufacturers; digital content publishers could require distributors to sell exclusively through certain app stores; digital content distributors could require publishers to lower prices as soon as they offer more favourable terms to competing distributors. These restrictions need to be considered by businesses before implementation to prevent potential consumer harm.

Competition Law defines vertical agreements as one of the forms that anti-competitive agreements may take, leading to confusion that such agreements might be illegal *per se*. Vertical agreements are indeed restrictions on contractual freedom, but they do not necessarily restrict competition; on the contrary, they may be necessary for the benefit of final consumers. Analyzing the actual or potential effects of a vertical agreement should become an economic prerogative for businesses using vertical contractual structures so that they can argue the necessity of vertical restraints for efficiency gains. Because "not every restriction on conduct is a restriction of competition, let alone a significant restriction of competition" (Niels et al, 2011).

The rapid digitization of the economy has increased the interest of competition authorities in other countries, including the European Commission, in vertical restraints used by businesses in the online environment. This has served as one of the main reasons why the European Commission is reviewing its regulations and recommendations on the application of vertical restraints by firms, resulting in the recent communication of new Guidelines on Vertical Restraints (Guidelines, 2022), in which vertical restraints used on digital platforms represents one of a subject of interest.

As a result, the issue proposed for research in this article is defined as follows:

- (1) What are vertical agreements, how can they be classified?
- (2) What is the economic necessity of vertical agreements and what is their danger for competition?
- (3) What are the anti-competitive vertical agreements identified by competition authorities worldwide in digital markets? What is the specificity of anticompetitive vertical agreements identified in digital markets? Is it necessary to amend the Moldovan Competition Law to deal with the specificities of digital markets?

METHODOLOGY

To answer the above questions, we set out to review the economic doctrine and articles of scholars in the field who have investigated various aspects of vertical agreements, including in digital markets. We also analysed existing judicial practice in countries where competition rules, including those prohibiting anti-competitive practices through vertical agreements, originated to better understand the purpose protected by these rules. We then analyse the recent experience of competition authorities around the world in investigating vertical agreements in digital markets to

determine whether there are any peculiarities of such agreements in these markets. Based on the peculiarities identified, we determine whether the current rules contained in the Competition Law and the regulations for their enforcement are sufficient to prevent, identify or counteract anti-competitive vertical agreements in digital markets.

1. Definition of vertical agreements

Vertically structured contracts are one of the essential elements of the national economy and of the market mechanism. The Moldovan market abounds in supply, distribution, agency and franchising contracts. With their help, products reach the final consumer, going through the entire value chain by means of agreements between enterprises at different levels.

Often in vertically constructed contracts, the parties agree on restrictions on the resale price of the products, the territory, and customers to which the products may be supplied or resold during the term of the contract or even after its expiry, the sources of supply from which distributors may purchase the products or services necessary to carry out the resale, etc. These restrictions are referred to in competition jargon as 'vertical agreements' or 'vertical restraints'. Moldovan Competition Law uses the term 'agreements', even though the term 'restriction' is more precise in defining the restrictive nature of these arrangements.

In the literature, vertical agreements are defined as "an alliance in which the common purpose of the parties is to increase joint profits and reduce prices for the benefit of consumers" (Hovenkamp, 2017). In most cases it is considered that the joint efforts of the supplier and the distributor in bringing products or services to the market ultimately benefit the consumer. At the same time, the specificity of vertical agreements allows participating undertakings to form commercial alliances to strengthen their positions and increase their ability to compete in different markets.

Definitions of vertical agreements can also be found in the legal regulations. Article 4 of the Moldovan Competition Law (2012) defines vertical agreements as "an agreement or concerted practice agreed between two or more undertakings each operating, for the purposes of the agreement or concerted practice, at different levels of the production or distribution process, relating to the conditions under which the parties may purchase, sell or resell certain products". The definition is identical to the one contained in Article 1(1)(a) of Regulation (EU) 2022/720.

From the above definition, the main element of vertical agreements that distinguishes them from horizontal agreements is that the parties to a vertical agreement act at different levels of the distribution chain (as opposed to horizontal agreements where the parties are competitors). As a result, vertical agreements presuppose the existence of two different markets in which the parties to the agreement participate, namely:

- (i) *the upstream market*, where the manufacturer competes with undertakings producing products substitutable for the manufacturer's products, and
- (ii) *the downstream market*, where the distributor competes with other undertakings distributing products substitutable for the distributed products.

Value chains can be of varying complexity, allowing for a multitude of vertical business interactions between different participants.

An understanding of the specifics of vertical agreements will not be complete without a comparison with the other type of agreements covered by the Competition Law, namely horizontal agreements. Horizontal agreements are made between two or more undertakings operating on the market at the same level. It has been pointed out in the literature that "[T]he conceptual distinction

between a horizontal and a vertical agreement is a significant one. Competitors meeting to discuss market prices raises considerable concerns. In contrast, meetings between a supplier and a distributor, who are necessary parties to a sales contract, are less suspicious, and they discuss prices all the time. As a result, in competition investigations of vertical restraints, the focus will be on evidence relating to the content of the agreement, whereas horizontal agreements focus on the very fact of the existence of the agreement." (Hovenkamp, 2017)

An important element inherent in vertical agreements, and their specificity as an agreement between non-competitors, including in digital markets, is the competition that they may affect. In analyzing vertical agreements it is essential to bear in mind the distinction between inter-brand competition and intra-brand competition. The competition that occurs in the upstream market is called inter-brand competition because it occurs between different producers, whose products are predominantly identified with the use of specific brands. Competition in the downstream market between distributors selling the same manufacturer's products is called intra-brand competition.

It is generally accepted that reduced intra-brand competition (between distributors of the same manufacturer) is less harmful to competition and less likely to harm consumers, especially if there is strong inter-brand competition (between different manufacturers of substitutable products). There is also less likelihood of anti-competitive vertical agreements reducing intra-brand competition. Manufacturers have no incentive to limit price competition between their own distributors, except where such a limitation would be the only way to encourage distributors to offer ancillary services or to invest in promotional activities, which would bring more benefits to consumers than limiting the possibility of price reductions. This is one of the reasons why intra-brand competition restrictions are pro-competitive.

On the other hand, reduced inter-brand competition is considered to have a stronger impact on consumer welfare. If the parties' agreements reduce competition between different manufacturers' brands, they will not be encouraged to make efforts to improve their products and equip them with features that would best meet consumer preferences. Secondly, by reducing competition between them, producers will not compete by guaranteeing the lowest price for the consumer.

As a result, **the agreement between an independent upstream company and an independent downstream company in the value chain is called a vertical agreement.**

For the purposes of competition law, and to avoid confusion between agreements and contracts for civil law purposes, it is recommended to use the term 'vertical restraint' and not 'vertical agreement', which in fact reflects the essence of a vertical agreement to restrict the contractual freedom of one of the parties.

2. Classification of vertical agreements

The case law and economic literature classify the vertical restraints according to different criteria. For the purposes of this article, we will analyze the classifications that have been reflected in the legislation of the Republic of Moldova and the practice of applying national competition rules, inspired by European case law.

(1) *Price and non-price vertical restraints*

Depending on the criterion underlying their determination, vertical restraints can be categorised into price and non-price vertical restraints.

Price vertical restraints relate to the resale price of products and services and are applied in the downstream market, restricting the ability of the distributor to freely set the resale price, irrespective of the interests of the supplier. This category includes resale price maintenance, non-linear pricing, quantity forcing.

Vertical non-price restraints are imposed on the upstream market or imposed on the downstream market and are not related to price, but to other conditions for the marketing of contract products and services. The most common non-price restrictions are exclusive distribution systems, selective distribution, non-compete obligations, or tying.

(2) *Hard-core, individually or block exempted and de minimis vertical restraints*

This classification is made based on the degree of danger to competition presented by the specific vertical restraint. Thus, depending on the degree of danger, vertical restraints can be classified as (a) hard-core restraints, (b) individually exempted restraints, (c) block-exempted restraints, and (d) de minimis restraints.

(a) The highest degree of danger to the competition may exist when the parties agree on *hard-core vertical restraints*, which are sanctioned by law and cannot be exempted. They are prohibited to protect free price competition between distributors for the benefit of final consumers and guaranteeing the unrestricted right of consumers to purchase goods and services according to their needs. When hard-core vertical restraints are under investigation, the competition authority will consider it more beneficial for the market to sanction the undertakings involved in order to prevent future similar behaviours.

The following vertical restriction is considered hard-core and anti-competitive:

- (i) resale price maintenance;
- (ii) prohibition to sell to any customer if the customer's request came without an invitation from the distributors (passive sales). The distributor must be free to respond to requests from buyers of products or services, including with the use of the Internet.
- (iii) the use of a selective distribution system where distributors are prohibited from active or passive sales to final consumers or other authorized distributors.
- (iv) a prohibition on the manufacturer procuring spare parts for its own products from selling such parts to end users or independent repairers.

(b) Certain anti-competitive vertical agreements may benefit from the *individual exemption* if they create efficiencies that outweigh the losses incurred by the anti-competitive effect. Vertical restraints include:

- (i) non-compete obligation whereby distributors undertake to resell only the supplier's products with a term exceeding 5 years;
- (ii) vertical agreements, which are not hardcore agreements, but where the parties' share of the relevant market exceeds 30%.

To benefit from the individual exemption, the undertakings involved in the above agreements must demonstrate by conclusive evidence the efficiency-enhancing criteria of the agreements, namely that:

- the vertical restraint applied contributes to improving the production or distribution of products or to promoting technical or economic progress;

- the vertical restraint ensures that consumers receive a fair share of the resulting benefit;
- it does not impose on the undertakings concerned restrictions that are not indispensable to the attainment of the objectives referred to above;
- does not afford the undertaking the possibility of eliminating competition in respect of a significant part of the products in question.

(c) Vertical restraints that may be *block exempted* are deemed to be pro-competitive, subject to certain conditions. These categories of vertical restraints are: exclusive distribution, selective distribution, recommended pricing, single branding agreements, franchising, exclusive supply agreements, upfront access royalties, category management agreements, tying agreements, resale price recommendation agreements, or maximum resale price maintenance agreements.

One of the basic criteria to benefit from the block exemption is the economic power the parties have. Thus, the vertical restraints listed above are considered block exempted if the parties to the agreement have shares of the relevant markets below 30%.

(d) Vertical restraints that are found in agreements between undertakings with insignificant economic power are considered *de minimis*, do not raise a risk to competition, and are therefore not subject to legal sanctions under the Competition Law. Undertakings participating in a vertical agreement are deemed to have insignificant economic power if the market shares of each undertaking participating in the agreement do not exceed 15% in any of the relevant affected markets.

The *de minimis* exception does not apply to hardcore vertical restraints, which will be sanctionable irrespective of the market share held by the participating undertakings.

In the literature reviewed, we did not find a classification of vertical restraints according to the distribution channels used: online or offline. Essentially, vertical restraints can be used in any medium of business collaboration, so for the purposes of this article, the classification of vertical restraints presented above is also valid for vertical collaboration in digital markets.

3. Economic reasons for vertical restraints

According to the generally accepted view in economic and competition law doctrine, vertical agreements between non-competitors, are less dangerous than horizontal agreements, between competitors (Guidelines, 2022). Vertical agreements do not in all cases have anti-competitive motives. Nor do vertical agreements always have negative effects on consumers. On the contrary, economic theory has shown that vertical agreements often contribute to advanced efficiency and consumer welfare. This is due to the complementary nature of the activities carried out by the parties to a vertical agreement, which generally implies that pro-competitive actions by one party to the agreement will benefit the other party and ultimately benefit consumers (Niels, 2011).

The study of vertical agreements has led to controversial discussions in literature as to whether such restrictions should be prohibited by competition rules. According to Cunningham (2011), since 1970, economists have developed in-depth theoretical analyses with empirical results concerning vertical agreements. The economic literature has also identified a wide variety of circumstances in which the efficiency-enhancing arguments advanced by parties to vertical agreements have not held up. However, many economists will agree that vertical restraints generally serve the purpose of making the distribution of goods more efficient, and that they raise concerns only when intra-market competition is insufficient.

Vertical agreements are generally considered 'good' or pro-competitive, provided that they do not restrict competition and their effects enhance consumer welfare. Vertical agreements are considered "bad" or anti-competitive when they cause or are likely to cause effects that are undesirable for a market economy, such as collusion, foreclosure, or the creation of barriers to entry.

Vertical agreements may be anti-competitive but still show efficiencies. For this reason, the analysis of the competitive effects of vertical agreements needs to be carried out with an detailed assessment of all market conditions facing the undertakings in each individual case. Such imprecise characteristics are the main reason for the controversial opinion regarding the initiatives for vertical agreements regulation.

The literature reviewed states that the main reason firms use vertical restraints is to eliminate market failures. The term "market failure" is used to refer to a situation where the market cannot allocate resources efficiently on its own and the "invisible hand" does not work properly for various reasons, which prevents an efficient allocation of resources (Cunningham, 2011).

Examples of market imperfections or failures leading to inefficient allocation of resources include natural monopoly, imperfect competition, information asymmetry and externalities (Lines et al, 2006), which can be addressed by various measures, including contracts between firms.

In the following, we will discuss in more detail the market failures that are solved by firms using vertical restraints, namely externalities, information asymmetries, and the hold-up problem.

(1) Internalization of externalities using vertical restraints

As defined by the OECD Glossary, externalities refer to situations where the effect of the production or consumption of goods and services imposes costs or benefits on others that are not reflected in the prices charged for the goods and services provided. In a contract with a vertical construction, such as a supply or distribution agreement, externalities can occur in both the vertical and horizontal chains.

Externalities along the vertical chain assumes that the actions of the firm operating at one level can benefit the firm at the other level. They arise because decisions and actions taken at different levels of the production or distribution chain determine aspects of the sale of goods, such as price, quality, related services, and marketing, which affect not only the firm making the decisions but also other firms at other levels of the production or distribution chain (O'Brien, 2020).

Because of the existence of vertical externalities, the distributor may not fully benefit from its efforts to increase sales (on the downstream market), as some of the benefits may accrue to the supplier (on the upstream market). Thus, in relation to the supplier, this will be a positive externalization, as the supplier's profit will increase due to the distributor's efforts on the downstream market, on resale. Conversely, outsourcing may be negative for the supplier if the distributor shows higher resale prices or does not put sufficient effort into selling the products. As a result, the supplier's profit will decrease due to actions or inactions taken by the distributor on the downstream resale market.

One of the vertical externalities frequently encountered in contracts with vertical structures is *double (or multiple) marginalization*. Double marginalization is the route taken by final products from the producer to the final consumer through a few intermediaries eager to earn revenues above marginal costs (Verouden, 2008).

For the first time, the issue of double marginalization in economics was debated by Antoine Augustine Cournot (1801-1876). Cournot studied price competition between two producers (U1 and U2) of complementary products needed to produce brass from an equal quantity of copper and zinc.

Cournot showed, that the sum of U1 and U2 prices is higher than the price a monopolist selling both products would charge (Alexandrov et al, 2018).

In another economic model, presented by Vincent Verouden (2008), double marginalization in vertically constructed contracts between independent firms is analysed.

Thus, according to the model, $D(p)$ denotes the market demand as a function of the resale price p . It is assumed that the marginal cost of production is c and that the distributor only bears the cost of paying the wholesale price p_w which it pays to the supplier. It is assumed that the manufacturer supplies the distributor with the product at the same price p_w and that the distributor can independently determine the resale price p . For a given wholesale price, the distributor will set a resale price that maximizes its profit $(p - p_w)D(p)$, i.e. it will charge a monopoly price p^m (\cdot), which is a function of the wholesale price p_w . To be profitable, the supplier will set a wholesale price that exceeds the marginal cost of production: $p_w > c$.

At the same time, due to the existence of two successive marginal indicators ($p > p_w$ and $p_w > c$), the final resale price will be too high from the point of view of the whole vertical structure: the resale price is $p^m(p_w)$, where p_w is the optimal price from the supplier's perspective, instead of $p^m(c)$, which would have been more correct, since c is the marginal cost of the whole vertical structure. The price distortion arises because the distributor in setting the resale price does not consider the effect it will have on the supplier's profit; nor does the supplier take into account the profit that will accrue to the distributor (Verouden, 2008).

Thus, double marginalization occurs when the resale price charged on the upstream market exceeds the marginal cost incurred when buying the product on the downstream market. Double marginalization can be avoided by vertically integrating the factors of production, supply, and distribution under common corporate control (as indicated in the Cournot model), or by using vertical price-based restraints. Some examples of vertical restraints that can address the problem of double marginalization in the vertical structure can be found below:

- resale price maintenance: the supplier can apply resale price maintenance by setting the resale price at $p = p^m(c)$.
- applying the non-linear price, consisting of two parts: a fixed, invariable part representing the marginal wholesale price equal to the marginal costs (c), and the second part - a flat-rate charge, the size of which will depend on the quantity of product purchased by the distributor. By this the distributor will get the full benefit of the vertical structure for each additional product sold.
- quantity forcing, whereby the supplier sets the price depending on the quantity of product bought by the distributor, setting mandatory minimum thresholds to be met by the distributor.
- all units' discount: the distributor receives a discount on the wholesale price for each unit of the product purchased if the distributor buys a certain quantity of product;
- take-or-pay clauses: unconditional obligations to buy products or services from a supplier at a certain point in the future, and in case of non-performance - to pay a penalty that would cover the supplier's losses.

According to Verouden, these resale price control methods lead to lower resale prices, increase profits for the entire vertical, and increase consumer surplus while overcoming the problem of double marginalization

In addition to vertical externalization, horizontal externalization can occur in vertical contractual constructions. According to the Guidelines, horizontal externalization may arise between distributors operating in the same market where a distributor is not able to fully reap the benefits of its sales efforts.

An example of negative horizontal externalization is *free riding*. In digital economy, free riding can occur between online and offline sales channels and in both directions. For example, customers may visit a traditional shop to test goods or services or to obtain other useful information on which to base their purchasing decision but then order the product online from another retailer. On the other hand, in the pre-purchase phase, customers may collect information from an online shop and then visit a traditional shop, using the information collected online to select and test certain goods or services and eventually purchase the product offline.

The problem of free-riding in vertical contractual structures can exist either on the upstream market, where the producer's competitors may unduly benefit from investments in the vertical structure, or on the downstream - where the distributor's competitors unduly benefit from the investments. Broadly speaking, the free-rider effect can be explained by the fact that the efforts made by the producer or distributor create benefits for companies that have not made such efforts.

Free-riding along the manufacturer's (supplier's) supply side can occur when the manufacturer (supplier) promotes the distribution of its products and invests in distribution channels: it provides training to distributors and sales staff and invests in the image and operating conditions of retail outlets. The value of such investments is diminished if the manufacturer's (supplier's) competitors benefit from the conditions thus created without making any contribution. To prevent this, suppliers may impose vertical restraints on distributors in the form of non-compete obligations, through exclusive sourcing or single branding obligations.

Free riding on the distributor's side can be destructive to both the vertical structure and consumer welfare. The most common scenario is the unwarranted reaping by low-cost or online retailers of the benefits of services provided in the distribution network, such as merchandise demonstration and testing services by trained staff of offline shops or online platforms offering pre-sales services.

In addition to the above, some distributors invest in enhancing their long-standing reputation with consumers by offering quality guarantees for the products they sell. They invest in promoting the manufacturer's brand, especially when selling luxury or prestigious products. Distributors who do not offer such guarantees, and do not invest in brand promotion, may benefit from the effort.

In addition to the above, some distributors invest in enhancing their long-standing reputation with consumers by offering quality guarantees for the products they sell. They invest in promoting the manufacturer's brand, especially when selling luxury or prestigious products. Distributors who do not offer such guarantees, and do not invest in brand promotion, may benefit from the effort.

To encourage distributors to invest in pre- and after-sales services as well as in promoting the supplier's brand, suppliers could agree in distribution contracts on vertical restrictions that would remove price reductions, such as imposing maximum or recommended resale prices, or restrict the supply of products only to distributors offering distribution services. Selective or exclusive distribution systems may be used for this purpose.

(2) *Information asymmetries*

Another market failure that can be addressed by vertical restraints is information asymmetries. Asymmetric information arises when the firm operating in one market channel has more information

than the other firm, operating in another market channel. Information asymmetry can lead to the misallocation of resources because of inefficient decision-making.

Information asymmetry occurs particularly in markets with imperfect information where differentiated products exist. Also, certain types of information may remain incomplete or imperfect, creating information difficulties between suppliers and distributors.

The existence of information asymmetry could hinder the market entry of new firms or the introduction of new products or services. When suppliers launch new products, distributors often have less information than the supplier about the likelihood of the new product being successful and may therefore build up stocks of these products at a lower than optimal level. By placing the risk of failure of new product launches on distributors, there is a risk that distributors may not have the incentive to invest in promoting new products in their distribution network, as the costs of promotion may be sunk.

To overcome this market failure, the distributor could require the supplier to pay a fee for access to its distribution network (entry bonuses, maintenance fees, payments for access to promotional campaigns). By paying the royalty, the supplier is given access to the distributor's distribution network and to the distributor's services to promote and stimulate sales of the product. On the other hand, the distributor assumes the risk of bearing the sunk costs of promoting the supplier's products if the supplier's product is not successful. As a result, access fees would increase competition for access to the distributor's network between suppliers and the distributor may be given advance notice of which products are likely to be successful, as a supplier will only agree to pay the initial access fee if it considers that there is a low probability of failure in relation to the launch of that product.

(3) *"Hold-up" problem*

The "hold-up" problem, also called the prisoner's dilemma, is another market failure that can be addressed by vertical restraints and may arise in the case of specific investments made by the manufacturer or distributor in specialized or customer-specific products or services. In such contracts, the investing firm becomes to some extent a prisoner of the other party, thus creating an imbalance of bargaining power. Because of this imbalance, and the fear of not being able to recoup their investment, companies may be less interested in investing in new products and complex markets, to the detriment of the economy and consumers (Peeperkorn, 1998).

The "hold-up" problem arises in the case of significant sunk investments borne by only one party. These investments are long-term and cannot be recovered in the short term. The investment is also asymmetric, i.e. the collaboration implies that one party invests more than the other.

To remove or prevent the risk of hold-up, the parties may agree on a vertical restraint, such as a non-compete clause, or on exclusive distribution or supply for the time necessary to recoup the investment.

As can be seen from the examples described above, vertical agreements are designed to address problems that arise when companies operating at different levels of the supply chain collaborate and are not necessarily illegal or anti-competitive. Behind vertical agreements lie economic arguments that can justify them, solving market failures, and ensuring efficient allocation of resources. Vertical restraints can thus ensure efficiency gains, and companies must be prepared to identify and argue them.

4. Vertical agreements identified on digital markets

The reviewed economic literature suggests the common understanding of the economic framework to assess the competitive effects of vertical agreements, which is used by competition authorities in both traditional and digital markets. Some authors point out that "[T]he advent of the digital age has not changed the economic concepts that have been developed since Adam Smith's *Wealth of Nations*, which make clear the role of contracts in the allocation of goods and resources in the economy (O'Brien, 2020).

In another vein, O'Brien, "[W]hile e-commerce has not created new economic constructs, there is little doubt that certain characteristic features of the digital sector (such as economies of scale, network effects), which may affect the conclusions of an economic analysis, have become more salient. These features can only indicate the greater or lesser likelihood of specific vertical restraints to harm competition, depending on the circumstances." However, it is worth considering that new technologies and the spread of the Internet, the expansion of e-commerce, new algorithmic applications, data and artificial intelligence have raised new questions about the application of vertical restraints in the digital environment, as well as concerns about the emergence of new vertical anti-competitive behaviour.

In this section, the aim is to analyse the most recent cases investigated by competition authorities in European countries, as well as by the European Commission, concerning vertical restraints used by companies in digital markets. The aim of this section is to identify whether there are any specific features or risks that vertical restraints present when applied online or through digital tools.

In analysing recent European practice, we have identified the following vertical restraints used in digital markets that have created competition concerns:

- (1) Parity obligation or most-favoured-nation clause (in the online books market, online hotel booking services market, private car insurance market);
- (2) Restrictions on the use of online marketplaces (beauty and perfumery market);
- (3) Dual pricing in online and offline markets (market for garden tools, market for household appliances, market for toys);
- (4) Imposition of resale prices (market for electronic, electrical and musical instruments).

The practices identified do not represent an exhaustive list of vertical restraints that can be found in the relationship between producers and distributors operating online, or in the relationship between them and the digital platforms that mediate their interaction. All types of vertical restraints analysed and investigated so far in offline business practices can also be found in the online environment.

In the following we present the main features of the restrictive practices identified, specifying the risks for competition, the efficiencies, as outlined in the Guidelines. We will also focus on cases investigated by European competition authorities in digital markets with regard to vertical restraints.

(1) Parity obligation or most-favoured-nation clause in online markets

One of the vertical restraints encountered in digital markets and which are under the scrutiny of competition authorities are parity obligations, also known as most-favoured-nation clauses.

This clause obliges the seller to offer terms of sale to the buyer that are no less favourable than the terms offered by the seller to other buyers. The conditions of sale subject to the parity obligation may relate to prices, stocks, availability or any other contractual conditions relating to the sale of products.

Looking at European practice, we can see that competition authorities have identified parity obligations in agreements between online intermediary service providers (digital platforms or price comparison services) and businesses selling or displaying their products through them.

Competition enforcement practice around the world reveals the following cases of investigation of most-favoured-nation clauses in digital markets:

- Parity obligations imposed by Booking.com, Expedia on hotels: Authorities in France, Italy and Spain have accepted commitments proposed by travel agents to replace the extensive parity clauses they were applying with limited parity clauses. By such clauses, the agencies required the hotels to offer them equally favourable conditions compared to the conditions the hotels offered through their own direct sales channels (Decision No. 15-D-06, 2015 (France), Decision of 2015 (Italy), Decision 596/013, 2015 (Sweden)).

The German competition authority, however, has adopted a different strategy, banning both the extended and restricted parity clauses proposed by HMS and Booking.com as a commitment (Decision B 9-66/10, 2013, Decision B9-121/13, 2015 (Germany)).

- Parity obligations imposed by Amazon.com on e-book editors: The basis of the Commission's preliminary assessment was that Amazon included parity clauses in its contracts with e-book providers. Under the parity clause, Amazon required e-book providers to inform Amazon of the more favourable terms that book providers offer on any other platform and offer Amazon terms of sale that depend on the terms offered on another e-book marketing platform.

Amazon proposed commitments, undertaking to waive parity obligations (Decision AT.40153, 2017 (European Commission)).

- Resale price parity obligations applied by Apple on the iBookstore: The Commission has investigated Apple and a number of international e-book publishers in relation to parity obligations introduced by Apple into its contracts for the sale of books through the iBookstore after it switched from a wholesale to an agency model. The Commission was concerned that these agreements were part of a strategy to increase e-book prices. The case was settled with undertakings, including a commitment from Apple not to apply any retail price parity obligations in agreements with retailers or e-book publishers for a period of five years (Case AT.39847, 2017).

An important criterion underlying the competition authorities' decisions in the above-mentioned parity obligations cases was the economic power of the platforms involved. Thus in all cases the platforms involved (Booking.com, Amazon, Apple) had shares of more than 30% in the relevant markets under investigation, which made it impossible to exempt these agreements. The competition authorities' concerns in the above cases were due to the following risks to competition created by the parity obligations applied:

(a) reduced interest for companies selling their products or services through platforms (hotels, book publishers, insurance companies) to support and invest in new and innovative alternative business models;

(b) reducing the possibility and interest of competitors of platforms to develop and differentiate their offerings through such business models;

(c) strengthening the economic position of platforms by ensuring that they have access to the best sales conditions.

From the analysed decisions, it can be seen that competition authorities in their investigations distinguish between (a) narrow parity obligations and (b) broad parity obligations. The distinction is

of practical importance, as a narrow parity obligation is considered to have less potential to affect competition than an extended one.

Thus, the narrow parity obligation relates to the sales conditions offered in the direct sales channels, and the extended ones - to the sales conditions offered in all other sales channels.

Extended parity obligations. Businesses that choose to sell their products via online platforms often use multiple platforms to reach their consumers. The use of multiple online platforms by businesses selling products may increase the share of total demand for such services that is affected by a platform's parity obligations. The use of a single platform by end consumers may mean that each online platform controls access to a distinct group of end users. This may increase the bargaining power of the platform and its ability to impose parity obligations on the retail sale of products.

Online platforms are often characterised by significant barriers to entry and expansion, which can exacerbate the negative effects of retail parity obligations on platform retailing. These markets often exhibit positive spill-over effects: new or smaller platforms may face difficulties in attracting customers as these platforms offer access to an insufficient number of end-users. Where end-users are end-consumers, brand loyalty, the use of a single platform and strategies to create a dependency on existing platforms may in turn create a number of barriers to entry.

The *narrow parity obligation* used by the online platform means that the company wishing to sell its products through this platform undertakes not to offer more favourable prices and conditions of sale through the direct sales channels of these companies. In principle, the obligations of limited parity do not limit the ability of a business seller to offer more favourable prices or conditions through other online platforms. As a result, such a parity obligation is less dangerous for competition.

However, in certain circumstances, in particular where the number of online platforms is limited, narrow parity obligations may affect the incentives of the selling firm to pass on price changes to intermediary services in their retail prices. This may lead to a dampening of competition between online platforms, which is similar to the effect of extended parity obligations.

The authorities' decisions under review also highlight that parity obligations can also have positive effects on competition. First, such clauses may be pro-competitive in that they may lead to the lowest possible retail price for the product. The clause offers the possibility to reduce negotiation costs, market research costs to check whether the best possible price or sales conditions are offered.

(2) *Restrictions on the use of online marketplaces*

Online marketplaces are an important sales channel for traders, giving them access to a large number of consumers. Selling products through online sales channels allows traders to start selling with lower initial investments.

Vertical restraints in the form of prohibiting retailers from reselling products purchased using online marketplaces may be included in contracts for the supply of products.

For the first time, restrictions on sales through online channels were examined by the European Court of Justice in the *Pierre Fabre* judgment. Members of *Pierre Fabre's* selective distribution system were required to sell cosmetics and personal care products only in traditional shops and in the presence of a qualified pharmacist.

In its judgment, the Court held that a general and absolute ban on sales through online internet channels in the context of a selective distribution network constitutes a restriction of competition by object. In the Court's view, such a prohibition "appreciably reduces the ability of an authorised distributor to sell contract products to customers outside its contract territory or area of activity. It is therefore liable to restrict competition on that market" (Case C-439/09, 2011).

The Court also held that the restriction in question could not be justified on grounds of public health and safety and that maintaining a prestigious image could not be qualified as a legitimate objective of restricting competition. A general ban on the internet as a medium of commerce functions as a limitation on active and passive sales and cannot be admitted or exempted.

The imposition of such restrictions can be efficiency-enhancing and therefore beneficial to competition by providing the following advantages to the supplier, which ultimately benefit the distributor as well as the consumer, as they ensure the protection of the image and reputation of the supplier's brand, ensure the provision of high-quality pre- and post-sales services, and deter and reduce the risk of the sale of counterfeit products.

The main risk to competition arising from restrictions on the use of online marketplaces is the reduction of intra-brand competition at the distribution level. Thus, some distributors, who use online sales channels to identify buyers, may be deprived of such an opportunity, i.e. not be able to participate in exerting competitive pressure on other authorized distributors.

(3) Application of dual pricing systems

The application of dual pricing involves requiring the buyer to pay a different wholesale price for products sold online than for those sold offline.

Among the first cases involving dual pricing schemes to come under the scrutiny of competition authorities is the practice of the German competition authority, which in 2013 investigated the discount schemes applied by Gardena and Bosch Siemens Hausgerate. Gardena offered rebates to its distributors, which were calculated according to the distribution channel used. The German competition authority found that Gardena's staggered rebate scheme was structured in such a way that only distributors selling through traditional shops could benefit from the full rebate. Similarly, Bosch's rebate scheme disadvantaged dealers who used hybrid marketing channels compared to those who sold household appliances exclusively through traditional offline shops. In both cases the Authority concluded that the rebate schemes were vertically anti-competitive restrictions and the investigation concluded with Gardena and Bosch offering commitments to remove any discriminatory elements in their rebate schemes (Decision No. B5-144/13 (Gardena, Germany); Decision No. B7-11/13 (Bosch Siemens Hausgerate, Germany)).

Another case investigating dual pricing schemes took place in France in the Lego case. This company implemented a discount policy that actually disadvantaged its online distributors. Lego's discount policy involved offering additional discounts to distributors selling through traditional stores to compensate them for certain investments, such as additional investment in shelf space. In doing so, the French authority found that Lego essentially charged a better selling price to offline or hybrid distributors compared to purely online distributors. The Authority concluded that this vertical agreement was likely to have anti-competitive effects because by disadvantaging online distributors, Lego contributed to reducing the competitive pressure they could exert on offline or hybrid distributors. Following the preliminary findings of the franchising authority, Lego submitted commitments, agreeing to modify its rebate scheme (Decision No. 21-D-02 (Lego, France)).

Thus, as can be seen from the cases cited, the application of dual pricing schemes in the online environment may incentivise or reward an appropriate level of investment in online or offline sales channels. This is in particular possible when the wholesale price differential is reasonably related to the differences in investment and costs incurred by the buyer in making sales through each channel. Similarly, the supplier may charge a different wholesale price for products to be sold through a

combination of offline and online channels if the price difference takes into account the investment or costs related to this type of distribution.

However, where the wholesale price differential has the object of preventing the effective use of the internet by the buyer to sell the contract goods or services to certain geographic areas, or to certain buyers, such a restriction may affect competition. This would be possible, for example, where the wholesale price differential makes online selling unprofitable or where the dual pricing system is used to limit the quantity of products made available to the buyer for sale online.

(4) Resale price maintenance

Resale price maintenance represents one of the most discussed vertical restraints. With the primary purpose of eliminating double or multiple marginalization, this restriction can have serious repercussions on competition, which is why competition authorities are vigilant in detecting them.

The European practice of examining cases concerning the application of resale price maintenance in online markets, reveals the following cases.

In 2018, the European Commission concluded its investigation into consumer electronics manufacturers Asus, Denon & Marantz, Philips, and Pioneer, imposing a total fine of €111 million. The Commission found that the companies had limited price competition between distributors "by restricting the ability of online retailers to set their own resale prices for widely used consumer electronics products such as kitchen appliances, notebooks, and hi-fi products", leading to an increase in consumer prices. The use of algorithms to implement and enforce resale pricing practices was a central element of the Commission's analysis. As the Commission explained at the time of the opening of the investigation, "the effect of these price restrictions may be aggravated by the use by several online retailers of pricing software that automatically adjusts resale prices to those of their main competitors. It is, therefore, possible that the alleged infringement had a wider impact on overall online prices for the consumer electronics products in question." (Commission Communication, 2017).

In European countries, attention is also drawn to the imposition of resale prices in the online space. For example, the UK competition authority has fined a supplier of commercial refrigeration equipment over £2 million (Decision No. CE/9856-14 (ITW Limited, UK)) and a manufacturer of bathroom accessories over £780,000 (Decision No. CE/9857-14 (Ultra, UK)) for preventing retailers from advertising or selling products online below a certain price. The competition authority found that these practices essentially restricted retailers' freedom to set the price for online sales individually and therefore amounted to an illegal resale price maintenance clause.

In 2017, the UK Authority fined a supplier of domestic light fittings £2.7 million for dictating the minimum prices at which its distributors could sell products online (Decision No. 50343 (National Lighting Company Limited, UK)). National Lighting Company's agreements with its distributors prevented the sale of its Endon and Saxby brands below a certain minimum at the resale level.

Other cases examined by the UK competition authority concerning resale price maintenance include:

- imposing a fine of £3.7 million on digital piano and keyboard supplier Casio for imposing online resale prices over a five-year period from February 2013 to April 2018;
- imposing a fine of £4.5 million on guitar manufacturer Fender Musical Instruments Europe Limited and its US parent company, Fender Musical Instruments Corporation.
- fining Roland, a supplier of electronic drum kits, and Korg, a supplier of synthesizers and high-tech musical equipment, £4 million and £1.5 million respectively.

Thus, resale price maintenance is a hardcore restriction and involves agreements whose direct or indirect object is to restrict the distributor's ability to determine its resale price, including those which set a fixed or minimum selling price that the buyer is obliged to charge. Analysing the decisions of the competition authorities mentioned above, one can see the facilitating effect that the online environment, the Internet and artificial intelligence algorithms have on this restriction. With their help, firms can implement and supervise systems of imposing and maintaining resale prices, which is essential for such an anti-competitive practice to succeed.

As a result, the online environment and artificial intelligence algorithms may increase the risks to competition traditionally posed by resale price maintenance, including:

- facilitating collusion between firms by increasing price transparency in the market, which makes it easier to detect the collusive equilibrium breaker by reducing prices;
- mitigating competition between producers and/or between distributors, in particular where producers use the same distributors for their products and the restriction is applied by all or many of them;
- preventing competition between distributors by preventing the emergence or expansion of new, more efficient forms of distribution, thereby reducing innovation in distribution;
- foreclosing smaller competitors;
- elimination of intra-brand price competition by preventing some or all distributors from reducing their selling price for the brand in question, leading to an increase in the price for that brand.

CONCLUSIONS

As a result of the research carried out in this article, the conclusions are as follows:

1. A vertical agreement is the agreement between an independent upstream undertaking and an independent downstream undertaking. For the purposes of the Competition Law, and to avoid confusion between agreements and contracts for civil law purposes, it is recommended to use the term 'vertical restraint' and not 'vertical agreement', which in fact reflects the essence of a vertical agreement to restrict the contractual freedom of one of the parties. There is no separate definition for agreements concluded in digital markets.

2. There are several criteria for classifying vertical agreements. The economic literature prefers the classification according to the price criterion, thus classifying vertical agreements into the price (resale price maintenance, price parity obligations, dual pricing systems), and nonprice vertical agreements (exclusive distribution, selective distribution, non-compete obligation, exclusive supply, etc.).

In the legal literature, more emphasis is placed on the criterion of the threat to competition posed by the vertical agreement, according to which vertical agreements can be classified into hardcore vertical agreements, individually exempted agreements, block exempted agreements and agreements of minor importance.

No distinct classification of vertical agreements has been identified based on the environment in which the vertical collaboration of undertakings takes place. Thus, the same classifications will apply to vertical agreements used in the online space.

3. The issue of the harmfulness of vertical agreements is extensively debated in the literature. There is a distinction between the Chicago school and European competition law enforcement doctrine. Thus, according to the Chicago school, vertical agreements must be presumed lawful, if it is not shown otherwise. The European doctrine, however, prefers a more pragmatic approach, arguing for the need to analyse vertical agreements that restrict competition through the individual exemption criteria to determine whether the efficiencies outweigh the threat to competition.

4. Vertical agreements are used for economic purposes necessary for undertakings, namely, to eliminate market failures. Most often, vertical agreements are established to prevent double marginalization, remove information asymmetry in the market, or address free-riding or significant sunk investments.

5. In the Republic of Moldova, we have not identified any cases of investigation of vertical restraints in digital markets. However, competition authorities around the world are targeting business practices carried out by companies in the online space or using digital tools. Practices involving vertical restraints and giving rise to competition concerns, detected in digital markets and committed with the help of digital tools, are the most favoured nation clause applied by digital platforms towards customers selling their goods or services through the platform; prohibition of online sales; application of dual pricing systems; resale price maintenance; exclusivity clauses.

From the European judicial practice and the European countries analysed, it appears that competition authorities when investigating vertical restraints have used the same investigative tools used in traditional markets. The regulatory framework available to European authorities is sufficient to prevent and remedy anti-competitive practices committed with the use of vertical restraints by undertakings.

REFERENCES

1. Alexandrov, A, Pittman, R, Ukhaneva, O (2018). Double Marginalization in the Pricing of Complements: The Case of U.S. Freight Railroads.
2. [alexandrov_pittman_ukhaneva_royalty_stacking.pdf \(northwestern.edu\)](#);
3. Cunningham, S. Understanding market failures in an economic development context. [372_mm04_market_failure_final.pdf \(beamexchange.org\)](#)
4. Hovenkamp, H. (2017). Principles of Antitrust. *St. Paul, West Academic Publishing*.
5. Lines, D., Marcouse, I., Martin, B. (2006). The complete AZ business studies handbook. 5th ed. London: Hodder Arnold.
6. Niels G., Jenkins, H., Kavanagh, J. (2011). Economics for competition lawyers. Oxford University Press.
7. O'Brien, D. (2020). The Economics of Vertical Restraints in Digital Markets. [The Economics of Vertical Restraints in Digital Markets by Daniel P. O'Brien :: SSRN](#);
8. Peeperkorn, L. The Economics of Verticals. (1998) [Europa/Competition/The Economics of Verticals](#).
9. Verouden, V. (2008). Vertical agreements: motivation and impact. [1 \(europa.eu\)](#);
10. **Legal Regulations**
11. Competition Law of the Republic of Moldova No. 182/2012, [LP183/2012 \(legis.md\)](#);
12. Regulation on Assessment of Anticompetitive Vertical Agreements No. 13 dated 30.08.2013, [HCC15/2013 \(legis.md\)](#);
13. Guidelines on Vertical Restraints (2022/C 248/01) communicated by the European Commission [Microsoft Word - guidelines_vertical_en.doc \(europa.eu\)](#);
14. [OECD Glossary of Statistical Terms - Externalities - OECD Definition](#).
15. **Case Law**
16. Decision No. DA-3/15-28 dated 24.05.2018 [Decizii | Consiliul Concurenței \(competition.md\)](#).
17. Decision No. 15-D-06 dated 21.04.2015 (Booking.com), France, [Décision 15-D-06 du 21 avril 2015 | Autorité de la concurrence \(autoritedelaconcurrence.fr\)](#);
18. Decision dated 21.04.2015 (Booking.com), Italy, [Cases and Precedents \(globalcompetitionreview.com\)](#)
19. Decision No. 596/013 of 15.04.2015 (Booking.com), Sweden, [13_0596e.pdf \(konkurrensverket.se\)](#);
20. Decision No. B 9-66/10 dated 20.12.2013 9 (HRS), Germany, [\(bundeskartellamt.de\)](#);
21. Decision No. B9-121/13 dated 22.12.2015 (Booking.com), Germany [B9-121-13.pdf \(bundeskartellamt.de\)](#).
22. Case AT.40153 E-book MFNs and related matters (Amazon) [40153_4392_3.pdf \(europa.eu\)](#)
23. Case C-439/09 – Pierre Fabre Dermo-Cosmétique SAS, EU:C:2011:649 (Pierre Fabre), [CURIA - List of results \(europa.eu\)](#)
24. Decision No. B5-144/13 (Gardena, germany), [B5-144-13.pdf;jsessionid=0188BF8A423E524FD5ED279D664D81A9.1_cid371 \(bundeskartellamt.de\)](#);
25. Decision No. B7-11/13 (Bosch Siemens Hausgerate, Germany), [B9-121-13.pdf \(bundeskartellamt.de\)](#)

26. Decision No. 21-D-02 (Lego, France), [Décision 21-D-02 du 27 janvier 2021 | Autorité de la concurrence \(autoritedelaconcurrence.fr\)](#);
27. Decision No. CE/9856-14 (ITW Limited, UK), [Commercial catering equipment sector: investigation into anti-competitive practices - GOV.UK \(www.gov.uk\)](#)
28. Decision No. CE/9857-14 (Ultra, UK), [Bathroom fittings sector: investigation into anti-competitive practices - GOV.UK \(www.gov.uk\)](#);
29. Decision No. 50343 (National Lighting Company Limited, UK), [Light fittings sector: anti-competitive practices - GOV.UK \(www.gov.uk\)](#)
30. Decision No. 50565-2 (Casio, UK), [Digital piano and digital keyboard sector: anti-competitive practices 50565-2 - GOV.UK \(www.gov.uk\)](#)
31. Decision No. 50565-3 (Fender, UK), [Guitars: anti-competitive practices 50565-3 - GOV.UK \(www.gov.uk\)](#);
32. Decision No. 50565-5 (Roland, UK), [Electronic drum sector: anti-competitive practices 50565-5 - GOV.UK \(www.gov.uk\)](#).

CZU: [316.46:331.106.42]:316.347
DOI: <https://doi.org/10.53486/dri2022.05>

LEADERSHIP – A MECHANISM TO OVERCOME THE CULTURAL DIFFERENCE IN NEGOTIATION

GHILEȚCHI ZORINA⁵

Abstract: *Understanding deficiency in negotiations is determined by the material ignorance of cultural differences. Knowing the ethnic/ cultural profile is a cooperation platform between two countries/ cultures. Reversed axiom means that the absence of strategy in this direction damages the negotiation process. Starting from three cultural paradigms of scientific researchers we have the opportunity to forecast cultural patterns of our partners, being conscious of our ancestral „resources”. The mechanism that equilibrates cultural dispute in a communication process between different parties is leadership.*

Key words: *difference culture, culture paradigm, negotiation, leadership*

JEL CLASSIFICATION: A13; A14; Z1; Z13.

INTRODUCTION

It seems that **the law of diversity** (linguistic *ab initio* culminating in ethnic segmentation *ad finis*), as the legend of Tower of Babel tell us, constitutes one of the greatest challenge of the contemporary period. As a result, **cultural diversity** with its effects has activated the energy to search for the antidote to all that is stifling factor, promoting **the culture of cooperation**. In our case, we believe that the **compensatory mechanism** that would overcome this lack of understanding in communication is **negotiation**. The operational definition, which demonstrates that negotiation is a perspective of opening a relationship, promotes the following ontological approach „*is an activity that brings two or more interacting actors face to face in search of an argument to end differences, create, maintain and develop a relationship*” [3, p. 8].

The interaction, conditioned by the search for balance between two heterogeneous parties, begins as soon as we know the reality of the other, seen as a form of organization of his experience, especially a condition that ensure the construction of negotiation based on cooperation. The request for the proposed objective directs us to *the knowledge of the implicitly ethno- psychological cultural aspects in the context of the negotiations*. **The strategy that responds to the invoked requirements is to approach the participants in the negotiations as promoters of a culture**. The foundation of the descriptive and analytical organization of the differences in cultural paradigms offers the development of an explanatory and predictive profile in terms of negotiations, starting from *the hypothesis that the ideal of carrying out negotiations with mutually beneficial purposes requires knowledge of the cultural environment to which the partner at the dinner table is „obedient” negotiations*. Collaterally, the research verifies another track of study related to the **axiom of direct interdependence between the cultural environment of a country and the power to assert its economic interests, thus creating a basis for discussion for the importance of leadership development**.

⁵ Ph.D Student, email: ghiletchi.zorina@ase.md
ORCID: 0000-0002-1013-7524

PHENOMENOLOGY OF THE CONCEPT „CULTURE”

The first step in this research approach is the definition of culture, in our view, the only framework for coagulation and forging of values, norms, social axioms historically solidified and impenetrable as a power of cohesion. The word „culture” comes from the Latin *culture, ae* (feminine noun) and means „work in the field” sharing the semantic unit with other morphological extensions **colo, cholere** (verb) „to work the fields, to take care of, to decorate, to fulfill, to keep, to honor, **cultus,-us** (masculine noun) „female way of dressing ,care of words (style)” [6, p.153]. The „agricultural” origin of the word is still marked today by the used expression „agricultural crops”. At the same time, the etymological interpretation allusive favors the understanding derived from our everyday life for the phrase „man with great culture” or „cultivated man”, i.e. adorned with qualities, educated, and vice versa, through dichotomy, which demonstrates primitivism, bluntness, a threshold different from everything what is meant by mental and spiritual care, all of which can be accessed on the condition of „work” submitted. The term „culture” as a scientific notion appears in the German language approximately in the century the eighteen. Already becoming a permanent concern of human civilization, the **concept of culture** has always been **associated with the self-development of man and society**.

Probably precisely for this reason, culture is the instrument that in a significant way marks the stages of the historical development of mankind. The historical evolution of this concept determined the scope of the definitional aspects it includes: linguistic, structural, genetic, descriptive, normative, etc. foreshadowing **three relational nodes namely nature, man, value**. The center of this triumvirate is man, thus emphasizing that **any culture system is a product of his action**, after which others determine the value of the effort made. The truth of what has been said is reinforced by the following definition for culture „The totality of material and spiritual values created in the process of social-historical practice...” [1, p.44].

The statement is relevant for the type of problem discussed because it brings us to the understanding of **the genesis of culture** through the lens of the „**challenge-response**” theory when physical (climatic, geographical) or social factors (conflicts, ideologies, wars, epidemics, etc.) impose the adequacy of the „response strategy” according to these „provocateurs” thus participating with the resource of the ethno-genetic material in **the great mystery of the constitution of its cultural-psychological profile** as a whole, especially in its generative substrate, the ethnic consciousness. Culture becomes a response to what we call „reality” from the outside and a „struggle” to that from the „inside”. In this way, there is a need to highlight one of the characteristics of culture to be super-organic, that is, which is able, to create a mechanism of „transmission of cultural elements different from that of biological heredity” [7, pp.9-12]. The conclusion brings us closer to the accepted **definition of culture as „the measure of the mastery of the forces of nature and spiritual forces**, as well as their use in social progress. This measure highlights the level of development of society and man...” [7, p. 15]. In these conditions **culture** manifests itself **as an product of human activity** in which man is at the same time subject and object of his actions, justifying the configuration of the two dimensions of culture: **the objective dimension aggregated to its material structure** (of influence on the world of objective existence) and **the subjective dimension aggregated to its spiritual structure** (the formation and affirmation man).

As a result, the generic pattern of **each culture** in all its forms of manifestation includes a priori **the following functions: 1.administration of the sacred, 2.defense, 3. reproduction.** In terms of negotiations, the „decryption” of these functions can only be accomplished by knowing the cultural environment of the party involved, which means a preparation to accept a cultural difference (values, norms, social axioms) as well as to generate a behavioral pattern that agrees with this cultural environment. According to our expectations, we also create a platform for cooperation between two parties in negotiations.

A HISTORICAL PRETEXT FOR KNOWING THE CULTURAL DIFFERENCE

A first step in mediating a cooperative effort with someone else starts with identifying your own profile. The tradition in this sense was set, we believe, by Dimitrie Cantemir in „Description of Moldova” (1714) at the request of the Berlin Academy of Sciences, the content of which respects the paradigm of the analysis of a cultural identity. The writing of the work demonstrates the pronounced interest of the stranger in knowing us. Even today, the seventeenth chapter „Năravurile moldovenilor” with its memorable fragments „at the beginning of the fight they are always very brave, and in the second they are softer...rarely anyone dares to start the third time”, „when they see that their efforts are in vain, they repent for what they have done...”, „Moldovans are not only not only not lovers of learning, they even hate it...”, „ they believe that learned people lose their minds..”, a chief is chosen, an old man and honest by all ..”, „the face with which they receive foreign guests and travelers is worthy of the highest praise..” [2, pp.124-129]. The scholar’s elaboration has a phenomenological-hermeneutic projection even if in some places there the perception of a strictly empirical approach. To what extent we have exceeded this description we can trace by referring to extracts from contemporary sources” often excessive in their emotional manifestation... They are hospitable...”, „concerned with everyday worries... they are clever in choosing ways to convince a partner to accept”, „the Achilles heel of Moldovans is competence and rigor... they quickly prepare for activities that require prior work thorough, and if they set out to do, they give up postpone the achievement because **in the system of archetypes the models to prepare and make a decision, and assume responsibilities are missing.**” [3, pp.173-175]. The source completes the profile with an essential addition to our research topic „the situation when on the other side of the negotiation table there is a partner from a less known environment... make him dependent on stereotypes and opinions that are largely subjective and even harmful to effectiveness of negotiations. At the same time, the cited sources lead to the need to identify a resource element what would contribute to the meditation of that „anomaly” related to the lack in the system of archetypes of models for making and assuming the decision so necessary in a negotiation process.

The reproduced sources presuppose, in our opinion, the identification of way of „reconciliation” of the past with the present, having as a pretext the interest for the other side which has already undertaken a path of „closeness” in this sense. In the following we will create, metaphorical speaking, a Description of Germany, being prompted a historical „duty” to know ourselves nearly” as well as by the intention to pursue one of the most efficient economies in the world. Along with these objectives we have a motivation of the context we live in. It is about the Moldova- German bilateral negotiations regarding the provision of assistance for the technical and financial development of the Republic of Moldova, which took place on 25.11.2012, with a deadline of 25.11.2026 [8].

Germany, a country of economic miracle, succeeded more than any other country in rebuilding the destroyed infrastructure after Second World War, becoming the fourth largest trading power in the world, a member of G7 group countries. The unification of the country on October 3, 1990, a year after the disintegration of the Eastern Bloc, was truly a new challenge: the standard of living and economic growth of the FRG population of 60 million inhabitants had to be brought to the same level as the 17 million citizens of the GDR. On January 1, 2021, the population of Germany represented 83, 155, 031 people. Administratively divided into 16 federal states (Lander), Germany promotes a market economy that takes social needs into account. The country's constitution guarantees the free expression of personality and encourages private initiative by guaranteeing the protection of private property [9]. According to the country's GDP statistical data, in 2021 the GDP per capita reaches 35,290 euros versus GDP of the Republic of Moldova per capita 3, 839 euros in 2020, with a population of 2, 604 million on 01.01.2022. The context of the indicators foreshadows an inflation rate of 3,2% in 2021 and in the spring of 2022 exceeding the limit of 5% the maximum in the last 29 years, reaching 6,5% against the background of inflationary explosions in many countries, without exception the Republic of Moldova in the same time attested the inflation rate of 29,5 % [10,11,12].

The figures presented are not simple quantities, rather they are an invitation for those who are interested to see what they hide, observing the mechanism of relational connections between the cultural environment (values, norms, social axioms) and the results obtained in the promotion of social and economic policies. For this purpose, to begin with we propose to approach the subject through the prism of scientific studies in the ethno-cultural field.

Three major paradigms of cultural environment analysis

There are three major paradigms of cultural environment analysis, which through cross-cultural psychology analyses or other types other types of cross-cultural studies carried out on a large scale, have studied cultural profiles for most countries/cultures of the world in such an endeavor: **Hofstede** and his collaborators (2010), **Schwartz** (1992, 2003), **Inglehart and Welzel** (2010) [4].

The Model of the six psycho-cultural dimensions elaborated by Hofstede.

According to Hofstede and his collaborators, the cultural environment of a country can be described in terms of six fundamental dimensions, applied at the country/culture level, not at the individual level. Each dimension has a standard score between 0 and 100, with a mean of 50, with countries being compared to each other and/or relative to the standard score. The model developed by Hofstede is established based on the analysis of experts, through the questionnaire „The Values Survey”, 2010-2014.

Collectivism /individualism. According to Hofstede, an individualistic culture emphasizes individual achievement and rights, which must be thought of and supported autonomously and assertively. In an individualistic culture, the individual expresses his own desires and goals. In a collectivist culture, the individual's behavior is influenced by his position in a group, often the family, without being the only one. The individual often expressing his wishes and goals in the form agreed upon by the collective. Individualism is often associated with competition, uniqueness, innovation, responsibility, while collectivism is associated with harmony and consensus. The term individualism does not refer to selfishness, as we tend to use it in common parlance, but to autonomy/independence. **Countries/cultures where there is a higher level of individualism tend to have an increased level of social and economic capital.** Social capital is expressed through heightened civic engagement, strong interpersonal relationships, cooperation, trust in people. Thus, individualism, stimulated by

modernization, does not lead to social disintegration, but on the contrary to interpersonal trust and to the growth of social solidarity and cooperation. Also, in an individualistic country/culture the mobility and wealth of individuals is greater than in a collectivist one. Despite what one would think through common logic and perception, the level of loneliness is higher in collectivistic cultures compared to individualistic ones. Countries oriented towards collectivism are China-20, Turkey-37, Russia- 39, Austria-55, Germany-67, Italy-76, Hungary-80, Great Britain -89, USA- 90. Among the EU countries, Only Bulgaria, Greece, Portugal, Romania have a collectivist profile.

Femininity /masculinity. According to **Hofstede, a masculine culture promotes assertiveness, heroism, social achievement, success and material reward, while a feminine culture is consensual, based on cooperation, modesty, quality of life**, looking after weak persons. In a masculine culture gender differences and social tasks are more pronounced/ stronger. Countries/cultures where there is a higher level of masculinity tend to have a higher level of individualism. In the model developed by Hofstede, Romania has a score of 42 (between 0 femininity and 100 masculinity), which positions Romania as country characterized by femininity. Countries/cultures most defined by masculinity are (in descending order): Slovakia 100, Japan 95, Hungary 88, China 66, Germany 66, Poland 66, UK 66, USA 62. Countries/cultures defined femininity Sweden 5, Norway, Finland 26, Portugal 31, Russia 36, Bulgaria 40, France 43 [4, pp.78-79].

Power distribution/concentration. Cultures with a low distribution of power readily accept hierarchies as normal, without questioning them or asking for much justification for their existence. Countries/cultures with a high distribution of power accept hierarchies more as a convenient form of social organization, but which must be based on permanent consultation and democracy. Increased concentration of power is associated with corruption and unequal distribution of national resources. Romania has a score of 90 (between 0 power distributed and 100 power undistributed) on this index, which shows it is a country with a low distribution of power, high concentration of power. Nordic countries/cultures Canada and USA with index 40 have increased power distributed, Latin African countries (except Argentina) have increased power concentration.

Avoiding / engaging uncertainly. According to Hofstede, this index refers to how and unforeseen situations. Certain countries/cultures have a low uncertainly avoidance index. Members of these cultures are pragmatic and do not place much emphasis on rigid and detailed regulations, readily accepting uncertainly, change, and new and unstructured situations. Certain countries have a high level of uncertainly avoidance. Members of these cultures are often more emotional, and try to reduce the anxiety generated by uncertainly by using rigid rules and panning, which being defensive are often too inflexible and do not work. People of a culture characterized by a low level of uncertainly avoidance do not easily accept new ideas and behaviors, security being very important.

Thus Romania has a score of 90 (between 0 non-avoidance and 100 avoidance), which places it in the category of countries/cultures with a high degree of uncertainly avoidance. As the scientists inform us, the USA has an index of 42, China 42, Sweden 29, in addition to these countries, Romania appears with a conservative culture, so less open to change.

Short-term orientation/long-term orientation. According to Hofstede, cultures/countries dominated by long-term orientation stimulate in individuals pragmatic, future-oriented values, adaption, persistence, and desire for reward, their members tend to respect traditions and social obligations, being used to sacrificing elements of the present for the future. Cultures dominated by short-term orientation are oriented toward the past and present, and members tend to respect traditions and social obligations, but seek rewards practically in the present and less willing to make great

sacrifices in the present for the future. Romania has an intermediate score of 52 (between 0 short-term orientation and 100 long-term orientation), which shows some balance China 96, Hong Kong 96, Japan 88, USA 26 [4, pp.98-101].

Repressive/ indulgent style. According to Hofstede, certain cultures are indulgent towards personal gratifications (ex. satisfaction of needs and desire) while others control them through strict norms. Romania has a score 20 (between 0 repressive model and 100 lenient model), which shows a more repressive country/culture. Indulgent culture dominates especially in Latin America, African countries, the Anglo-Saxon environment and the Nordic countries. The repressive environment dominates in Asian, Arab, and Eastern European countries/cultures. Even if causes appear, notes Daniel David, that can change cultural profiles, they remain stable, changes of this kind are relative, slow. There are a number of factors that accelerate the individual change of a country/culture, for example a major infusion of financial capital, sustainable in the long term in an economy of a collectivist country, can stimulate the development of social capital and individualistic profile [4, p.102].

Generalizing, the six dimensions included in the paradigm of the analysis of the cultural profile related to the country, explain the phenomenon of the collective consciousness formed by a quantum of existence as space and time and which manifests itself as separate attitudes of the individual as a component part of a whole, regarding the status, role, power, representativeness, future, value. **The Republic of Moldova, by reference to cultural affinities with Romania**, has a collectivist, feminine culture profile, with a focus on power, with a predisposition to avoid uncertainty, with a balance between short and long-term orientation, with a repressive style of manifestation.

In what follows, when presenting **the second cultural paradigm**, we will insist on certain data in order to expand the knowledge of the cultural difference in order to capitalize on them in terms of negotiations. **For comparison with the Republic of Moldova, we chose seven countries:** Switzerland, Germany, Poland, Russia, Romania, Spain, Ukraine. Their choice depended on several criteria: 1. availability of information, 2. geographical neighbors of RM, 3. Latin family, 4. cultural/linguistic kinship, 5. history with common elements, 6. **centers of economic power** at the international level.

Schwartz' s model of universal values (second paradigm)

The model identifies general human core values and the relationships between them, applicable at the country/culture level as well as individuals. In the initially elaborated model, the 10 values are represented in a circle, divided into 9 sectors, the Tradition sector is together with Conformity, which denotes in the scientist's opinion that people tend to keep Tradition, seen as a of conformity. The more developed the countries, the more stable and better represented the model is. So those 10 general values are: **Security, Power, Achievement, Hedonism, Stimulation, Self-determination, Universalism, Benevolence, Tradition–Conformity**. To control for inter-individual differences, the scores were scaled by the authors by averaging the individual responses (all are close to „1”), and the resulting score reflects the value relative to the others. The assessment was made on nationally representative samples from the European Social Survey/ESS.

Table 1. Schwartz’s model (designed in a synthesized format by the author)

Values	List of generally values, applicable at the country/culture (there subcategories)
1	Security (health, social order, sense of belonging, cleanliness, return of favors, family safety, national security)
2	Power (public image, social recognition, authority, well-being, social power)
3	Achievement (influence, success, ambition, being smart/capable)
4	Hedonism (pleasure, enjoying life)
5	Stimulation (boldness, varied/exciting life, seeking novelty/challenging in life)
6	Self- determination (self-respect, freedom, creativity, independence, curiosity, choosing one’s own goals)
7	Universalism (oneness with nature, equality, openness, wisdom, inner harmony, peace, social justice, environment protection, openness)
8	Benevolence (spiritual life, forgiveness, honesty, meaning in life, true friendship, responsibility, mature love, loyalty, being helpful)
9	Tradition (devotion, detachment, moderation, modesty, respect for tradition, to settle for little)
10	Conformity (self-discipline, politeness, obedience, making parents proud)

Source: D. Daniel, *Psychology of the Romanian People. The psychological profile of Romanian in a cognitive-behavioral monograph* [4, p. 103].

Thus, our intention to the analysis cultural difference by capitalizing on the Schwarz model highlights an interpretative specification offer regarding the selected countries.

Table 2. Scaling of general human values according to Schwarz’s model (designed in a synthesized format by the author) seen by country/culture option. The data selected from the the invoked source.

Countries	1	2	3	4	5	6	7	8	9	10
Switzerland	1,05	0,78	0,88	1,04	0,82	1,16	1,22	1,22	1,03	0,88
Germany	1,09	0,79	0,91	0,99	0,8	1,14	1,16	1,16	1	0,93
Spain	1,18	0,77	0,82	0,91	0,79	1,1	1,2	1,23	1,07	1,03
Russia	1,22	0,96	0,97	0,83	0,77	1,05	1,13	1,13	1,07	1
Romania	1,12	0,95	1	0,8	0,79	1,03	1,1	1,1	1,02	1,06
Ukraine	1,22	0,94	0,9	0,81	0,78	1,04	1,18	1,18	1,07	1,08
Poland	1,16	0,86	0,93	0,8	0,84	1,06	1,16	1,14	1,08	1,1

Source: D. Daniel, *Psychology of the Romanian People. The psychological profile of Romanian in a cognitive-behavioral monograph* [4, pp. 104-108].

Following the analysis of the table, we notice that the highest average of 1.22 found for the values Security, Benevolence and Universalism, respectively the column with the lowest averages belongs to the general value Stimulation. Countries with the highest averages for Security retain the highest averages for another Power values. On the contrary, the Power value suffers distortion between its invocation and perception if we refer to the Theory of Stereotypes, following in the table the averages for Germany and Switzerland (0.79 and 0.78) versus Russia with an average of 1.22. With closer look at the empirical approach, we recognize that the general idea of efficiency, the power to succeed, is consistent with German culture. **As an example, we have numerous examples of advertising promoting German ethnocentrism, with a focus on „German quality”. Regrettably, sometimes on this background xenocentrist attitude towards one’s own country/culture is**

stimulated. To what extent this attitude influences the decision-making behavioral pattern remains to be seen. For the moment, the paradigm of developing leadership models that would contribute to promoting a culture of efficiency is a solution in this sense. On the edge of the same table, we find examples of cultural axioms if we refer to headings 7 and 8 (Universalism/Benevolence), expressed through a numerical parity in the case of Switzerland, Germany, Russia, Romania, Ukraine.

So, returning to the „description” of Germany, we observe that at averages past 1.0, along with those noted, there is also Self-determination, a value that, by resorting to the existential experience of each of us, grounds the action or inaction in achieving the goal, when collateral prepares the motivation to overcome unpredictable situations. We observe a cultural difference in this case with Romania registering with the lowest score.

Inglehart and Welzel’s model, based on the World Values survey (2010-2014)

Inglehart and Welzel made the profile of a large number of countries/cultures, through the prism of two axes as a complement to the data from the World Values Survey, a profile that explains 70% of the variance of the differences between the countries/cultures analyzed. The first axis includes traditional versus secular values. **The traditional** ones are: religion, marriage, obedience, national pride; **the secular** ones refer to reason, humanism, tolerance. The second axis: survival values (physical and economic security) versus self-expression values (equal opportunities, freedom, autonomy) [4, p.110].

From the data we have, from the cited source, we make certain observations and conclusions with reference to the profile of the countries that we have included in the reference list above.

So, on the axis of secular values (a mix of Orthodox countries and Catholic Europe) we have *Germany, Switzerland, Spain, Poland, Romania, Russia, Ukraine, Moldova*, **the first five of which countries with high and medium incomes; the last three are included in the list of those with medium to low incomes. On the dimension of the axis analyzed with traditional values**, Islamic countries (such as Turkey, Iraq, Indonesia, Morocco, Egypt, etc.) and Latin America are included, foreshadowing the category of low-income countries and some of the high-income category forming the block of English-speaking countries (Ireland, USA, Australia etc.). **On the axis of survival values versus self-expression values** we witness the following panoramic development: **High-income countries have a high determination for self-expression values accepted as emancipatory values.** Noteworthy in this regard is the range of inclination towards the extreme with self-expression values for Latin American countries.

From the above, we deduce that the countries with medium to low incomes sit on the extreme of survival values, with a strong tendency to preserve traditional values. The model tends to find a relational approach between three components: values, income, religious traditions. Subsidiary, in order to print an extensive level of approach to the subject under discussion we will selectively use other specific data (figures) in a graphic projection.

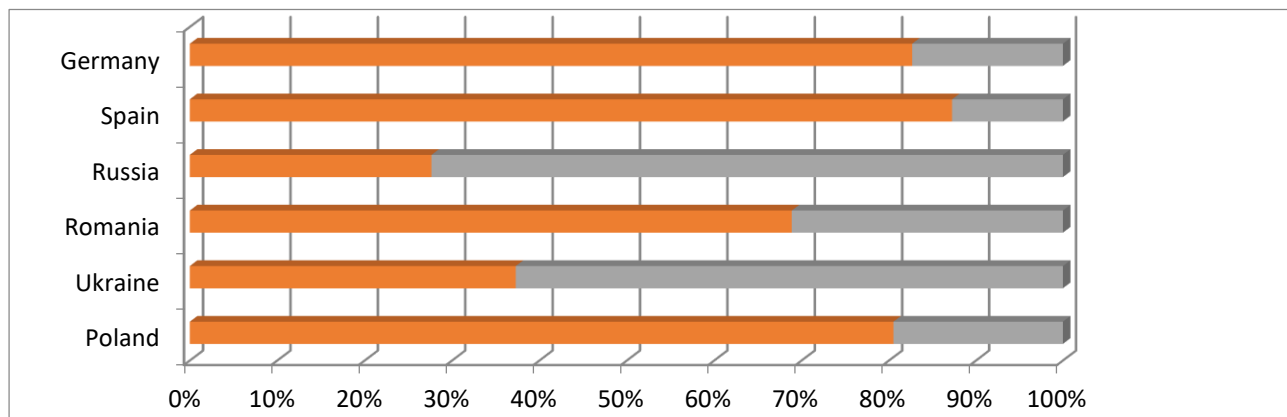


Figure1. Agreement (red) versus disagreement (green) that people see themselves as autonomous person

Source: D. David, Psychology of the Romanian people. The psychological profile of Romanians in a cognitive - behavioral monograph [4, pp.113-150]

Figure 1 tests in our view the willingness to organize your own life according to your goals and values [13]. And yet, specialists problematize this aspect, warning that autonomy does not mean „just me”, a fulfillment of a „wish list”, but also a social empathy. The remark, comes in a sigh of contradiction in the case of Germany, Poland, Spain, Romania, if we approach the data with those in Figure 3. The countries with the highest percentage of „autonomy” simultaneously fix a high percentage of „distrust” (the highest in the case of Romania). **What are costs of mistrust remains to be seen?**

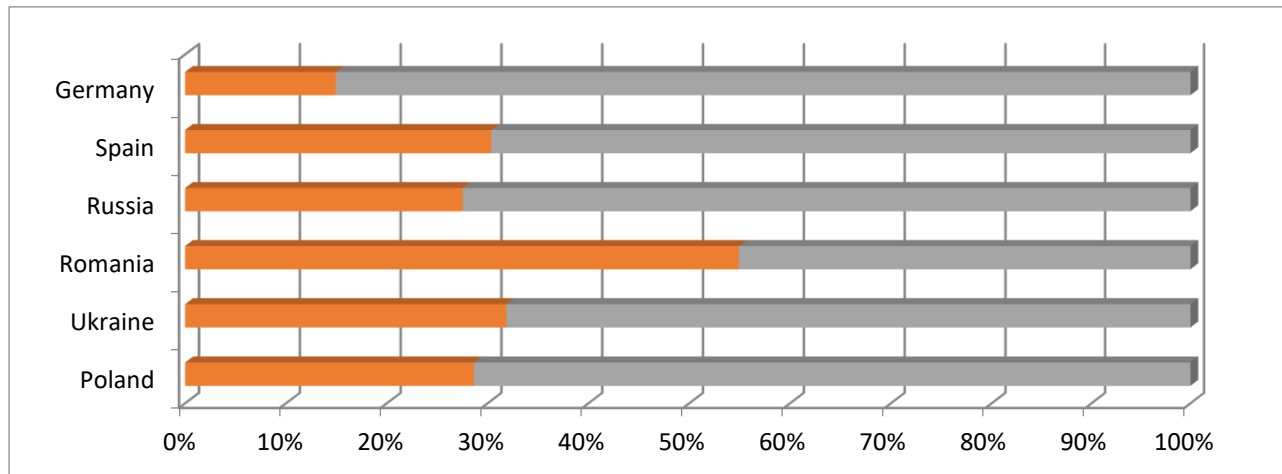


Figure2. Agreement (red) versus disagreement (green) with „If science and religion conflict, is religion right?”

Source: D. David, Psychology of the Romanian people. The psychological profile of Romanians in a cognitive - behavioral monograph [4, pp.113-150]

The data in Figure 2 test the cultural difference related to religious affinities as well as the predisposition to see in religion a „refuge” of fundamental knowledge. The most „affected” in this sense is Romania, which assumes that religion is a concentric space that strongly influences values, the way to create a reality, the meaning of actions both on the individual segment of personal achievements and the collective one. Romania, in comparison to other countries, demonstrates the greatest attachment to religion.

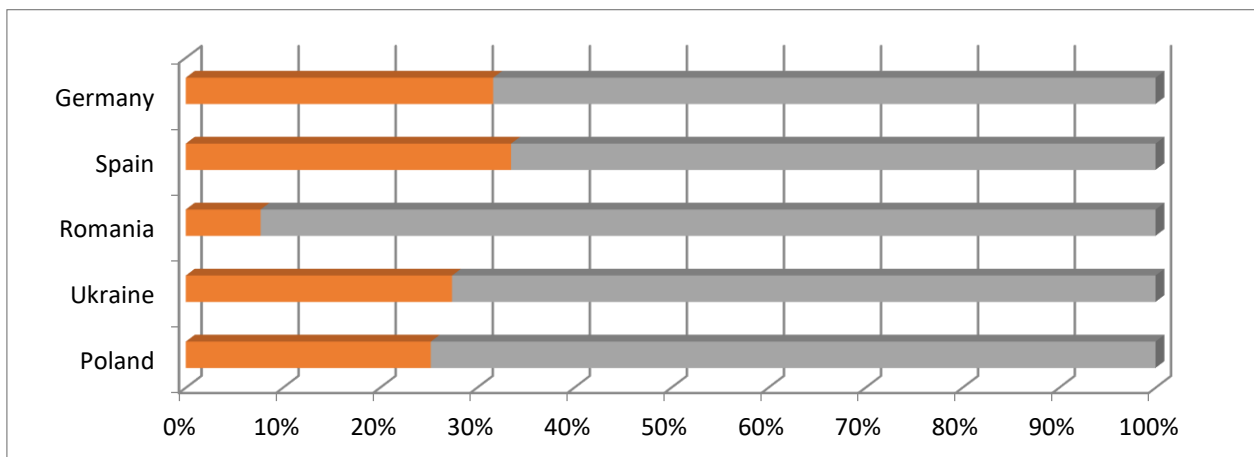


Figure 3. Trust (red) versus distrust (green) in people we meet for the first time.

Source: D. David, *Psychology of the Romanian people. The psychological profile of Romanians in a cognitive - behavioral monograph* [11, pp.113-150]

An important annotation, the phenomenon of trust in the vision of the author Daniel David must be followed through the prism of the „proximity model” (interpersonal distances), and the increase of trust, in his opinion, is possible through civic involvement. Arguably, a certain amount of caution has always been welcomed as strategy for coexistence and cooperation. Its „overdose” could create difficulties of collaboration and corroboration, of finding a line of confluence on even low-impact topics. **Otherwise, the „costs” of this mistrust coupled with religious affinities could lead to the phenomenon of culture biases (cultural prejudices) will be high for all parties: favoritism, protectionism, economic nationalism, economic discrimination, unequal distribution of resources, asymmetric business environment, etc.** [14]. In other words, **the quality of economic decisions would suffer** [5, p.11-25]. **The situation could be mediated by promoting a leadership model with good cultural training, especially the reality in which we operate projects culturally and ethnically diverse teams.**

CONCLUSIONS

The research of scholars with reference allows the postulation of a truth: culture is the domain that sets us apart, activating in each of us the experience of belonging to a cultural profile/identity. The lack of cultural „convergence” is perhaps the most challenging experience for each of us, because it tests our role as a good negotiator/mediator precisely when reasoning is obscured by the cultural „sensibilities” of each participant in the communication, in the broadest sense of their understanding. **Accepting the statement that each of us is the promoter of a culture would be a start to generate respect for the other. But how do we overcome this difference when we find no support for this rule?**

The question risks creating imbalance if we remember what Claudia Crăciun said about the lack of archetypal models that inculcate in our consciousness a model of preparation to make a decision and assume responsibilities.

The answer to the question takes the form of a solution that must be researched in the future. The mechanism of cultural convenience can be found, in our opinion, in promoting the culture of leadership. The leadership becomes, in this sense, a platform of profitability both on the dimension of affective „resonance” and on the dimension of economic „resilience”.

REFERENCES

1. Botezat, E.; Dobrescu, E.; Tomescu M. Dicționar de comunicare, negociere și mediere. București: Editura C. H. Beck, 2007, 183 p. ISBN (13) 978-973-115-052-9
2. Cantemir, Dm. Descrierea Moldovei. Chișinău: Editura Hyperion, 1992, 155 p. ISBN 5-368-01503-8
3. Crăciun, C. Teoria și practica negocierilor. Chișinău, Editura Prut Internațional, p.215, ISBN 9975-69-280-X
4. David, D. Psihologia poporului român. Profilul psihologic al românilor într-o monografie cognitiv-comportamentală. București: Editura Polirom, 2015, 395 p. ISBN 978-973-46-5478-9.
5. Dumitrașcu, V. Liderii: arhetipuri și roluri organizaționale, Leadership și cultură organizațională. București: Editura universitară, 2016, 238 p. ISBN 978-606-28-04330-5
6. Nădejde, I.; Nădejde- Gesticone A. Dicționar Latin - Român Complet. Pentru Licee, Seminarii și Universități (Ediția a IV-a). Iași: Editura Viața Românească, 1913, p. 704
7. Stefanov, N. Reflecții despre cultură și civilizație. Chișinău, 2004
8. <https://gov.md/ro/content/republica-moldova-va-beneficia-de-asistenta-tehnica-si-financiara-din-partea-republicii>
9. <https://www.tatsachen-ueber-deutschland.de/en>
10. <https://www.studocu.com/ro/document/universitatea-vasile-alecsandri-din-bacau/comert-international/analiza-economica-germania/10242917>
11. <https://ec.europa.eu/eurostat/cache/countryfacts/>
12. https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-performance-country/germany/economic-forecast-germany_en
13. <https://jurnalul.ro/viata-sanatoasa/trup-minte-suflet/ce-inseamna-a-fi-independent-314089.html>
14. <https://econs.online/articles/ekonomika/tsena-kulturnykh-predrassudkov/>

CZU: [141:299.513]:34(510)

DOI: <https://doi.org/10.53486/dri2022.06>

THE ROLE OF LEGALISM IN THE DEVELOPMENT OF CHINESE LAW

MARILENA-OANA NEDELEA⁶

Abstract. *The legalism preached the Confucian approach to understanding and applying the law. It emphasizes the primacy of laws. The political and legal concepts of legalism became the defining factors of the progressive development of the law, its ideological foundations, its principles and institutions, as well as the enforcement mechanisms and the traditional legal understanding of the Chinese people.*

Key words: *legalism, Chinese law*

JEL CLASSIFICATION: K39, K30.

INTRODUCTION

The ethical-political dogmas of Confucianism and the political-legal concepts of legalism became the defining factors of the progressive development of the law, its ideological foundations, its principles and institutions, as well as the enforcement mechanisms and the traditional legal understanding of the Chinese.

Confucius put public morality above the law. The basis of human virtue, according to Confucius, was the moral principle "li". At the heart of legal thought was the strict observance of the legal law "fa". Over time, a compromise was reached between Confucianism and legalism which was expressed in the formula: "Where "li" is missing, let "fa" apply."

Over the centuries in China there has been a rivalry between two diametrically opposed legal schools: Confucianism and legalism. Confucianism (6th century BC) was based on spiritual nobility, humanism, ancient customs, seeking self-perfection and virtue. Adherents of this doctrine put public morality above the law: in their opinion, the basis of human virtue is a moral principle - "li". The jurists (3rd century BC) believed that any law (fa), even absolutely unjust, must be strictly observed, it can neither be evaluated nor discussed, and the best way to ensure its implementation is to increase the rigidity of the policy of the bureaucratic state in relation to its subjects.

During the Zhangguo period (5th-3rd centuries BC), the role of law is strengthened with a complex set of punishments. The complete legalist doctrine on the government of the people and the state is conceived by Shan Yang, the most brilliant representative of legalism, defending the absolute power of the ruler, who, with the help of a correct law, determines the entire life of his subjects.

Legalists, for their part, preached the idea of the futility and impossibility of people's existence outside of the strictest sanctions based on the obligation of preventive measures and collective responsibility that provide "good governance". They refused to acknowledge the existence of any link between the punishment and the severity of the crime committed. In their opinion, even the slightest violation of the emperor's orders was to be punished with cruelty. Preaching a kind of "equality"

⁶ Ph.D, University Lecturer, email: nedeleo@gmail.com
ORCID: 0000-0001-9478-7673

before the law and the inevitability of punishment for crimes committed, legalists sought to deprive the nobles and officials of the various principalities of their hereditary privileges, in the name of strengthening the central authority.

The aggravation of the confrontations between the two ideologies gave new impulses to the formation of new traditions and institutions of law in Ancient China. We refer to the second half of the century. 3rd BC when legalism, in its extreme form, becomes the official ideology of the first Chinese Qin empire (221-207 BC), and the legalists come to power, trying to forcefully erase Confucian dogmas from the people's consciousness by destroying his books. According to legend, Emperor Qin Shihuangdi in 213 BC ordered the burning of all Confucian books and sentenced 400 Confucian scholars to death.

The fusion of Confucianism and legalism contributed to the fact that "li" norms acquired a binding character and a greater formalism was established.

1. THE LEGALISM

Legalism, along with monism and Daoism, represents one of the original philosophical schools in ancient China, as we find it in the historical writings of Sim Tian (2nd-1st century BC). They were based on the strict observance of the positive law (*fa*) and the severity of the punishments. They pleaded for the supremacy of state power over the people (when the people are strong - the state is weak). They totally disregarded the man. They used the principle of collective responsibility - which led to the centralization of power. They advocated the widespread application of the death penalty.

From the jurists' point of view, any law (*fa*), however utterly unjust, was to be strictly observed, not to be subject to review or question, and the best way to ensure its enforcement was to increase cruelty the policy of the bureaucratic state in relations with its subjects.

The school of legalists or legalism is an ethical-political teaching in which the problems of man, the state and society are addressed. As a philosophical school, legalism appeared in the c. VI BC and was active until the 3rd century BC.

The doctrine of Legalism found its most complete embodiment in the activities of the ruler Ying Zhen, who entered history under the name Qin Shi Huang, which meant "The First Divine Ruler" who opened the Qin dynasty. In the year 221 BC assumed the title of emperor of all China, organized persecutions against the followers of Confucianism, ordered to bury alive 300 of its preachers and to burn Confucian books. Qin Shi Huang Ti carried out a series of reforms, strengthened his power, began the construction of the Great Wall of China. The wall became a reliable form of defense for the time, although it did not later save it from the invasion of Genghis Khan's troops.

Back in 359-348. B.C. Shang Yang carried out a series of reforms that strengthened the central government: uniform written laws were introduced, measures of length and weight were simplified, and land reform was carried out. Shang Yang's reforms were aimed at destroying the community, establishing private ownership of land. All old landmarks were destroyed, land could be purchased and cultivated in unlimited quantities.

After taking the place of head of state, Qin Shi Huang Ti expanded Shang Yang's reforms throughout the country. The empire was divided into 36 regions, which in turn were divided into regions, counties and communes (the smallest administrative unit). In each region, the emperor appointed two rulers, representatives of the military and civil authorities. Former aristocratic titles were abolished, wealth and service to the state became the criterion of nobility, the court in the Qin empire was separated from the administration. A special judicial department was created, headed by

the *tingway*, which monitored the application of criminal law and also considered cases of the most serious crimes in the first instance, especially if they were officials abusing their official position.

In the second stage of the development of ancient Chinese law, beginning with the Zhangguo period (V-III century BC), at the end of the reign of the Chou dynasty, the role of law with its stable complex of punishments is strengthened. During this period in ancient China the legal doctrine was created. The school of jurists or "*fajia*" - advocates of the law of traditional legal thought, preached the Confucian approach to the understanding and application of the law.

This school was founded and developed under the conditions of a permanent clash of ideas with early Confucianism. Both schools promoted the idea of establishing a strong and easy-to-govern state, but they took different positions regarding the philosophical reasoning and methods of establishing such a state. Legalism emphasizes the primacy of laws, demonstrating that politics is incompatible with morality, and Confucianism stands at the opposite pole, emphasizing the importance of moral qualities in politics.

The school of jurists created the concept of the despotic state, based on the equality of all before the law, except for the ruler, considered the sole creator of laws. In the view of the forensics, the leader must know well the psychology of the people in order to lead them, and the main method of influence must be based on rewards and punishments.

Among those who made the greatest contribution to the development of this doctrine were mainly political people - ministers and reformers, acting in various kingdoms of ancient China until the 7th-3rd century BC. The most outstanding representatives of Legalism were Guan Zhong Zi Chan, Li Kui, Han Fei, Shen Bo - Hai, Li Si and of course Gunsun Yang (390 - 338 BC), the founder of Legalism, better known as Shang Yang. The activities of each developed in the same direction - towards strengthening the central authority, increasing the authority of the law, strengthening the central authority, the power of the ruler and his ministers, the strength of the administrative bureaucracy.

In a number of important points, the theory and practice of legalism were radically opposed to those proposed by the Confucians. In general, the jurists representing this doctrine in politics and ethics were realists. If the Confucians, at least at the beginning, considered politics to be a derivative of morality, for the legalists, practice and the needs of concrete development were in the foreground. The doctrine of the jurists was directed against the continuation of the system of clan relations. They paved the way for development.

Unlike the Confucians, with their principles of morality and ordinary rights, the promotion of humanity and a sense of duty, the worship of the ancestors, and the authority of the wise person, the legalists based their doctrine on the unconditional primacy of the Law, whose power and authority were to be realized through strict discipline and severe punishments.

At the beginning of the development of the school of legalism, its proponents set as their goal the establishment of uniform laws for the whole of China, thus ensuring stability, the achievement of legal order in society and, perhaps most importantly, the unification of the principalities. Legalists were convinced that man is born with love and hate, that he is animated by the desire to obtain wealth. As a result, the main means by which people could be controlled could be the law and the system of punishments and incentives developed on its basis. The law must be clear, the punishments harsh, and the rewards deserved.

Unlike Confucianism, which provided for the use of punishment according to the official position of the offender and his place in the kinship system, legalists supported the universality and

inevitability of responsibility for all, the law being binding on everyone. Thus, Han Fei, the most respected theorist of legalism, said: "If you are going to run the state based on the law, then apply it to everything. The law is not impartial to nobility, the straight line does not go around the broken line. From the requirements of the law the wise cannot deviate, and the brave will not dare to challenge it ... When governing the state, laws, rewards and punishments play the same role as a strong crew and a good horse on land, a light boat and oars comfortable on the water. Those who use them are successful. (Semigin, 1999)

2. HAN FEIZI - THE MAIN REPRESENTATIVE OF THE LEGALISM

"To rule the state by law is to praise good and combat evil."

Han Feizi

Han Feizi (referred to by other sources as Han FeiTzu) is probably the most important jurist in ancient China. Very little is known about his life. He lived, roughly, between 280-233 BC, when the country was still just a group of small kingdoms that were at war with each other. It belonged to the Han dynasty that ruled between the 5th and 3rd centuries BC. He carried out his studies within Confucianism, under the patronage of the philosopher Xunzi, but later evolved into his own line of thought.

He is the initiator and main representative of the philosophical school called "legalism" or *fachia*, which is based on the interaction of three fundamental concepts: power (*shih*), the art of government (*shu*) and law (*fa*). Legalism challenged the Confucian idea of leading by example; rejected the idea of the innate goodness of human nature, understanding that, in fact, people's behavior is characterized by the quest to avoid punishment and achieve personal gain. The only way to remedy this was through strict laws punishing such undesirable behavior.

To ensure efficient administration and thus protect his authority, the ruler had to use various administrative techniques and the art of government (*deshu*). He was not to try to make people "good", but only to prevent them from doing evil, by instituting legal rules laid down by ministers.

Freedom did not really take place in such a system. The welfare of the state was placed above the rights of individuals. It was an authoritarian state, organized according to the principles of war, in which only peasants and warriors had a place, since military power was considered inseparable from agricultural production. All other occupations, especially those of a scientific nature, were to be suppressed.

Han Feizi's work was a synthesis of the legal theories of his time. Some of the 58 chapters of his work *Hanfeizi* are the fruit of other thinkers of that period who dealt with subjects related to law.

ZhaoZheng, the first emperor of the Qin Dynasty, was a follower of his writings. In the year 234 BC Li Li, the emperor's first minister and Han Feizi's former schoolmate, feared his growing influence and as a result imprisoned him on charges of duplicity. She later forced him to commit suicide by ordering him to drink poison. Han Feizi complied. For this reason it is said that he died because of an old friend who betrayed him out of envy. A perfect ending in tune with the turbulent reality of China at the time.

Han Feizi's work was a synthesis of the legal theories of his time. Some of the 58 chapters of his work *Hanfeizi* are the fruit of other thinkers of that period who dealt with subjects related to law.

Thus, by proclaiming the principle "the law is binding for all", supporters of legalism tried to deprive the nobles, officials of the various principalities, of their hereditary privileges, in the name of strengthening the central authority.

It is worth noting that this principle was strengthened by the principle of collective responsibility, which was first introduced by King Qin Xiao-Hun (361-338 BC), the initiator of this transformation being Shan Yang. The principle of collective responsibility went beyond the circle of people covered by family and kinship ties and extended to the unification of several communities (courts) - the so-called "five courts and ten courts". There was a mutual guarantee.

A relevant example of law enforcement in those days can be cited: for state crimes, not only the criminal was executed, but also three generations of his relatives, along the lines of his father, mother and even his wife. Another suggestive example from the legal sphere of that time: for the murder of the father, the murderer was tortured and killed, his younger brothers were beheaded, the house was destroyed to the ground, his teacher was punished, the officials responsible for the area where the crime took place were demoted, the neighbors who lived to the left and right of the perpetrator had their ears cut off (because they should have heard about the crime and reported it), the neighbors who lived in front of the murderer's house had their eyes gouged out (because they should have seen everything and to prevent crime).

The release from collective punishment could only be a preventive denunciation. This must be done very clearly, any inaccuracies in the wording of the denunciation implying punishment. Anonymous denunciations were prohibited, its subjects being released. Under penalty of death, denunciations against parents and other close relatives were prohibited, except for the killing of the father, in which case even the mother could be denounced.

Slaves who denounced their masters were subject to strangulation, except on the latter's charges of rebellion or treason. Thus, the total system of mutual tracking of subjects played a significant role in the consolidation of centralized power and became an essential point of the subsequent practice of public administration and legislation in China.

Preaching a kind of "equality" before the law, legalists supported the idea of the futility and impossibility of human existence outside of the most severe punishments. They refused to recognize the existence of any connection between the type of crime and the severity of the punishment. According to the coroners, severe punishment was needed for even the slightest violation of the emperor's orders.

Han-Fei-tzu emphasized that "... humanity, duty and charity are not sufficient in themselves for the cause, and order in the state can be imposed by severe punishments". He emphasized: "Hard punishments indicate that the sovereign loves his people. If the punishment is light, then the sovereign does not love his people. If the punishment is strict and firmly administered and is clear to the people, then it is good for the sovereign. If the crime is significant and its punishment is insignificant, then disorder occurs. The territory of such a state will decrease as a result. Punishment is the only manifestation of love."

The representation of state legitimacy was somewhat different compared to earlier political and legal doctrines. Legalists developed their doctrine of power management technique.

The representatives of the coroners were the carriers of the interests of the wealthy members of the community, especially those who were not connected by blood relations with the aristocracy. This was the only political doctrine which, to a greater or lesser degree, expressed the interests of the merchant and slave-owning classes.

Legalists, like Confucians, advocated strengthening the central authority of a wise and virtuous sovereign and opposed the civil strife of the nobility and were against undermining the role of morality. But unlike the Confucians who called for the preservation and restoration of the former influence of the nobility and traditions, the legalists advocated a decisive reduction in the influence of the tribal nobility and the absolute unconditional power of the written and sovereign law.

In the book "Shang jun shu", the author of which is Shang Yan, it is stated that in the field of government it is necessary to concentrate all the power in the hands of the supreme ruler. In the treatise it is said "the intelligent ruler takes power into his own hands, establishes the law, and with the help of the laws brings order". According to the supporters of this doctrine, success in politics is achieved only by someone who knows the situation in the country and uses accurate calculations. They placed great importance on drawing on the experience of previous rulers in terms of economics and politics.

In their teachings, the legalists highlighted six "parasites": Li, music, Shi zing, veneration of the old order, fraternal duty, reluctance to fight. Thus, according to legal doctrine, if there are such negative elements in the country, the ruler will not be able to force the people to cultivate the land and fight. The state will inevitably become poor and dismembered.

In ancient China, the prestige of the bureaucracy was very high, it was called to take care of the people and guide them to good. The social significance and prestige of the bureaucracy was determined by the state apparatus. Compared to that of other ancient states in the east, this apparatus was distinguished by its numerous and great powers, including a number of departments such as: the financial department, the government tribunal, the military, the judiciary, the palace guard and many others. The officials of the central apparatus were appointed by the sovereign, who was also the supreme judge and was at the head of the military-bureaucratic apparatus.

When an official was asked to explain any law or order, the official had to give a clear answer to the request. In the "Book of the Ruler of the Shan Region", it was mentioned that those officials who dared to violate the text of the law or regulations or change the text by changing or adding hieroglyphs were to be punished with death (without the right to be pardoned).

Shang Yang insisted that an authentic copy of the laws and regulations be kept in the Heaven son's palace. The rights or duties of officials and officials had to be fixed, otherwise the way was opened to disorder. Fixing them was the way to establish order in society. The ruler himself must treat all officials equally. "When a ruler is fair to those who do not deviate from the observance of the law and do not indulge in favoritism, the dignitaries cannot hide anything from the ruler and the subjects cannot deceive him".

"If the law is binding on everyone, officials cannot commit crimes." If, however, an official has committed a misdemeanor and, in order to free himself from collective responsibility, someone will inform the ruler, then this person, informed by a noble person or a person of low origin, completely inherits the position, the degree of nobility, the field and salary of that official.

Thus, forensics have often considered the issue of rewards, incentives for appropriate behavior. Reward and salary had to correspond to merit.

The legal doctrines of the coroners have proven to be very viable. Thanks to Shang Yang's reforms and legal teachings, the provincial kingdom of Qin was able to quickly become more powerful. Under the reigns of Qin Shi Huang, the kingdom of Qin grew stronger and, defeating all rivals, was able to unite in 221 BC the entire state of China.

In the first Qin Chinese empire, legalism becomes an official ideology. Coming to power, legalists enforce their legal opinions through unsuccessful attempts to forcibly eradicate the dogmas of Confucianism from the mass consciousness by persecuting its adherents and destroying Confucian books.

Until the 2nd century BC the official state ideology in ancient China combined the positions of Confucianism and Legalism.

Unwilling to display a flexible policy in state management and consider the interests of all individuals without social support, the Qin empire, along with legalism, fell, giving way to the new Han empire.

The Han Dynasty (3rd century BC - 3rd century AD) represents the last stage of the formation of ancient Chinese law. With the Han dynasty, the process of synthesizing the ideas of legalism and Confucianism on the basis of renouncing certain extremes begins. This is the stage of the formal victory of Confucianism. As a result of the ideological and theoretical symbiosis of various concepts of government and legal conception, a new doctrine emerged - Chinese Orthodox Confucianism. As a result of the synthesis of the two opposing schools - Confucianism and legalism, a legal system began to form in ancient China, which played a significant role in the further development of the state and law. Ancient Chinese law had a significant impact on the history and existence of Chinese civilization and a particularly strong influence on the legal thought of the Far East.

3. LEGALISM REPRESENTATIVES

Huan Yu was the first Chinese thinker to introduce the concept of governing the state with the help of laws (646 BC). He asserted the universality of law, claiming that laws are the "Fathers" of the people. Ruler and officials, superiors and inferiors, nobles and scoundrels—all must conduct themselves according to the law. Huan Yu believed that this was the great art of government.

Legalism or, as it was called by the Chinese, the Fa-chia school was based on laws, therefore its representatives were called "legalists".

The founder of Legalism is Shang Yang (390-338 BC) who is recognized not only as a thinker but also as a reformer and statesman. Originating in an impoverished aristocratic Chinese nation of the Wei kingdom, he was the first thinker in China to create the theory of the despotic state and elaborated the main ideas of the legalist school about the governance of the state and society.

Shang Yang actively contributed to the creation and consolidation in the middle of the 4th century BC. in the Qin kingdom of such a state system. 100 years later, the ruler Qin Shi Huangdi managed to unite the country.

The founder of the ideology, Shang Yang began his work in a stormy era. In the 4th century B.C. the Chinese states fought each other almost continuously. Of course, the weak became victims of the strong. In 376 BC the territory was divided between the states of Han, Wei and Zhao. This event had a huge impact on the Chinese rulers: everyone perceived this split as a warning. Already in the age of Confucius, the son of heaven (supreme ruler) had no real power.

Shang Yang actively contributed to the creation and consolidation in the middle of the 4th century BC in the Qin kingdom of such a state system. 100 years later, the ruler Qin Shi Huangdi managed to unite the country.

The founder of the ideology, Shang Yang began his work in a stormy era. In the 4th century B.C. the Chinese states fought each other almost continuously. Of course, the weak became victims

of the strong. In 376 BC the territory was divided between the states of Han, Wei and Zhao. This event had a huge impact on the Chinese rulers: everyone perceived this split as a warning. Already in the age of Confucius, the son of heaven (supreme ruler) had no real power.

Han Fei (280-233 BC) was the thinker who completed the systematization of legalism as an ethical-political teaching. He synthesized the main ideas of three forensic currents – the principle of governing the state with the help of laws, provisions; the principle of power, authority and the principle of the method of government, the art of power, administration - in a unique theory of despotic power.

The greatest theorist of legalism who perfected this doctrine is Han Fei. He is credited with having created an entire treatise "Han Fei Tzu". According to it, it is necessary to regulate the relations between people, especially between the ruler and the society. The ruler's place, he believed, was established by the heavenly deities. Han Fei also develops the idea of the immoral nature of man. Man tends to his own success, and this fact, Han Fei believed, should be used in social relations. The citizen sells his capabilities in order to receive something useful and profitable instead. In his view, the past should not be repeated. New ways of governing must correspond to new historical relations. Thus, not simply the order, but the laws of the ruler "create" men. Beginning with the 3rd century BC the process of merging legalism with early Confucianism into a single teaching takes place.

However, according to researchers, the founder of legalism was Shang Yang. In addition, the works of Shen Bu Hai and Shen Dao played an important role in the development of legality. Thus, Shen Bu Hai created a technique for controlling the work and checking the abilities of government officials.

In ancient China, the possibility of equal rights of states was not foreseen. Every ruler faced a choice: dominate or submit. In the latter case, the subject's dynasty was destroyed, and the territory of his country was incorporated into the state that won the war. As a result, the only way to avoid extinction was to fight to dominate the neighbors. In such a war where everyone was fighting everyone, respect for moral standards and traditional culture weakened.

A danger to the ruling power was the privileges and hereditary rights of the nobility. The key task of the ruler, who was interested in a strong army, ready for battle, was the concentration of all resources in his hands, the centralization of the country. For this, the reform of society was necessary. The transformations had to target all spheres of life, from economy to culture. Thus we can understand the objective of gaining dominance over the entire territory of China. These tasks were reflected in ideas of legitimacy. Initially, they were not intended as temporary measures, the implementation of which is due to extraordinary circumstances. Legalism emerged as a solution to provide the foundation upon which a new society could be created.

The key words of the philosophy of legitimacy were expounded in the work of Shan-chiun-shu. Authority is attributed to the founder of Shan Yang's ideology. He came from an aristocratic family, a small city-state. He tried to make a career in the ancient Wei Dynasty, but could not.

In the year 361 BC the Qin ruler Xiao-gun ascended the throne and called on all able-bodied inhabitants of China to join the project of reclaiming the territory that once belonged to the kingdom. Shan Yang was admitted to work for the ruler. He created a strategy to consolidate the state through large-scale reforms.

One of the courtiers objected to Shan Yang, saying it was not possible for a government to neglect the traditions and customs of the people. Shan Yang retorted that an ordinary person adheres to ancient customs, and a scientist studies them. An intelligent person creates the law, and the simple

man obeys. The ruler appreciated Shan Yang's determination and intelligence and gave him complete freedom of action.

Soon, the state passed new laws. This moment can be considered the beginning of the realization of legitimacy theses in ancient China.

Legalism is primarily the strict observance of laws. According to this, all the inhabitants of the state were divided into groups that included 5 and 10 families. All were "connected" through a system of mutual responsibility. Whoever did not report on a criminal was severely punished, he was cut in two. The informer was rewarded similarly to the warrior who beheaded an enemy. The one who hid the criminal/offender was punished. If the family had more than 2 men, it paid a double tax. People who asserted themselves in battle were given a bureaucratic title. People engaged in scandals or quarrels were punished according to the gravity of the act. All the inhabitants, from the young to the old, had to engage in farming, weaving and other gainful activities.

A few years later, the reforms were complemented by new initiatives and transformations. Thus began the second stage of the development of legality. This manifested itself primarily in the process of destroying the patriarchal family. Thus, adult sons were forbidden to live in the same house as the father. In addition, the administrative system was unified, units and measurement systems were standardized. The general trend of the measures taken was the centralization of government, the consolidation of power over the people, the consolidation of resources and their concentration in one hand, that of the ruler.

CONCLUSIONS

The whole concept proposed by Shang Yan reflects his hostile opinion towards people, an extremely low assessment of their qualities. Legalism propagates the idea that only through the use of harsh laws and drastic and violent measures can the population be taught to obey and maintain order. The private property interests that the new aristocracy sought to satisfy came into conflict with the archaic foundations of community life. Consequently, the ideologues of legalism did not appeal to the authority of traditions, but to changing social conditions. Being at odds with Confucianists and Taoists, who demanded the restoration of the old order, legalists emphasized the idea of the impossibility of returning to the old order. They said that benefits can be obtained without imitating antiquity.

The ideas of the jurists reflected only the simple opposition of contemporary conditions to the past. Adherents of this system intended to carry out large-scale political and economic reforms. In the sphere of government, they intended to concentrate all power in the hands of the ruler, depriving the governors of their powers and turning them into mere officials.

They believed that an intelligent king would be concerned with establishing laws, and with their help, order would be brought to the state. Also, the exclusion of the hereditary transfer of positions was foreseen. In the administrative positions it was recommended to be appointed those who proved loyalty to the leader of the army. Business qualities were not considered. Only one thing was required from the candidates - obedience to the leader.

According to the legal experts, it was necessary to restrict the autonomy of the community and to subordinate the family clans to the local administration. They did not deny community self-government, but promoted a set of reforms aimed at establishing a direct check on state power over citizens. Among the main processes envisaged were: the planning of the administrative division of the country, the formation of a local bureaucratic service, etc.

The laws, according to legal experts, should be the same for the entire state. The law was considered to have a repressive orientation, considering the criminal punishment and the administrative orders of the ruler. As for the interaction between the power and the people, Shan Yang regarded it as a confrontation between the parties. From his perspective, in an ideal state, the ruler achieves his powers through force. He is not bound by laws. Consequently, civil rights, guarantees of expression have no place.

The law acted as a means of preventive and frightening terror. Even for the most insignificant crime, according to Shang Yan there needed to be the death penalty. The punitive policy had to be complemented by measures to defeat dissent.

The official recognition of the doctrine, as mentioned above, allowed the state to consolidate and begin the conquest of territories. At the same time, the spread of legalism in ancient China had extremely negative consequences. The realization of the reforms was accompanied by an increased exploitation of the people, despotism, the cultivation of fear among the population, raising the level of people's suspicion.

Taking into account the discontent of the population, the followers of Shang Yan abandoned the boldest positions of this doctrine and began to fill it with a moral content, bringing it closer to Taoism or Confucianism. The views reflected in this concept were shared and developed by important representatives of the school: Shen Bu-hai, Zing Chan and others.

Han Fei supported the application of existing laws in the field of public administration.

REFERENCES

2. Batâr K. I. (1999) *Istoria statului și dreptului*, Editura Bâlna
3. Bodde, D. (1981) *Basic concepts of Chinese law: The genesis and evolution of legal thought in traditional China, Essays on Chinese civilisation*, ed. Charles Le Blanc and Dorothy Borei. Princeton: Princeton University Press
4. Ch'ü T'ung-tsu (1961) *Law and society in traditional China*, Paris and The Hague: Mouton
5. Drimba, O. (1984) *Istoria culturii și civilizației*, Ed. Științifică și Enciclopedică, București
6. Gernet, J. (1985) *Lumea chineză*, Ed. Meridiane, București
7. Hulswé, Anthony F. P. (1981) *The Legalist and the laws of Ch'in, Leyden studies in Sinology*, Ed. W. L. Idema. Leiden: E. J. Brill
8. Kuchera, S. (2012) *Istorie, cultură și drept în China antică*, Academia Rusă de Științe, Institutul de Studii Orientale Ras, Ed. Natalis
9. Negara, M., *Legismul*, www.prezi.com/2bzeii8h-tdb/legismul
10. Semigin, G. Y. (1999) *Antologia gândirii juridice a lumii. Antichitatea. Civilizații estice*, Ed. L.R Syukiyainen
11. Shouyi, B. (1997) *Scurt tratat de istoria Chinei*, Ed. Enciclopedică, București
12. *El jurista de la antigua China*, <https://comercioyjusticia.info/opinion/el-jurista-de-la-antigua-china>
13. *Istoria generală a statului și a dreptului*, Ed. KI Batyr, 1998

CZU: 378.4:[339.138:371.15]

DOI: <https://doi.org/10.53486/dri2022.07>

THE ROLE OF UNIVERSITY IMAGE AND ITS IMPACT TO COMPETITIVE ADVANTAGE

JOMIR EUDOCHIA⁷

***Abstract:** A great competition among universities existing today is to attract and recruit new, the best and brightest students. This reality must be observed and analysed from various points of view to maximize competitive advantage. Universities must be able to face the challenges of globalization and are required to improve facilities and image of the high educational institutions. People are more selective and a good image or reputation will get better results and a better attractiveness of a university. Because of increasing interest for educational marketing field, this study aims to identify the role of university image in the process of choosing the institution by candidate students.*

Key words: university image, website, higher education, competitiveness,

JEL CLASSIFICATION: M31; I23.

INTRODUCTION

Higher education is an important component for the progress of every society. In today's sensitive business milieu, an organization's ultimate chance of survival is to develop a positive image and a favorable reputation in its environment. With the growing competition and the absence of differences in quality, design, price, and benefits, the factor having the greatest influence on the consumer's decision making process is the positive image and reputation of the university and its brand. [2] In short, it is the result of the past actions of the university. It is formed through accumulated judgments over time of different stakeholders who interact with the institution. Therefore, an university can have multiple ways that shows its reputation: such as quality competences of professors, top-level facilities, price, quality of service, strategic locations, innovative products and services etc. [8]

Universities in our country face a strong competitive environment, created by the the single european space of higher education with a considerable increase of academic mobility and great opportunities for young people to study in a european university. The facts indicated above require developing the capacities to be competitive in the conditions of the educational environment in order to attract more students. Image and perceived reputation becomes important factors in order to increase attractiveness and strengthen competitiveness on the educational market. [3]

⁷ Ph.D Student, email: eudochia.jomir@ase.md
ORCID: 0000-0001-6556-6409

THE IMPORTANCE FOR THE INSTITUTIONS TO HAVE A WELL-RANKED WEBSITE

The worldwide web is one of the main sources of information and the main showcase for everyone who wants to be recognized on in the "real world". At the academic level, universities have a very important role to communicate scientific and cultural achievements. Web publication by scholars is not only a tool for scholarly communication but it is also a way to reach larger audiences and a reflection of the performance of the institutions.

An indicator of web presence and visibility is Webometrics Ranking, that measure global performance of a university. These indicators take into account the teaching commitment, the research results, the perceived international prestige, the links with the community, including industrial and economic sectors, of the university. [1]

Also, Webometrics Ranking is measuring the volume, visibility and impact of the web pages published by universities, with special emphasis in the scientific output (referred papers, conference contributions, monographs, thesis, reports) but also taking into account other materials (courseware, seminars or workshops documentation, digital libraries, databases, multimedia, personal pages) and the general information on the institution, their departments, research groups or supporting services and people working or attending courses.

According to last edition of Webometric, bellow are represented top 10 universities from Republic of Moldova in Webometrics Rank:

Table 1. Top 10 universities from the Republic of Moldova, according to Webometrics, July 2022

Ranking	University	World Rank	Impact Rank*	Openness Rank*	Excellence Rank*
1.	Nicolae Testemitanu State University of Medicine and Pharmacy	3875	8593	2386	4078
2.	Technical University of Moldova	3927	6742	2616	4558
3.	State University of Moldova	4026	3587	2785	5413
4.	Academy of Economic Studies from Moldova	7961	8834	8834	7217
5.	Balti State University Alecu Russo	8457	10600	4463	7217
6.	Free International University of Moldova	9205	9634	6242	7217
7.	Moldova Cooperative Trade University	11891	9398	7619	7217
8.	Chişinău State Pedagogical University Ion Creangă	13547	11520	7619	7217
9.	Cahul State University Bogdan Petriceicu Hasdeu	15426	13873	7619	7217
10.	Academy of Music Theatre and Fine Arts	16327	14934	7619	7217

Source: <https://www.webometrics.info/>

It's important for institutions to have a well-ranked website, other words a competitive website, because websites are the most important form of their online appearance, as a reflection of the style, the activity and the reputation of the particular institution and can be an indicator of university competitiveness.

In this era of globalization, which considerably affects higher education, institutions are highly concerned with their position in ranking lists prepared by various national and international agencies. Every year, lists of top-ranked higher education institutions are published by different private agencies according to their own surveys. The purpose is often to enhance the reputation of the university and to have a positive influence on university ranking. **In case the web performance of an institution is below the expected position according to their academic excellence, university authorities should reconsider their web policy, promoting substantial increases of the volume and quality of their electronic publications.**

INTERNET- an instrument of growing competitiveness

The emergence and development of the internet has led to a major change in the nature of education. The use of the internet forced university managers to innovate, rethink and redesign the academic programs in order to adapt to the Z generation expectations. The members of this generation are tech-savvy, active on social networks and demand fast, even instant access to authentic information through new delivery modes and integrated online platforms. The Internet offers the possibilities of instant feedback, allowing marketers to continuously optimize and improve their marketing activities.

The Internet enables direct, interactive and real-time communication between universities and their customers and encourages much greater consumer involvement in the creation and sharing of marketing messages. With the strong penetration of social media into people's lives, consumers have become better informed, more educated, in control of the media selection, information tools and platforms they use to obtain messages or information of a commercial nature. Under these circumstances, it becomes natural for organizations to want to use social media to complement traditional ways of communicating with customers. Whether they choose social media exclusively for communication or use it as a complement to traditional communication platforms, marketers can take advantage of the high diffusion potential, low cost of messaging or the ability to target a wide variety of consumer profiles.

According to hubspot.com, we can see some essential statistics that can serve as useful information for SMM about Social Media Marketing (2022):

- Facebook has 1.96 billion daily active users
- 98.5% of Facebook users access the platform on mobile devices
- Facebook was ranked #1 in social media investment
- Facebook ads are used by 70% of marketers,
- 98% of marketers say Instagram is the most influential platform for influencer marketing, which is 44% higher than Facebook.
- The best times to post on Instagram are Wednesday at 11 AM, and Friday between 10-11 AM. Sunday is the worst day for engagement.
- 70% of TikTok users agree they feel a deeper connection to people they interact with on TikTok compared to other social networks.
- TikTok was the most downloaded app of 2021.

One of the elements that characterizes social networks is the function of creating reputation, image. This function is related to trust, and in online environments this is measured quantitatively, by the number of fans, the number of likes, the number of views, reorders etc. Analysed from the point of view of social networks presence and number of followers, according to Webometrics, the

last Ranking Web of Universities (June 2022), is represented represented the current situation for Top 10 Universities (state and private) from the Republic of Moldova:

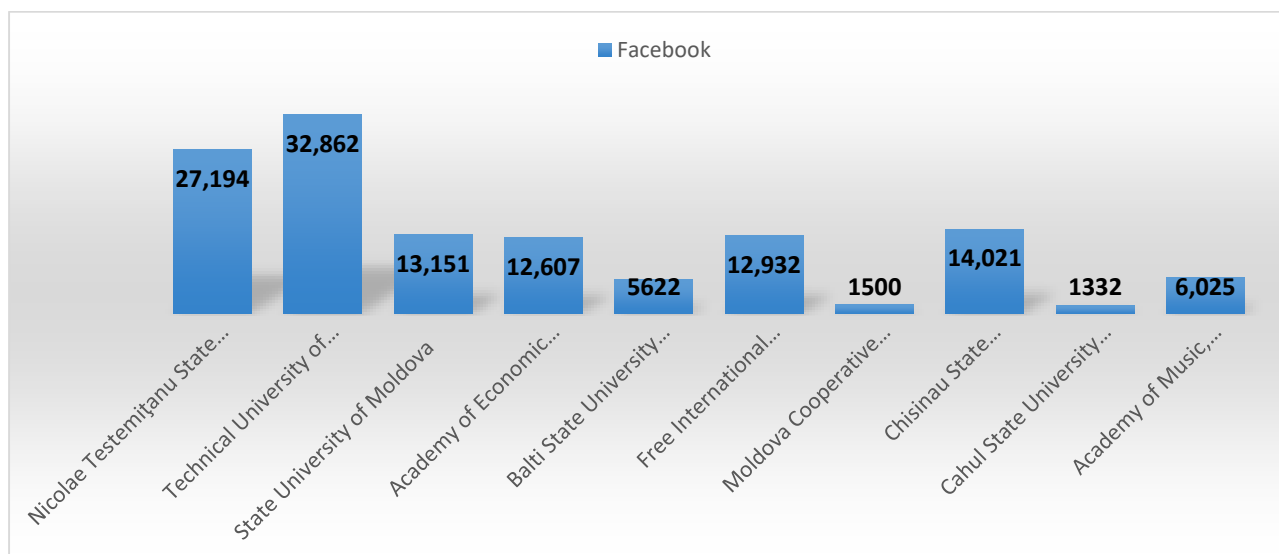


Figure 1. Number of followers on Facebook pages of universities (July, 2022)

Source: <https://www.facebook.com>

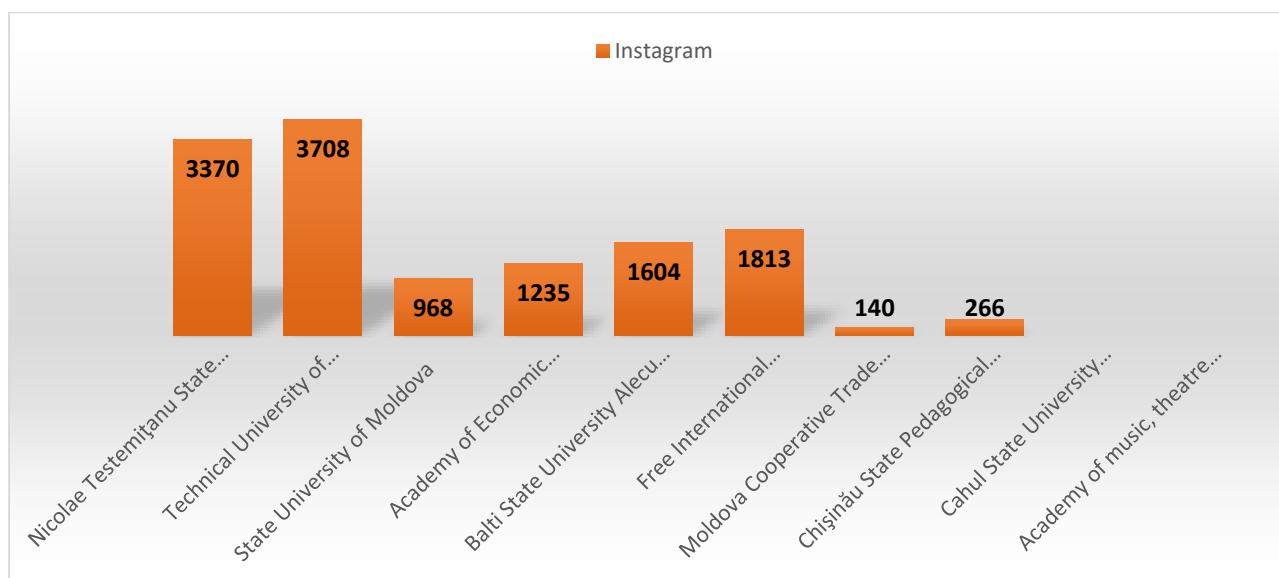


Figure 2. Number of followers on Instagram pages of universities (July, 2022)

Source: <https://www.instagram.com>

Owing to the competitive nature of higher education, it becomes an important task for any educational institution to attract the students. A website is an important tool for this purpose, as it helps to attract students and other stakeholders of higher education by disseminating the institution’s portfolio on its portal. The presentation site is the most important online communication tool, because it is responsible for creating and improving the image of the institution. [6] In this context, below is represented the websites situation of the top 10 universities of Moldova:

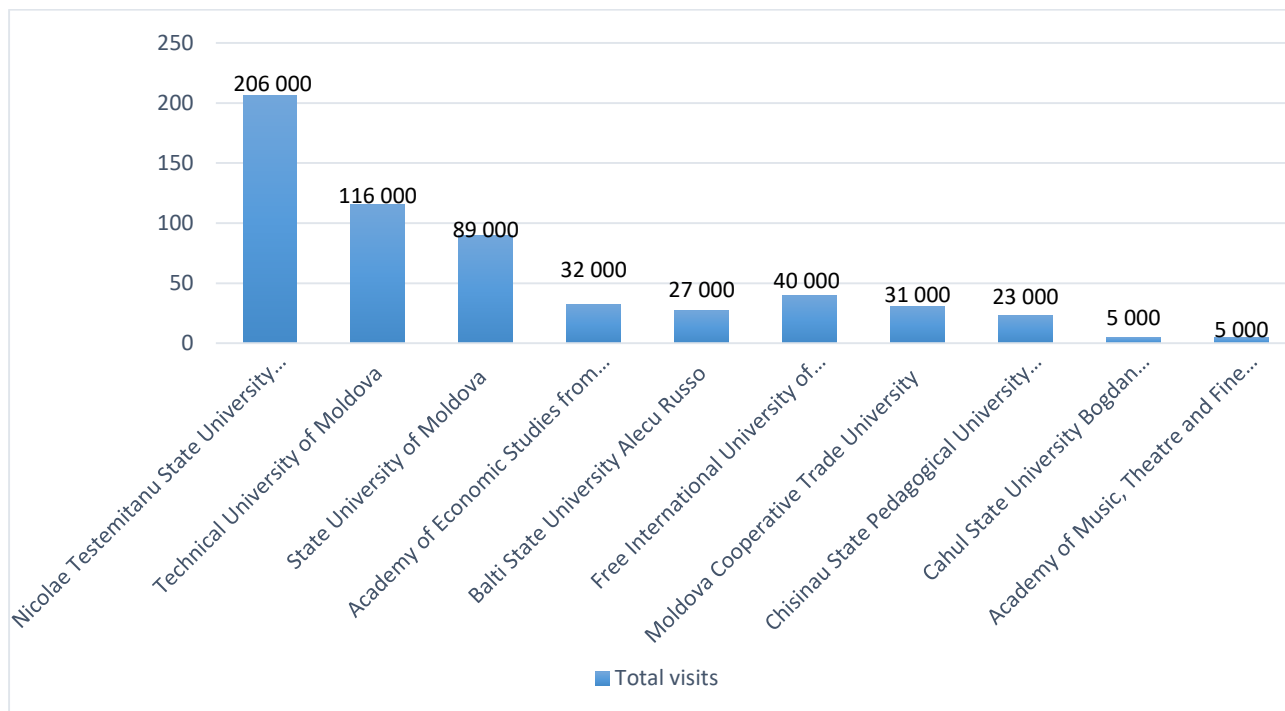


Figure 3. Total visits on universities websites (July, 2022)

Source: <https://www.similarweb.com>

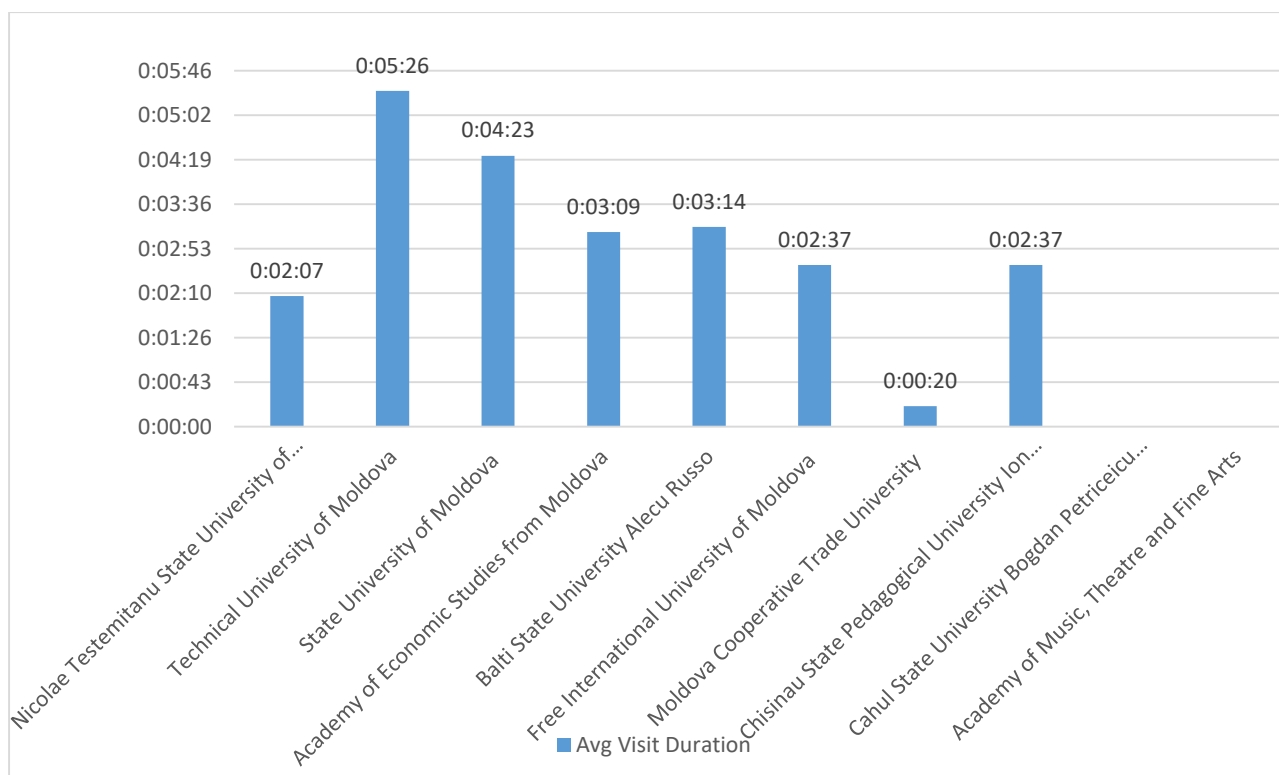


Figure 4. Average visit duration on universities sites (July, 2022)

Source: <https://www.similarweb.com>

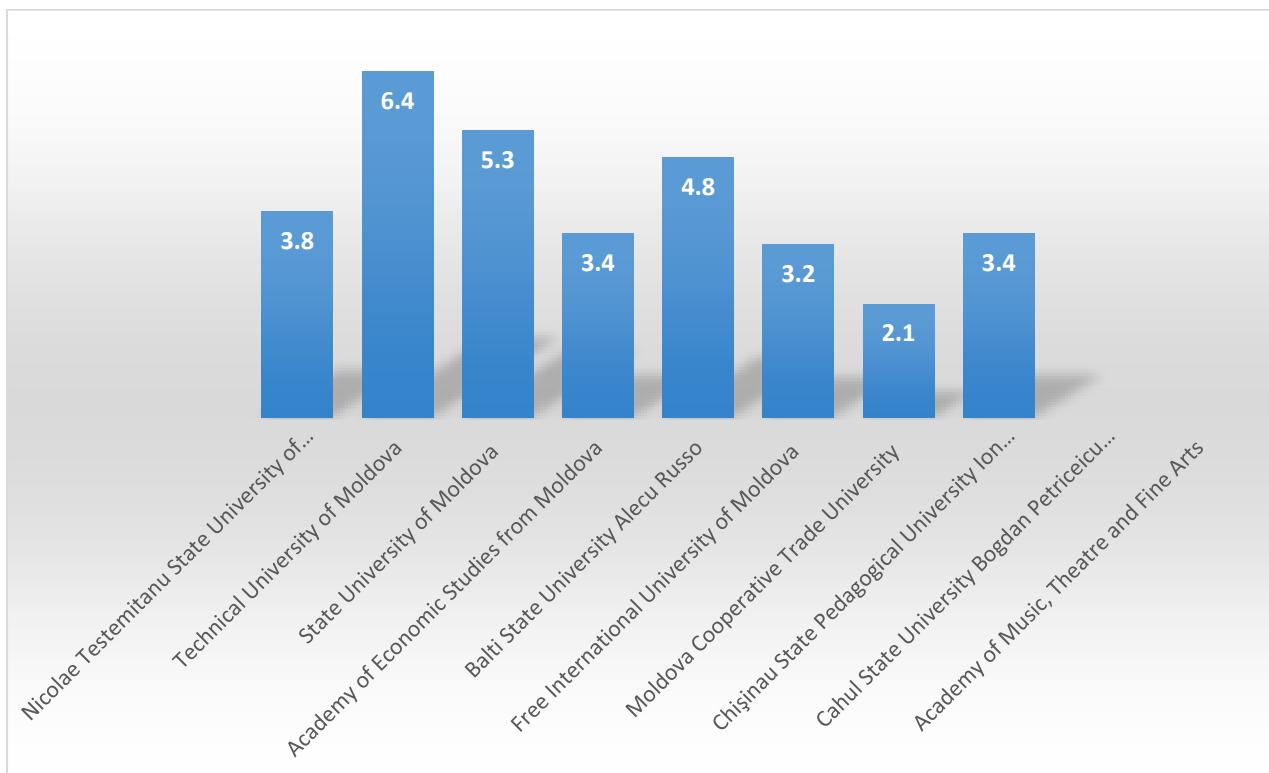


Figure 6. Number of pages per visit

Source: <https://www.similarweb.com>

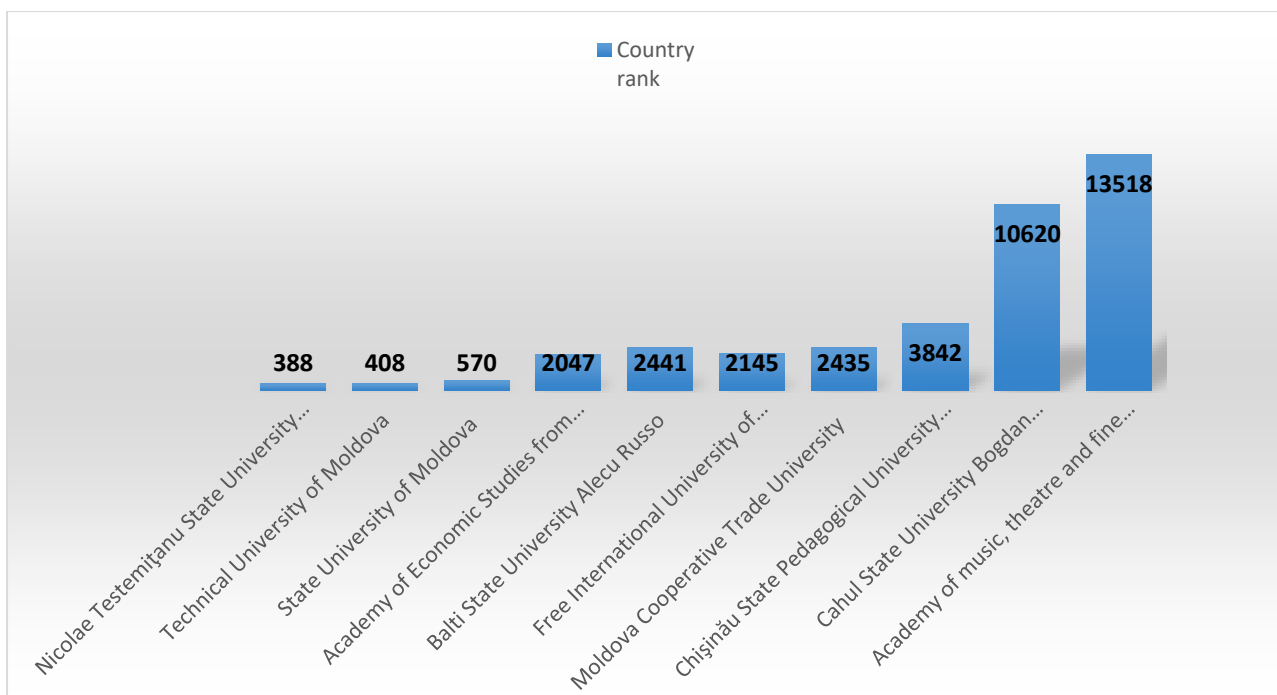


Figure 7. Universities web pages on general country rank

Source: <https://www.similarweb.com>

THE ROLE OF UNIVERSITY IMAGE IN THE PROCESS OF CHOOSING THE INSTITUTION BY CANDIDATE STUDENTS

The institutional image has a positive influence on the perceived value of the educational offer. For universities it's important to know how to combine the various facets of the perceived value in order to provide the value expected by their stakeholders, primarily by students. The image perceived by the target audience, if it corresponds to the representations about the educational institution, determines the demand for the educational offer of one. Also, the absence of a coherent promotion policy or the lack of communication makes the potential beneficiaries consider the educational offer as uninteresting just because of the lack of information. [5]

In 2021 in the Academy of Economic Studies of Moldova, 704 students participated in a survey where presented their opinion about the decision of choosig the university:

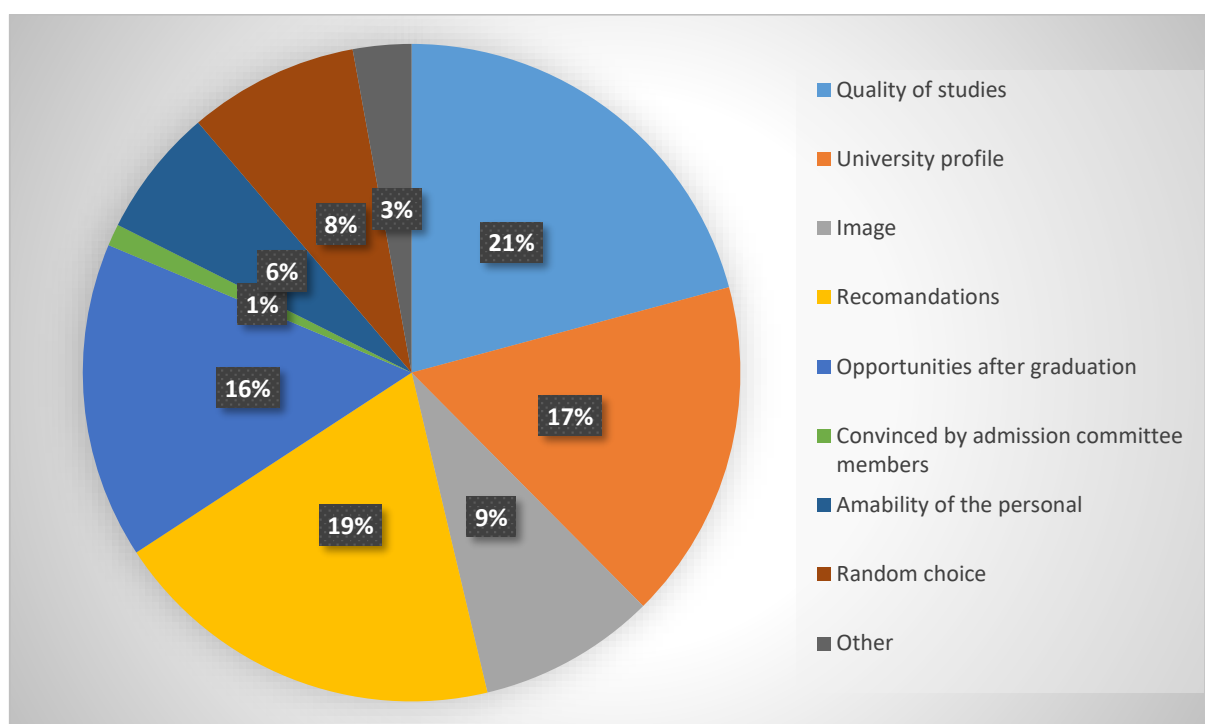


Figure 8. Reasons why students choose a university

Source: Created by the author

Because university image means also quality of studies, amability of personal, recommendations etc., the results of the survey shows that image has a significant impact on competitive advantage and the role in the process of choosing the institution by candidate students it's substantial.

Much research in corporate image has agreed that it is a collection or set of “images” in the receiver and controlled by the organization. Any individual can have many positive, negative and indifferent images of the organization, the organization’s product, the organization’s reputation and so on. One institution that absolutely depends on its image in order to prosper and even survive is the university. Thus the image influences the increases in sales and strengthening of brand loyalty. Therefore, brand image is being highly considered in the context of companies and in the non-profit field. If we look at the corporate image through the lens competitiveness, it is shaped and communicated to gain a competitive advantage. Starting with the corporate identity, which, through

marketing communication, creates and shapes the image of the university, this image leading to a competitive advantage.

Thus, goals of the university are to create a desirable image among the students/ potential students and to build and maintain a solid reputation. In this context, one of the main conclusions regarding image is that it is an asset that is difficult to imitate and provides a solid basis for competitive positioning in the market. [4]

CONCLUSION

The fierce competition on the global higher education market, forced universities to innovate, to look for new ways to build their offer. Relationship marketing and the knowledge regarding the stakeholders, primarily the students' perception of their offerings, can provide universities with a competitive advantage. As such, university managers need to carry out satisfaction surveys, inquiries regarding the universities image or the perceived value of the academic programs and services offered, need to plan and organize offline and online integrated marketing communication campaigns. Image, as a competitive advantage is a real step in the selection and implementation of a common strategy to achieve and maintain superiority and students.

BIBLIOGRAPHY

1. Bankole D. (2019) Webometrics: the quantitative web research for the ranking of nigerian universities websites, available at: https://www.academia.edu/38573424/WEBOMETRICS_THE_QUANTITATIVE_WEB_RESEARCH_FOR_THE_RANKING_OF_NIGERIAN_UNIVERSITIES_WEBSITES_docx
2. Barich, H. & Kottler, P. (1991). A framework for marketing image management. *Sloan Management Review*, 32(4), 20-33.
3. Belostecnic, G., (2013) Universități competitive pentru o societate competitivă. Materialele Conferinței Științifice Internaționale „60 de ani de învățământ economic superior în Republica Moldova: prin inovare și competitivitate spre progres economic”, p. 9-12. ISBN 978-9975-75-668-6
4. Botezat, E., Malancea, I., (2017) Bazele marketingului, București: Editura Economică ISBN 978 973 709 811 5) [7, p. 15].
5. Dobre C., Milovan A. (2021) The Perceived Value of Higher Education and University Competitiveness - The Rubik Cube Metaphor, *Journal Review of innovation and competitiveness*, 7(1):33-59
6. Dobre C., Milovan A., (2019) Marketing online și social media, ISBN 978-606-18-0842-7
7. Kapferer, J., (2008) The New Strategic Brand Management. [16, p. 218]. Philadelphia: Kogan Page, ISBN 978 0 7494 5085 4
8. Nehme, A., Lindos, D., Charbel, E.K. (2014) University image and its relationship to student satisfaction- case of the Middle Eastern private business schools, *International Strategic Management Review*
9. Schuler, M. (2004). Management of the organizational image: A method for organizational image configuration, *Corporate Reputation Review*, 7(1), 37-53
10. <https://www.hubspot.com/>
11. <https://www.webometrics.info/>
12. <https://www.similarweb.com>
13. <https://www.facebook.com>
14. <https://www.instagram.com>

CZU: 330.341.1:334.722

DOI: <https://doi.org/10.53486/dri2022.08>

ECO-INNOVATION – A DRIVER TO SUSTAINABLE BUSINESSES

TATIANA PĂDURARU ⁸

Abstract: *The urgency for sustainable changes in business performance both in product development or in different processes of the organizational areas emphasize the importance of eco-innovation in business strategy. Eco-innovation becomes a key component of the ongoing process of improving sustainability and for improving the environmental performance of the companies toward a more sustainable business model. Thus, a better understanding of barriers and drivers at the business level could build a better picture of the necessary framework for eco-innovation to be developed in Europe. The paper analyzes the challenges, barriers and drivers for adoption of eco-innovation in the European companies, as well as green markets and resource efficiency, based on two relevant studies carried out in Europe. In this context, the paper underline that European companies need a better support both at national and European level in order to incorporate sustainability into their core decision making and to integrating it throughout all business dimensions, enabling the creation of novel solutions to satisfy market needs.*

Key words: *eco-innovation, sustainable development, sustainable businesses, barriers, drivers, business model.*

JEL CLASSIFICATION: O31; O32; O38; O44.

INTRODUCTION

In recent decades, many governments and companies around the world have shown interest in becoming more sustainable in order to support sustainable development goals, while keeping industry and the economy competitive. For example, Aghion emphasise that there will be no green growth without innovation [Aghion et al., 2009]. Thus, both companies and governments have started to promote eco-innovation through various initiatives and concrete ways. Until now, the promotion of eco-innovation has focused mainly on the development of environmental technologies, but today there is a growing understanding of the non-technological aspects of innovation, which reflects the fact that the focus of innovation on sustainable development demands broad structural changes in society [Nicolai & Pillot, 2017].

With environmental degradation and global resource scarcity presenting growing challenges for business along with related regulatory and market pressures, companies need to think strategically about their business sustainability. Thus, eco-innovation can help them to turn these challenges into new market opportunities. Eco-innovation can provide entrepreneurial opportunities in different fields, such as renewable energy technologies, pollution prevention schemes, waste management equipment, green financial products or ecological agriculture [Arundel & Kemp, 2009] and also can support companies facing fierce competition by providing competitive advantages [Chassagnon & Haned, 2015].

⁸ Ph.D Student, email: tatiana.panaghiu@gmail.com

ORCID: 0000-0003-1851-2517

Research shows that eco-innovative companies of all sizes are growing, on average, at a rate of 15 per cent a year, at a time when their respective markets have remained flat. Small and medium-sized enterprises (SMEs) are particularly responsive to eco-innovation due to their adaptability and flexibility, and as contributors of as much as 70 per cent of GDP and two-thirds of formal employment in developing and emerging economies, they are potentially a key driver of a resource efficient economy [UNEP, 2014].

This paper presents an overview regarding eco-innovation concept, as well as the role of eco-innovation in companies for the development of sustainable businesses. Also, the paper analyzes the challenges, barriers and drivers for adoption of eco-innovation in the European companies, as well as green markets and resource efficiency, based on two relevant studies carried out in Europe.

WHAT IS ECO-INNOVATION AND WHY IT IS IMPORTANT?

As eco-innovation is a relatively recent concept, mentioned for the first time by Fussler and James (1996), over time it has been developed in the specialized literature by many other authors. The first definition of eco-innovation appeared in the book “Driving Eco-Innovation” by Fussler and James and the concept was defined as “new products and processes that provide customer and business value while significantly decreasing environmental impacts” [Arundel & Kemp, 2009].

Over the time the definition of eco-innovation has been expanded to take into account various concerns of an innovation supporting sustainable development. A broader definition of the concept of eco-innovation is provided by the European Observatory on Eco-innovation (2010): “Eco-innovation is the introduction of any new or significantly improved product (good or service), process, organisational change or marketing solution that reduces the use of natural resources (including materials, energy, water and land) and decreases the release of harmful substances across the whole life-cycle” [Methodological report, 2010].

According to UNEP (2014), Eco-innovation is „*the development and application of a business model, shaped by a new business strategy, which incorporates sustainability throughout all business operations based on life cycle thinking and in cooperation with partners across the value chain. It entails a coordinated set of modifications or novel solutions to products (goods / services), processes, market approach and organizational structure⁴ which leads to a company’s enhanced performance and competitiveness*” [UNEP, 2014]. This approach allows companies to identify the solutions that can be implemented in order to face the major challenges, to be able to anticipate and avoid them in the future.

In the national context, eco-innovation has an implication at all levels offering multiple benefits, as we can notice in the Figure 1 „Why to eco-innovate”, both for the economy, environment, society and politics.

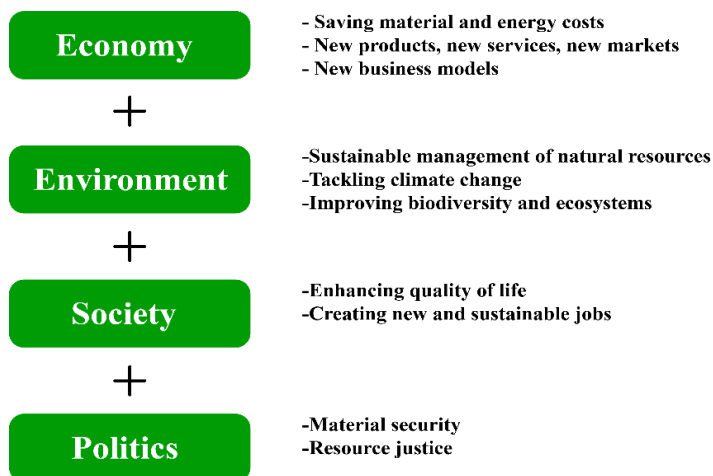


Figure 1. Why Eco-innovation

Source: EIO and CfSD (2013) *Eco-innovate! A guide to eco-innovation for SMEs and business coaches*. Eco-Innovation Observatory. Funded by the European Commission, DG Environment, Brussels

In the actual context of climate change, resource scarcity, environmental degradation, worker welfare, certain factors of change are born in the way companies operate. Instead of viewing the environment as just a source of raw materials, companies are starting to internalise environmental sustainability in how they meet customer needs. Businesses need to change the rules of the game by changing how they create, deliver eco-innovative products and capture value.

Eco-innovation has been widely accepted as a method for improving the environmental performance of enterprises and for supporting them to improve their products, as well as to advance to more sustainable business models, and as a driver of business success and competitive advantage at the firm level.

Smart, sustainable and inclusive growth is the focus of the Europe 2020 Strategy [European Semester]. As recalled by the Flagship initiatives For a Resource Efficient Europe and Innovation Union, eco-innovation is vital for delivering the Strategy’s objectives. Therefore, in December 2011, The European Commission adopted the Eco-innovation Action Plan (EcoAP) with the aim of accelerating market uptake of eco-innovation by addressing its barriers and drivers. The EcoAP is therefore an important element of the European policy framework for sustainable consumption and production [Eco-Innovation].

Each company has its own motivations and reasons for eco-innovating. These motives have been captured by UNEP, analyzed and organized as the five drivers for eco-innovation, which offers an added value to the companies [UNEP 2014]:

1. Access new and emerging markets
2. Increase profitability along the value chain
3. Stay ahead of standards and regulation
4. Attract investment
5. Increase productivity and technical capacity

Eco-innovation refers to the implementation of the strategies to decouple economic growth from environmental degradation and achieve greater resource efficiency. It aims at doing more and better with less across the entire life cycle of products. At its core, eco-innovation is about reducing resource intensity of products and services and creating new business models that are both competitive, respect the environment and generate value along the entire value chain [Szilagyi et al., 2018].

RESOURCE EFFICIENCY, GREEN MARKETS AND CHALLENGES FOR ADOPTION ECO-INNOVATION IN THE EUROPEAN COMPANIES

Over time, various studies have been carried out, at the European level, regarding the efficiency of resources, green markets or the adoption of eco-innovation within companies, in the context of supporting a sustainable growth and development. Thus, the most important studies that evaluate the current levels of actions in terms of resource efficiency and the green market, within companies, are the Flash Eurobarometer surveys: FL342 in 2012, FL381 in 2013, FL426 in 2015, FL456 in 2017 and FL498 in 2021. Regarding the evaluation of eco-innovation activities within companies, there is only one survey carried out in 2011, namely Flash Eurobarometer 315 "Attitudes of European entrepreneurs towards eco-innovation", which offers a perspective on the implementation of eco-innovation, as well as the challenges faced by entrepreneurs.

In continuation, for a better understanding of the current context in Europe regarding the existing conditions within companies in order to promote the efficient use of resources and the implementation of eco-innovation for a sustainable development, the author analyzes and presents the results of 2 relevant studies in this regard, namely: Flash Eurobarometer 498 "SMEs, green markets and resource efficiency" (2021) and Flash Eurobarometer 315 "Attitudes of European entrepreneurs towards eco-innovation" (2011).

CHALLENGES, BARRIERS AND DRIVERS FOR ADOPTION OF ECO-INNOVATION IN THE EUROPEAN COMPANIES

One of the most important studies regarding eco-innovation at the firm level is The Flash Eurobarometer 315 "Attitudes of European entrepreneurs towards eco-innovation" [Gallup, 2011] that identifies the main concerns, barriers and drivers perceived by EU entrepreneurs regarding eco-innovation. A total of 5,222 SME's managers from 27 EU Member States were interviewed by telephone between 24 January and 1 February 2011. The survey covered SMEs from various sectors (agriculture, forestry and fishing; manufacturing, constructions, water supply and waste water, waste management and food) and focused on four main aspects: how cost and availability of materials affects the businesses; the status of eco-innovation activities and investments in the companies; the barriers to an accelerated uptake of eco-innovation and the drivers for an accelerated uptake of eco-innovation.

The main findings of the survey referring to the European companies revealed that [Gallup, 2011]:

- Almost a quarter (24%) of managers said that 50% or more of their company's "total costs" (gross production value) consisted of "material costs".
- Three-quarters of businesses had experienced an increase in material costs in the past five years; In Germany, Poland, Malta and the UK, more than 80% of respondents answered that material costs for their company had increased moderately or dramatically in the past five years (between 85% and 88%).
- in order to reduce material costs, 56% of companies had purchased more efficient technologies in the past five years, while 53% had developed more efficient technologies in-house during that time frame.
- Just over a third of companies (35%) reported that less than 10% of their innovation investments in the past five years were related to eco-innovation – i.e. implementing new or

substantially improved solutions resulting in more efficient use of materials, energy and water. A quarter estimated that this share was between 10% and 29%.

- In only six countries, over a fifth of respondents estimated that 30% of their innovation investments were related to eco-innovation: Sweden (21%), Greece (22%), Austria (23%), Cyprus and Luxembourg (both 24%) and Poland (30%).

- Roughly 3 in 10 (29%) companies in the EU had introduced a new or significantly improved eco-innovative production process or method in the past two years, while roughly a quarter (24%) had introduced a new or significantly improved eco-innovative organisational method. A similar proportion (25%) had introduced a new or significantly improved eco-innovative product or service on the market.

- It was expected that those medium-sized companies with an annual turnover between 10 and 50 million euros and those that have grown in terms of turnover in the last two years have introduced these types of eco-innovation.

Interviewees were presented 14 potential barriers and drivers to an accelerated development and uptake of eco-innovation. In the table below, the author has made a top of 8 potential barriers and drivers to an accelerated development and uptake of eco-innovation, based on the survey’s results. As we can see the main barriers in the European companies regarding implementation of eco-innovation is related to the lack of funds, the uncertain market demand or uncertain return of investment. As far as that goes the main drivers of developing eco-innovation are related to current high energy and materials prices or expected increases in energy prices.

Table 1. Top 8 potential barriers and drivers to an accelerated development and uptake of eco-innovation

BARRIERS	DRIVERS
to an accelerated uptake of eco-innovation	
Uncertain demand from the market	Expected future increases in energy prices
Uncertain return on investment or too long a payback period for eco-innovation	Current high energy prices (as an incentive to innovative, to use less energy and decrease the cost)
Lack of funds within the enterprise	Current high material prices (as an incentive to innovate to use less material and decrease the cost)
Insufficient access to existing subsidies and fiscal incentives	Good business partners
Existing regulations and structures not providing incentives to eco-innovate	Secure or increase existing market share
Lack of external financing	Access to existing subsidies and fiscal incentives
Technical and technological lock-ins (e.g. old technical infrastructures)	Technological and management capabilities within the enterprise

Source: Made by author based on the source [Gallup, 2011].

Other interesting finding regarding the *barriers* to an accelerated uptake of eco-innovation is that “A lack of qualified personnel and technological capabilities within their enterprise” was considered a very serious barrier just by 23% of respondents, while 28% said this was a somewhat serious barrier. A smaller number of respondents thought that limited access to external information and knowledge was a barrier to introducing eco-innovations in their company (16% “very serious” and 27% “somewhat serious” responses).

Regarding the *drivers* to an accelerated uptake of eco-innovation, an important finding to underline is that the respondents in companies that had introduced at least one eco-innovation in the

past two years were not only more likely to describe various eco-innovation barriers as being “very serious” or “somewhat serious” ones, they were also more likely to think that each of the potential eco-innovation drivers listed in the survey were “very important”. For example, 44% of managers in eco-innovative companies said that the “increasing market demand for green products” was a very important driver for a faster uptake of eco-innovation in their company; the corresponding proportion in companies that had not introduced any eco-innovations in the past two years was 29%.

SMEs, GREEN MARKETS AND RESOURCE EFFICIENCY WITHIN EUROPEAN COMPANIES

In the context of the European SME Strategy, the Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs commissioned a Flash Eurobarometer survey to evaluate the current levels of resource efficiency actions and the state of the green market among Europe’s SMEs, as well as in neighboring countries and in the US. This survey was carried in 27 Member States of the European Union, Albania, North Macedonia, Montenegro, Serbia, Turkey, Iceland, Moldova, Norway and the US in 2021, more than 17 500 SMEs and large companies were interviewed via telephone in these countries. The most important topics of the survey were: Actions that SMEs are currently undertaking to be more resource efficient; SMEs’ level of investment in resource efficiency; Measures in place to reduce carbon footprint and become climate neutral or negative; Barriers to going green and resource efficient; Type of support for going green and resource efficient; Tools and forms of assistance that would help most to go green and resource efficient; Green markets for SMEs and Type of support for producing green products or services; SMEs with employees in green jobs.

The main findings of the survey reveal that [Flash Eurobarometer 498, 2021]:

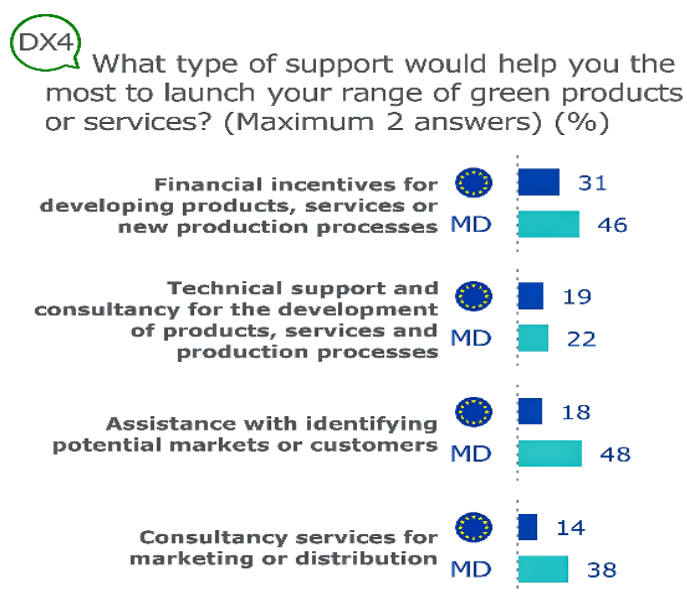
- Most SMEs surveyed are taking measures to be more resource efficient: 89% of SMEs are taking at least one of the actions listed in the survey, compared to 9% that are not taking any action
- The most common resource efficiency actions undertaken by SMEs are minimising waste (64%), saving energy (61%), saving materials (57%), recycling by reusing material or waste within the company (47%) and saving water (46%).
- More than three-quarters (77%) of SMEs plan to implement (further) measures to improve resource efficiency in their company. The most common resource efficiency actions that are planned for the next two years are saving energy (53%), minimising waste (50%) and saving materials (48%).
- Actual investment in resource efficiency remains low – 35% of SMEs surveyed invested 1% or more of their turnover in this area in the past two years.
- A vast majority of SMEs (72%) do not (yet) have a concrete strategy in place to reduce their carbon footprint and become climate neutral or negative.
- The most common difficulty SMEs encountered when setting up resource efficiency actions is the complexity of administrative or legal procedures (34%), followed by the cost of environmental actions (24%). Other barriers refers to a lack of supply of the required materials, parts, products or services.
- Among SMEs that take resource efficiency actions, 64% rely on their own financial resources and 54% on their own technical expertise in their efforts to be more resource efficient. About a quarter of SMEs (24%) rely on external support.
- More than one third of SMEs (36%) think that grants or subsidies would help their company the most to be more resource efficient.
- About one in three (32%) SMEs in the EU offer green products or services, with a further 11% planning to do so in the next two years.

- At least one full-time employee working in a green job some or all the time: 33% say there are between one and five ‘green’ employees in their SME and 5% that their number is higher than five.

SMES, GREEN MARKETS AND RESOURCE EFFICIENCY IN MOLDOVA

The Flash Eurobarometer survey 498 reveals also some useful data besides *Moldova* [SMEs and green markets, 2021], with the mention that the results should be interpreted with caution due to the smaller number of interviews that having been conducted (107). Regarding the most common resource efficiency actions undertaken by SMEs from Moldova, the trends are a little bit different from the EU average: minimising waste (58%), saving energy (54%), saving water (52%), saving materials (47%). Using predominantly renewable energy (e.g. including own production through solar panels, etc.) is the least action undertaken by SMEs from Moldova in proportion of just 7%. Furthermore, 39% from the Moldovan companies have invested less than 1% of annual turnover in order to be more resource efficient and about 37% companies have invested between 1 and 10% of their annual turnover, that represents a higher average than EU countries (35%).

The study also reveals that just 14% from Moldovan SMEs have a concrete strategy to reduce their carbon footprint and become climate neutral or negative, in comparison with EU companies that represents an average of 24%. Regarding the type of support for going green and resource efficient, the most important for the SMEs from Moldova are: Grants or subsidies (48%) and Consultancy on how to improve resource efficiency in your company (32%). Also, we can notice in the existing survey that about 38% from the companies offer green products or services, a figure higher than the EU27 average that represents just 32%. At the same time, 35 of the SMEs says that they do not offer green products or services and are not planning to do that. Finally, regarding the situation in Moldova, the study reveals that companies need assistance in identifying potential markets or customers (48%) in order to launch their range of green products or services and also financial incentives for developing products, services or new production processes (46%), as we can see in Figure 2.



Base: SMEs that do not offer green products or services

Figure 2. Type of support that would help SMEs to launch their range of green products or services

Source: Flash Eurobarometer 498 „SMEs, green markets and resource efficiency” 2021, Moldova factsheet

The figures presented in this analysis must be interpreted with caution, because they do not represent the national context, due to the small number of companies interviewed in this study, in Moldova. However, data helps to have a general overview of the actual context within enterprises regarding the efficient use of resources as a premise in the development of eco-innovation and sustainable businesses.

CONCLUSION

Our planet needs actors that take transformative action towards new ways of production, new ways of consumption that are mindful of planetary boundaries and ultimately reduce the need for natural resources. Thus, eco-innovation represents an opportunity for businesses that aims at stimulating human creativity at its best. Eco-innovation is one of the key enabling instruments identified by the EU for the transition to a more resource efficient economy. It is embedded in the Europe 2030 strategy for a more sustainable growth and the European Commission has developed over the years a policy framework and dedicated funding to encourage uptake of eco-innovative solutions by the market, for example by creating Eco-innovation Action Plan (EcoAP) with the aim of accelerating market uptake of eco-innovation in the European countries.

The analyzed studies in this paper reveal that Europe have a great potential in the development of eco-innovation and there are optimistic changes within companies regarding resource efficiency. Three-quarters of businesses from Europe had experienced an increase in material costs and 56% of companies had purchased more efficient technologies in the past five years [Gallup, 2011]. However, just over a third of companies (35%) reported that less than 10% of their innovation investments were related to eco-innovation. In this context, the study “Attitudes of European entrepreneurs towards eco-innovation” emphasizes the main barriers and drivers for adoption of eco-innovation in the European companies. Of the 14 *barriers* listed in the survey, three could be identified as being mentioned most frequently as a very serious or somewhat serious barrier to an accelerated uptake of eco-innovation in respondents’ companies: (1) uncertain demand from the market, (2) lack of funds within the enterprise and (3) an uncertain return on investment or too long a payback period for eco-innovations. At the same time, of the 14 *drivers* listed in the survey, current and future high energy prices were mentioned most frequently as being “very important drivers” of accelerated eco-innovation uptake in respondents’ companies, as well as Good business partners.

Regarding the SMEs, green markets and resource efficiency within European companies we can underline that most of SMEs are already taking measures to be more resource efficient. The most important actions are related to minimising waste, saving energy, saving materials, recycling by reusing material or waste within the company and saving water. The most common *difficulty* SMEs encountered when setting up resource efficiency actions is (1) the complexity of administrative or legal procedures, followed by (2) the cost of environmental actions, (3) lack of supply of the required materials, parts, products or services.

In conclusion, we can say that although European companies show their interest in using resources as efficiently as possible, to eco-innovate or to create green products and services, they face a series of challenges and barriers, mostly related to the lack of funds, complexity of administrative or legal procedures or uncertain return on investment. Companies need a better support both at national and European level in order to incorporate sustainability into their core decision making and to integrating it throughout all business dimensions, enabling the creation of novel solutions to satisfy market needs. As part of this process, companies should be helped to look beyond its gates to assess

sustainability risks and opportunities throughout its value chain, and in cooperation with the key partners.

REFERENCES

1. Aghion, P., D. Hemous and R. Veugelers (2009), “[No green growth without Innovation](#)”, Bruegel Policy Brief, 2009/07, Bruegel Brussels
2. Arundel, A. & Kemp, R. (2009). Measuring eco-innovation. UNU-MERIT Working Papers, ISSN 1871-9872. Disponibil pe: <https://www.oecd.org/greengrowth/consumption-innovation/43960846.pdf>, accesat la 01.08.2022
3. Chassagnon, V. & Haned, N. (2015). The relevance of innovation leadership for environmental benefits: A firm-level empirical analysis on French firms. *Technological Forecasting and Social Change*, 91, pp.194-207, Disponibil pe: The relevance of innovation leadership for environmental benefits: A firm-level empirical analysis on French firms - ScienceDirect, accesat la 16.08.2022
4. Eco-Innovation at the heart of European policies. Disponibil pe: <https://ec.europa.eu/environment/ecoap/about-action-plan/objectives-methodology>, accesat la 21.08.2022
5. EIO and CfSD (2013) Eco-innovate! A guide to eco-innovation for SMEs and business coaches. Eco-Innovation Observatory. Funded by the European Commission, DG Environment, Brussels
6. European Semester. Disponibil pe: https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester_en, accesat la 22.08.2022
7. Flash Eurobarometer 498 (2021) „SMEs, green markets and resource efficiency” Report, 2021. Disponibil pe: available on <https://europa.eu/eurobarometer/surveys/detail/2287>, accesat la 19.08.2022
8. Gallup Organization upon the request of Directorate-General Environment (2011): Flash Eurobarometer 315 – Attitudes of European entrepreneurs towards eco-innovation - Analytical report. Disponibil pe: https://data.europa.eu/data/datasets/s904_315?locale=en, accesat la 28.08.2022
9. Methodological report of ecoinnovation observatory (2010), pag10. Disponibil pe: https://www.chamberofecocommerce.com/images/EIO_Methodological_Report_2010.pdf, accesat la 01.07.2022
10. Nicolaï Isabelle, Pillot Julien (2017). Promote and Support Eco-innovation. *International Journal of Sustainable Development*, Inderscience, 2017, Promote and support eco innovation, 20 (1/2). fihal- 01715029f
11. SMEs and green markets (2021) Moldova factsheet. Disponibil pe: <https://europa.eu/eurobarometer/surveys/detail/2287>, accesat la 01.07.2022
12. Szilagyi Aida et al. (2018). *Procedia - Social and Behavioral Sciences*, „Eco-innovation, a business approach towards sustainable processes, products and services”, Volume 238 (2018) 475-484. Disponibil pe: <https://www.sciencedirect.com/science/article/pii/S1877042818300569?via%3Dihub>, accesat la 14.08.2022
13. UNEP 2014, The Business Case for Eco-innovation

CZU: 657.15:006(478)

DOI: <https://doi.org/10.53486/dri2022.09>

EXAMINATION OF METHODOLOGICAL ASPECTS REGARDING THE HARMONIZATION OF BUDGETARY ACCOUNTING IN THE CONTEXT OF IPSAS

RAILEAN TATIANA⁹

Abstract: *Republic of Moldova has the task of reforming the budget accounting system to IPSAS requirements. The methodological problems of budget accounting reform are studied, national and international accounting methodological aspects are compared. Finally, recommendations are proposed to harmonize the accounting methodology in the context of IPSAS, taking into account the national specifics.*

Key words: *International Public Sector Accounting Standards, budgetary sector, financial reports, budgetary accounting*

JEL CLASSIFICATION: M41, H83.

INTRODUCTION

The change of the socio-economic formation in Republic of Moldova at the borders of the centuries and the intensification of the globalization of the economy in the world at the end of the 20th century, imposed, in addition to a set of other tasks, the reform of the national accounting in the public sector. The main direction of the reform consists in improving the quality of the information presented and ensuring free access to it by users. The beginning of the implementation of the accounting reform in the public (budgetary) sector in the Republic of Moldova was highlighted since 2016, through the approval of the single Plan of Accounting Accounts for the budgetary system (OMF 216/2015) and integrated with the Economic Classification (OMF 208/2015). The respective chart of accounts was developed in accordance with the requirements of the Financial Statistics Standards (GFS 2001), which represents one of the priority activities in the reform of Public Finance Management at the international level. As a continuation of the reform of the budget accounting system, at the end of 2016 the order of the Minister of Finance No. 159 regarding the Concept and Action Plan for the development of National Accounting Standards for the Public Sector (SNCSP) was approved. The concept envisages studying the International Public Sector Accounting Standards (IPSAS) and using them as a guide for developing one's own accounting standards for the budget system. So far, with the help of European technical assistance, 22 projects of National Accounting Standards for the Public Sector have been developed out of 28 planned. Through the extent of the changes taking place in the accounting system in the budget sector, a new stage of the budget reform is manifested, the goal of which is the convergence of international and national accounting standards for the public sector. That reform allows for the alignment of the accounting principles and

⁹ Ph.D Student, email: tanea.r2018@mail.ru
ORCID: 0000-0002-2988-1484

requirements of the national budget sector with the conditions of activity in a market economy. In order to have a clearer vision regarding the challenges encountered during the development of the respective reform, the accounting regulations from IPSAS are analysed with those from The order of the Ministry of Finance no.216/2015 on the approval of the Chart of Accounts in the budgetary system and of the Methodological Rules on accounting and financial reporting in the budgetary system and from other national normative frameworks in force. Based on the results obtained, not only the conclusion but also recommendations are presented, which, in the opinion of the author, will not only simplify the convergence of IPSAS (2021) with SNCSP (OMF 159, 2016), but will also be taken into account in making decisions during reform.

RESULTS AND DISCUSSIONS

In the scientific and legal literature on accounting, both international and national, there are two expressions with analogical meaning such as "accounting for the public sector" and "accounting for the budget sector". After a thorough analysis, it was identified that the public sector includes a wider range of entities, which participate in the achieving of budget commitments, but which operate both with financial autonomy (with state capital) and without financial autonomy (financed based on the allocations approved by law).

IPSAS does not provide a clear definition of the public sector, but only a disclosure of this concept by listing the institutions related to it. Thus, in the Preface of the IPSAS Manual (2021), public sector institutions include national governments, regional governments (e.g. state, provincial, territorial), local governments (e.g. city, town) and related government entities (for example, agencies, councils, commissions and enterprises), unless otherwise specified.

According to the economic content, the composition of the "public sector" differs from that of the "budgetary sector". In the international literature (including Wikipedia), as well as in the legislation of the Republic of Moldova, the public sector includes central public authorities, territorial administrative units, state/municipal enterprises, commercial companies with full or majority public capital (Figure 1). The budgetary sector has a narrower component, including only budgetary authorities/institutions, which honor their budgetary commitments within the limits of budgetary allocations approved by law.

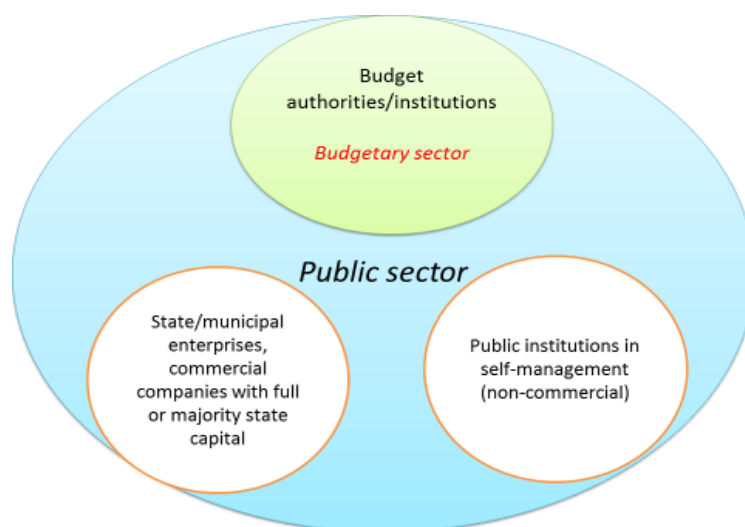


Figure 1. The composition of the public sector of the Republic of Moldova.

Source: legislative and normative framework of the Republic of Moldova

Taking into account that the legal framework of the Republic of Moldova provides for the keeping of accounting records of state enterprises, commercial companies and self-managed public institutions (which are part of the public sector) by applying the National Accounting Standards for the corporate sector, as well as the fact that the regulatory framework in budgetary and accounting regulatory force applies the notion and meaning of "budgetary sector/system" (e.g.: OMF 216, 2015) it is recommended to change the name of the national accounting standards to be developed by replacing "public sector" in "budgetary sector".

During the study of the IPSAS Manual (2021) and international practices, it was noted that in the composition of the SNCSP to be developed in accordance with OMF 159, 2016, the Conceptual Framework for accounting and financial reporting in the budget sector is missing. This is a document that includes main aspects such as:

- the requirements regarding the reflection of information in financial reports;
- principles (characteristics) for the preparation of financial reports;
- the composition, definition, recognition criteria and assessment of accounting elements;
- fundamental accounting regulations.

Additionally, it is appropriate to define and describe new accounting concepts such as service potential, exchange and non-exchange transactions, control over an asset, past event, professional judgment, is welcome because are used in the language of each accounting standard elaborated.

Thus, during the implementation of the budgetary accounting reform, it is recommended to include in the list of accounting standards to be developed the document "Conceptual framework for accounting and financial reporting in the budgetary sector". It should be noted that studying and developing the conceptual framework is an important and responsible stage in the accounting reform, which also requires a certain period of time.

Along with the study of the Conceptual Framework mentioned in the text above, the composition of accounting principles, defined as qualitative characteristics in IPSAS, was examined. According to L. Lazari, (2017), accounting principles are conceptual elements, basic rules, which ensure the faithful, honest and complete representation of the evolution of the entity through the financial statements.

Therefore, the study and selection of new principles from IPSAS, requires a thorough and effective analysis, as their appearance amplifies and complicates the accounting record and relies more on the logical thinking of the accountant. Compliance with national and international accounting principles such as *prudence*, *the substance over form*, *faithful representation* requires the application of new accounting regulations related to the depreciation of assets, the recognition of contingent assets and liabilities, the annual review of the method of calculating depreciation, the reflection of revaluation reserves and fair value. The emergence of *the substance over form* causes a change in the accountant's traditional thinking and the use of professional judgment in the recognition of assets that do not belong to the institution in legal form, but which are under its control and generate economic benefits. The principle of *prudence* urges the fact that, in the subsequent evaluation of liabilities, assets, expenses and incomes, depreciations, risks, possible losses generated by carrying out the activity in the current or previous year must be taken into account. Assets and income should not be overvalued, while liabilities and expenses should not be undervalued. IPSAS explains that through *faithful representation*, accounting information must be as complete as possible, as neutral as possible, as simple as possible and contain as few errors as possible. With the emergence of this

principle, there is more and more discussion about the most appropriate model for the valuation of accounting elements: model based on historical cost and model based on fair value.

Fair value measurement has many opponents who believe that historical cost is still the most logical basis of measurement in financial reporting. At the heart of the historical cost versus fair value debate is the trade-off between the credibility and relevance associated with the two forms of valuation. According to Kaya (2013), the accounting profession has great reservations about the credibility of fair value measurement, reservations that are caused, among other things, by the difficulty and subjectivity of estimating future cash flows. The historical cost of an asset in a completed transaction is arguably the most credible measure of fair value at the transaction date (Cortese-Danile et al., 2010).

As a practical matter, accountants should prepare an accounting document showing how they determined fair value. Even so, the result in fair values can be manipulated. Valuation of balance sheet assets at fair value presents a risk of manipulation of the result. The use of the historical cost, as a measurement base, allows the provision of verifiable and objective information in the financial statements (Feleăgă, 2010).

Given that budgetary institutions generally do not carry out activities whose primary objective is to generate profit and are not subject to taxation, we believe that keeping the cost-based model is the most appropriate record of assets. According to this model, the value of an asset is reduced not only by depreciation but also by depreciation, which brings its value closer to market value. However, there are situations when the determination of value based on fair value is required. This is not a permanent record, but periodic or in unique cases such as in the case of inflation, accounting reform and in certain cases provided by law.

Studying the notion of assets and their accounting treatment in IPSAS (2021), there is a need to explain and further use concepts such as economic potential in the recognition of assets, the way of determining the depreciation of assets and their reflection in financial reports, the way of timely selection of the amortization method (in the national framework, the depreciation calculation method is only the linear method). Also, IPSAS provides for the identification and classification of tangible fixed assets in real estate investments, which are assets (land or building, or part of a building) intended to accumulate income from leasing or capital appreciation. Another IPSAS reclassification of tangible fixed assets is their transfer to inventory accounts, in the case of their intended sale.

During the research, the structure of financial reports was also examined in accordance with OMF 216/2015 and IPSAS 1. The budgetary accounting reform of 2016 improved this comparison and established a significant convergence of the structure of financial reports with IPSAS. This is because the financial reports have been developed and implemented in accordance with the GFS Manual (2001), which is almost analogous to the structure in IPSAS 1 (IPSASB, 2021). The national framework is missing only the "Statement of changes in net assets/equity" report. This ratio is an unknown phenomenon, since the budgetary institutions of the Republic of Moldova, due to their legal status, do not form their own capital and do not distribute dividends, but are fully financed by the budget and operate based on the allocations approved in the annual law. It is recommended that the draft of the respective Report exclude the information about equity and capital distributions (as provided by IPSAS1) and contain the comparative information with the previous period for the following elements:

- the financial result of the budgetary institution,
- correcting the results of previous years,
- changes in accounting policies,

- net income recognized directly from net assets,
- the amount of funding from the budget, considering that all the expenses of the budgetary institutions are carried out based on the budgetary allocations approved in the law.

Analyzing the composition and classification of the elements of the financial reports, it was identified that the asset elements in the national balance sheet are classified depending on the financial and non-financial criteria and are not grouped in current/non-current assets (according to IPSAS1). Liability items are not classified as current/non-current liabilities. It is mentioned that, specifically for the accounting of the budget system of the Republic of Moldova, the asset elements are classified into financial and non-financial. This classification is evident in the Chart of accounts of the budgetary system, approved by Order no. 216/2015. Also, the elements of the accounting balance, both in assets and in liabilities, are arranged in a chaotic manner and do not correspond to the criterion of increase/decrease in liquidity. Considering that the classification of elements in current and non-current assets and liabilities is relevant information when reading the Financial reports, as well as that the classification according to the financial and non-financial criteria is important for the analysis of the budget execution, we consider it appropriate to take into account both ways of classifying and dividing non-financial/financial assets into current and non-current assets, and financial/non-financial liabilities into current and non-current liabilities.

If we talk about the way of preparing financial reports, then we can say that IPSAS focuses on reflecting more limited information in financial reports, but with great details in the Narrative Report. While the Moldovan regulatory framework provides for the reflection of more detailed information in the forms and strictly with the requirements set out in the Requirements for the preparation of the Narrative Report on the execution of the budgets of the authorities/budgetary institutions (OMF 164/2016). We believe that the flexibility of information reflection allowed by IPSAS complicates their analogical preparation and assumes a subjective character that can bring lapses in the presentation of useful information. We recommend maintaining the national accounting provisions regarding the strictness and need for information reflected in financial reports, which improves verifiability and comparability.

CONCLUSION

Modernization of the accounting system in the budgetary sector are present and actual at the international level, being integral parts of the financial public management. It is a way to significantly improve the publicly assumed responsibility of administrations, to facilitate the analysis and comparison of financial reports drawn up in the budgetary sector, respectively to evaluate the performance of different levels of administration.

At the same time, being also considered a tool for improving transparency and comparability, accounting harmonization also implicitly contributes to the improvement of the decision-making process.

Convergence to IPSAS accounting requirements will allow the Republic of Moldova to maintain competitiveness on the world market. In the present paper, the most significant methodological aspects of IPSAS accounting were studied in analogy with those of national budget accounting. Moreover, for each topic discussed, recommendations were given by the author for the convergence of accounting regulations, taking into account the specifics of national accounting provisions. Adoption of IPSAS requires important financial resources, starting from the training of the staff and up to the provision of the necessary infrastructure. This aspect has a significant impact especially in the case of developing countries.

As a conclusion of the study, we can state that the application of IPSAS requirements has a direct and significant impact on the way of preparing financial reports and the decisions based on them, and this once again emphasizes the importance of their application in the accounting of budgetary institutions.

REFERENCES

1. Cortese-Danile, T.M., Mautz, R.D, McCarthy, I.M. (2010), *Ethics is Imperative to Effective Fair Value Reporting: Weaving Ethics into Fair Value*, Review of Business, vol. 30, nr.2, pp. 50-58.
2. Feleagă, L., Dragomir, V.D., Feleagă, N. (2010), *National Accounting Culture and Empirical Evidence on the Application of Conservatism*, Economic Computation and Economic Cybernetics Studies and Research, vol. 44, nr. 3, pp. 43-60.
3. Government Finance Statistics Manual 2001, [online] Available at: <<https://www.imf.org/external/pubs/ft/gfs/manual/index.htm>> [Accessed 15 September 2022].
4. IPSASB 2021, *Handbook of international public sector accounting pronouncements*, IFAC, published on 22.03.2021. Available at: <<https://www.ipsasb.org/publications/2021-handbook-international-public-sector-accounting-pronouncements>>[Accessed on 25 August 2022].
5. Kaya, C.T. (2013), *Fair Value versus Historical Cost: Which is Actually More “Fair”*, Journal of Accounting and Finance, vol. 60, pp. 127-137.
6. L. Lazari 2017, *Accounting principles: evolution, content, consequences*. Magazine / Journal "ECONOMICA" no. 4 (102)
7. The Order of the Ministry of Finance no. 208/24.12.2015 on the approval of the *Budget Classification*, published on 31.12.2015 in the Official Monitor of Republic of Moldova No. 68-71 art. 208. Available at: <https://www.legis.md/cautare/getResults?doc_id=133160&lang=ro>, [Accessed on 20 August 2022].
8. The Order of the Ministry of Finance no.216/28.12.2015 on the approval of the *Chart of Accounts in the budgetary system and of the Methodological Rules on accounting and financial reporting in the budgetary system*, published on 31.12.2015 in the Official Monitor of Republic of Moldova No. 377-391 art. 1001. Available at: <https://www.legis.md/cautare/getResults?doc_id=128219&lang=ro>, [Accessed on 19 August 2022].
9. The Order of the Ministry of Finance no.159/27.12.2016 on the approval of the *Concept and the Action Plan for the elaboration of the National Accounting Standards for the Public Sector*, published on 17.02.2017 in the Official Monitor of Republic of Moldova No. 50-59 art. 202. Available at: <https://www.legis.md/cautare/getResults?doc_id=120037&lang=ro>, [Accessed on 20 August 2022].
10. The Order of the Ministry of Finance no. 164/30.12.2016 on the approval of the *Requirements for the preparation of the Narrative Report on the execution of the budgets of the authorities/budgetary institutions*, published on 17.02.2017 in the Official Monitor of Republic of Moldova No. 50-59 art. 203. Available at: <https://www.legis.md/cautare/getResults?doc_id=124985&lang=ro>, [Accessed on 20 August 2022].
11. Public sector, 2022. Available at: <https://en.wikipedia.org/wiki/Public_sector#cite_ref-1>, [Accessed on 20 August 2022].

CZU: 330.341.4:332.12(478-21+498-21)
DOI: <https://doi.org/10.53486/dri2022.10>

QUANTITATIVE AND QUALITATIVE STRUCTURAL ECONOMIC CHANGES IN THE CITIES OF ZĂRNEȘTI (ROMÂNIA) AND STRĂȘENI (REPUBLIC OF MOLDOVA) IN THE PRE- AND POST-COVID-19 PERIOD

CRĂCIUN LAURENȚIU ¹⁰

Abstract: *Currently, the economic situation of several states on the globe has taken on alarming shapes. The increase in economic vulnerability, against the background of the sharp increase in the cost of energy resources, the global pandemic, the economic crisis generated by the war in Ukraine, the increase in geopolitical tensions in several regions of the world, have led economic entities of different sizes to review their strategy economic development, including structural transformations and traditional markets through foreign trade. The transformations in Romania and the Republic of Moldova, affected by the regional crisis, marked by socio-economic instability, already for more than half a year, are significant. Among the common problems faced by the human settlements in both countries are: the permanent economic adaptation to the changes in the conjuncture, the adjustment of the way of capitalizing the spatial resources by these two administrative-territorial entities, the implementation of economic, administrative and spatial decentralization, etc. The comparative study carried out through this research is part of a larger research of two Romanian cities located in Romania and the Republic of Moldova, being the subject of the doctoral study.*

Key words: *economic vulnerability, structural transformations, socio-economic instability, regional crisis.*

JEL CLASSIFICATION: C54

INTRODUCTION

In the last 3 decades, both in Romania and in the Republic of Moldova, the use of natural resources, as well as heritage, has become a major concern. Among the many common problems faced by the human settlements in Romania, as well as in the Republic of Moldova, are: the re-technology of the industry, the modernization of the transport system, the irrational way of capitalizing the spatial resources by these two administrative-territorial entities.

The difficult path to the market economy, but also the period of the COVID-19 pandemic, have left their mark on the economy of the two Romanian states, which are making special efforts to overcome this situation.[4].

By means of these mentioned problems, we will be able to follow the economic changes of a quantitative and qualitative nature, as well as the transformations produced during the transition to the market economy, which is carried out in both Romanian states on the example of two medium-sized cities. [2], [3],[4]. The present scientific approach, is part of a doctoral study "Integration of small and medium-sized cities in the regional urban system. Comparative study of human geography, on the example of the cities of Zărnești (Romania) and Strășeni (Republic of Moldova)". Through this study, the doctoral student aims to evaluate the degree of integration of small and medium-sized cities in the regional urban system and what quantitative and qualitative structural economic changes

¹⁰ Ph.D Student, email:dl.levis@yahoo.com
ORCID: 0000-0002-2209-7646

have taken place on the territory of these two cities in the current context of the regional situation created, both before and after the COVID-19 pandemic, but also caused by the war in Ukraine.

These cities, although they are part of different states, are very close in common interests and problems, which they currently have, under the conditions of their integration in the Romanian urban space, respectively in the urban space of the Republic of Moldova [7]. (Figure 1).



Fig. 1. Geographical position of the cities of Zărnești (Romania) and Strășeni (R. Moldova)

Source: Contour map: https://ro.Romania_location_map.svg Map processed by the author.

The city of Zărnești belongs to Brașov county, a county that is part of the Central Development Region of Romania. [17]. Considering that the territory of Brașov county intersects with old commercial roads, including the old Bran road, which passes through the Zărnești area, this determined a great economic development of the area. [10], [13]. Being located in the central part of the Republic of Moldova, in the Central Development Region, the municipality of Strășeni is crossed by a well-developed road network, which has contributed to the economic growth of the entire Region of Central Development of the Republic of Moldova. [11], [14].

The Geology and Relief of the city of Zărnești

From a geological point of view, the area of Zărnești belongs to the Mesozoic unit related to the Piatra Craiului Massif, as well as to the Bran-Rucăr Corridor. The formations encountered here are composed of crystalline rock deposits with phyllites, sericite-colored schists, ocular gneisses, quartzites, amphibolites, which are partially or totally covered by a layer of sedimentary limestone, clay shale, sandstones, marls and conglomerates. Land degradation as a result of the intensification of current modeling processes has a relatively increased weight in recent years. There were road accidents/collapses - on the road leading to the Zărnești Cliffs, landslides, massive stone falls, degradation of the roads that connect Zărnești to the towns of Măgura, Moieciu, Poiana Mărului and the Brăne villages, all of which resulted in torrents, the strings. [10], [13]. Such phenomena, however, are found in the cryonival floor, where the disaggregation, drift and solifluction, mostly affect both meadows and alpine pastures.

The specifics of the relief.

From a morphological point of view, the relief located in the perimeter of the city of Zărnești can be divided into 3 categories: major forms, medium forms and small forms. Fig. 2.

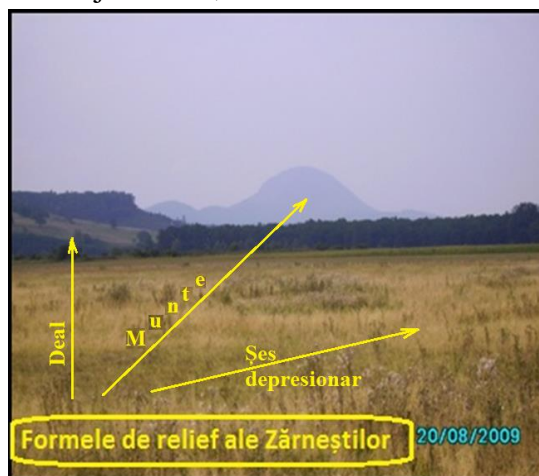


Fig. 2. The relief forms of Zărnești.
(Source - Personal Archive)

Thus, the mountains (Piatra Craiului Massif) occupy 62% of the surface, the hills - 18%, and the lowlands/plains - 20%. [5], [10],[14].

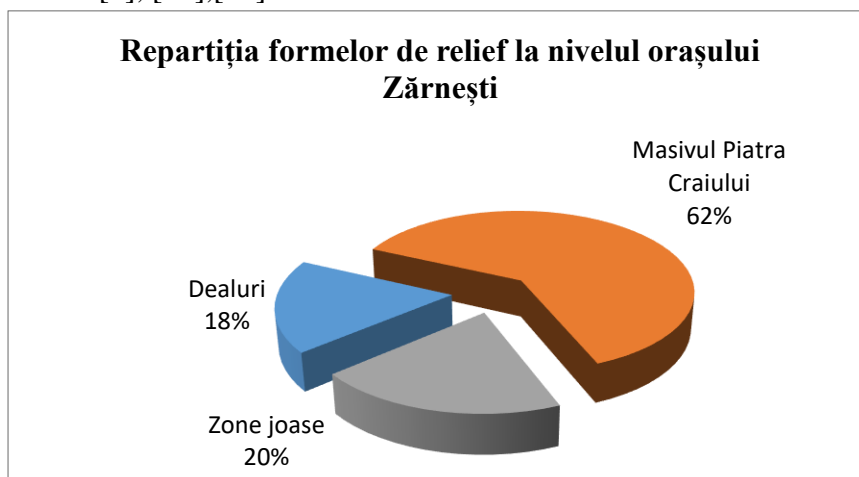


Fig. 3. The distribution of landforms at the level of the city of Zărnești
(Source: processed according to the data of the Zărnești City Hall)

The soils in the perimeter of the city of Zărnești

The territory of Zărnești benefits from a varied range of soils. They are conditioned by the evolution of their fixation, under the influence of natural pedogenetic factors. From a genetic point of view, the soils in the administrative territory of the city can be grouped as follows: [15]

- Brown and yellowish brown forest soils - (also includes podzolic soils);
- Clay podzolic soils - illuvial pseudogley;
- Mountain brown soils - (podzolic soils);
- Rendzine and pseudorendzine;
- Hydromorphic soils;
- Alluvial soils;
- Alluvial - pluvial soils.

In the plateau/plain area, the soils are fertile and are intended for agricultural crops.

In Zărnești, soil resources include: agricultural land, orchards, pastures, hayfields, forest fund (forests) and running water energy, with 2 small hydropower plants. Among the underground resources we mention: underground springs, building rocks (sandstone), limestone, sands, gravels and clay.

Due to the fact that a good part of the Pietra Craiului Massif, with limestone mountains, is located on the administrative territory of the city of Zărnești, the city has large limestone resources, compared to the city of Strășeni, which has no limestone reserves. Years ago, there were two factories in Zărnești that turned limestone into lime, today, the factories have been abolished. [16],[17].

The territory of the city of Zărnești is drained by many flowing waters that make up a rich hydrographic network of particular importance in shaping and fragmenting the relief. Due to the predominantly high relief, here, the precipitation regime has a torrential character, and in soil erosion processes, the hydrographic network can play a role in destroying the organic horizon, which is the essential part of the forest ecosystem. [15], [16]. Changing the zonal climate in the perimeter of the city, as well as the creation of valley and slope topoclimates, with implications in the distribution of forest vegetation, is due to the presence in the area of a rich hydrographic network that implicitly "leads" to the fragmentation of the relief.

Along with other cities located around it, the municipality of Strășeni is included among the human settlements located in the Codrilur Plateau. [6],[12],[14].

The specifics of the relief

Here, the relief is strongly fragmented by a dense network of valleys, torrents and ravines. Compared to the relief of the city of Zărnești, which includes mountains, hills and smooth areas of plains/plains, the localities of the Codrilur Plateau have in their composition some portions that include terraces, meadows, or other surfaces where the degree of fragmentation is less.[5] In the case of the city of Strășeni, the morphological and morphometric structure of the inner city is determined by the position occupied within the limits of the relief unit, the density of the hydrographic network and the intensity of the modeling processes. Thus, in the area that also includes the Codrilur Plateau, there are human settlements located on two altitudinal steps (one lower below 100 m altit) and one slightly higher, exceeding 100 m, where the municipality of Strășeni is also located, at 136 m altit. [2], [9]. On the territory of the Republic of Moldova, respectively in the central part where the city of Strășeni is located, mineral resources are generally reduced in terms of their variety. Building rocks hold the first place in terms of quantity, they are used in the building materials industry, chemical industry, glass and cement industry, etc. (sands, gravels, clays). [11]. Compared to the city of Zărnești, in Strășeni there are more reserves of clay, which is still processed today in the factories of the city, from clay obtaining bricks and tiles. The soils in this area have high fertility, just like most soils in the republic, being much more fertile than the soils in the Zărnești area.

From an economic point of view, both cities described above are mostly facing the same problems.[6], [8], More than two years ago, the global economy started to affect both the developed states of the world, but especially the developing states. The long road of the transition determined the worsening of the economic situation, more recently also in the ex-socialist states, which in their transition to the market economy, faced similar economic transitions, only that they took place in a much longer time frame shorter. The consequences of the economic transformations were similar to developed countries, and the economic problems continue to worsen at an alarming rate. [7]. Among the most acute economic problems, there are: the economic degradation of the last over 30 years, the loss of sales markets, the weak adaptation of the economic structure to the market requirements, structures not adapted to the existing potential. [9].

In Romania, the accession to the European Union in 2007, involved the closure of several enterprises, which, in the view of the European Union, at the time, they were no longer performing. In this sense, many citizens entered the ranks of unemployment, or were forced to go abroad in search of a job, the economic and social situation in the country deteriorating. The same thing happened, in parallel, in the Republic of Moldova. From an economic and social point of view, here, several reminiscences from the Soviet period, from before the year 1989. [6], [8], [12]. As a whole, both in Romania and in the Republic of Moldova, at the present time, the economic structure is poorly adapted to the competitive market situation at the regional and international level.

In general, the economic functions of a territory are based on the following branches of the country's economy:

- Industry,
- Agriculture,
- Forest economy,
- Trade, Tourism, but, also take into account
- Population as well as
- Technical equipment of the territory.

The branches of the economy of the two countries (agriculture, industry, services) no longer have the necessary labor force, in both states, as an aging population has been reported, or one that needs to reconfigure, according to the current requirements of the labor market. Currently, in both countries, there is an increase in the role of population migration, which further worsens the situation on the labor market. All these socio-demographic processes, which directly affect the national security of the two states, highlight the need to be concerned with economic security, which affects all spheres of activity. [5]. The analysis of the economic situation can be carried out for different levels of territorial organization, starting from the idea that each territorial entity, from the state level to the level of primary administrative-territorial units, is marked by a common conjunctural situation of a political, socio-economic order, but also by particular situations. In this context, the author proposed a comparative analysis of the economic situation of two localities: the city of Zărnești in Romania and the Municipality of Strășeni in the Republic of Moldova, as well as how they are affected by the current economic situation. In this sense, the purpose of this study is to analyze the dynamics of economic activity in the pre- and post-Covid-19 period, and the basic objectives include:

- Comparative analysis of the economic dynamics in the cities of Zărnești and Strășeni and the determining factors of this evolution;
- Evaluation of structural changes in the economy of the two cities under the impact of the temporal and spatial situation;
- Formulating some conclusions regarding the economic situation for these cities, in order to overcome this existing situation. At the present time, the problems that attest to economic insecurity, imperatively require, from the authorities of different ranks, the development of strategies and programs, these being for the purpose of not admitting the deepening of economic problems. [4].

MATERIAL AND METHOD

In carrying out this approach, the author proposed for analysis the comparative economic situation and the extent to which it influences the socio-economic security of the cities of Zărnești and Strășeni, relatively similar localities in terms of size and positioning within the system of human settlements, but also in terms of human potential. To carry out this study, several research methods,

specific to geographic and economic sciences, were used: the comparative method for the differentiated study of the geoeconomic components taken into account; the statistical method by capitalizing on the economic data obtained from the National Bureau of Statistics in the Republic of Moldova, the National Institute of Statistics from Romania-through the Braşov County Directorate of Statistics,[18], the local town halls; the cartographic method, used for the development of some thematic maps; the method of analysis and synthesis used for the systematization and interpretation of data that attests to their demographic situation, etc.; qualitative survey its brief description.

To carry out this study, the author started from the following premises:

□ Currently, both cities face similar problems that attest to socio-economic insecurity, based on political, economic and social premises; [4].

□ Through the favorable position they have in relation to a larger urban center (Zărneşti near Braşov, respectively Străşeni, near Chisinau), the big cities have left their mark and influenced the small ones, in the sense of exchange human with these; [12].

□ Due to the long-term transition that the Republic of Moldova is going through, the municipality of Străşeni has socio-demographic and socio-economic structures with a higher degree of instability compared to the city of Zărneşti in Romania; [4].

□ Thanks to the fact that in Romania, the process of territorial decentralization is carried out at a faster pace, as a consequence of the implementation of the regional development policy, the city of Zărneşti is going through a period of demographic and socio-economic stabilization more pronounced than the city of Străşeni. Thus, the experience of the city of Zărneşti can be a model of good practice for the municipality of Străşeni. [11].

RESULTS AND DISCUSSIONS

The two cities, Zărneşti (Romania) and Străşeni (Republic of Moldova), present a series of common features, which aim at demographic dimensions, the trajectory traveled in development socio-economic, the positioning of these cities in relation to an influential and national human center, as well as of urban competitiveness, at the regional level. [4].

Problems with and economic character

□ insufficient capitalization of the economic potential;
□ poor adaptability to internal and external market requirements;
□ the presence of weakly competitive economic entities;
□ labor market instability;
□ the lack of well-paid jobs, the large number of unemployed people of various types, to which are added the unfortunate consequences produced by the global pandemic of COVID-19. [8].

Below are presented a series of companies from the Zărneşti area, in the field of industry, services, etc.

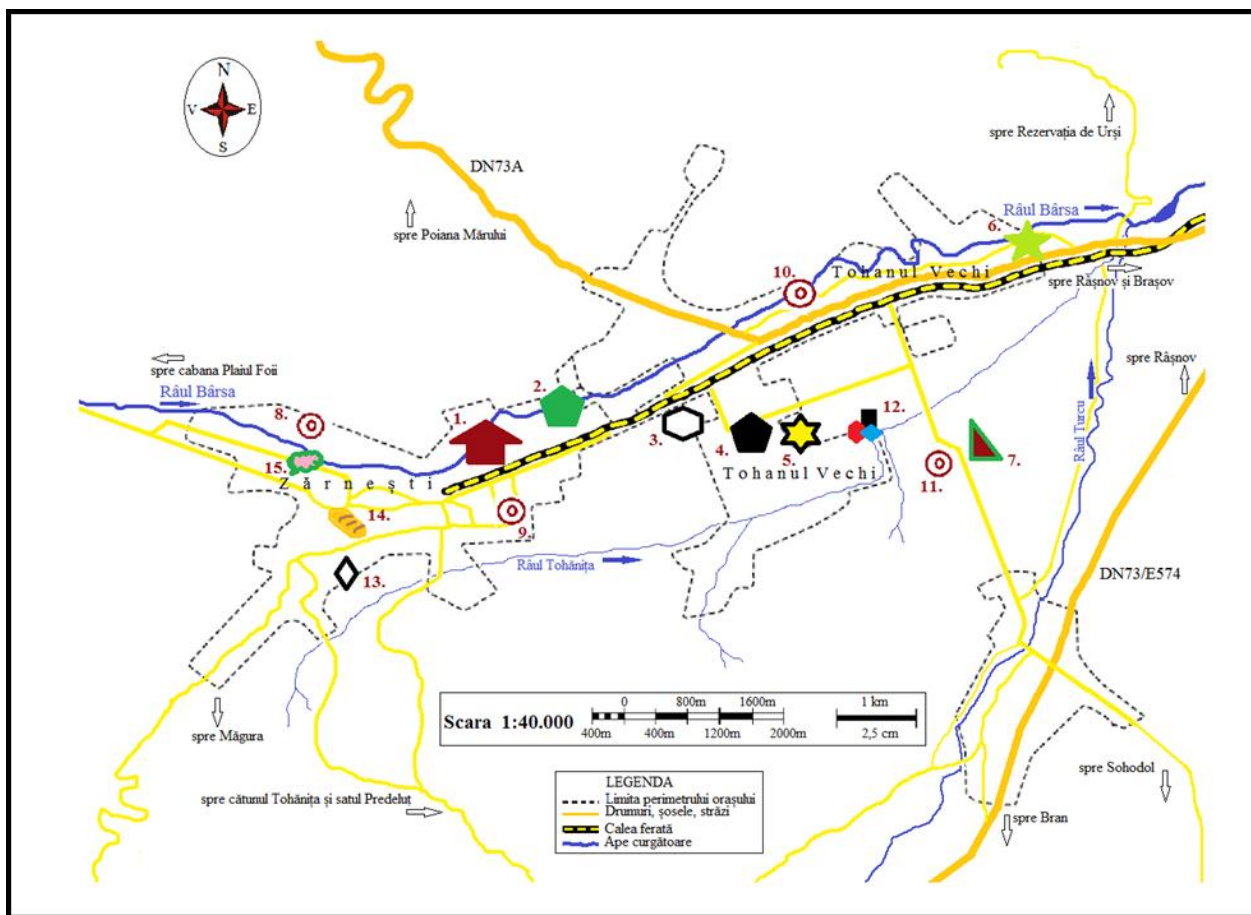


Fig. 4. Industry of Zărnești. Processed map.

Map outline source: <https://www.google.ro/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=harta%20zarnești%20jud%20brasov>

LEGEND no. 2

1. Gara C.F.R. Zărnești	4. SC Tohan SA construcții mașini	7. SC Vectra SRL Servicii, Diverse	10. SC Yvor Prod - ind. lemn	13. Ind. Ușoară. Diverse activități
2. DS Smith Paper Zărnești celuloză și hârtie	5. Parcul Industrial Zărnești	8. SC Ymilrom Prod- ind. Lemn	11. SC Dip&Gip - ind. Lemn	14. SC Buganis Prod. Panificație.
3. SC Romoil SA-Depozit PECO	15. Ind. Alimentară. Diverse activități.	9. SC Alabastru SRL - ind. lemn	12. SC Morani Impex SRL- mat. construcții.	

According to the data received from Zărnești City Hall, Registry Service, on January 1, 2022, there were 921 active economic agents on the territory of the town, represented by a number of approx. 18 (larger) commercial agents, listed below in descending order (somewhat randomly), as income: (S.C. Tohan S.A., S.C. DS Smith Paper Zărnești SRL, SC Lukoil SA, S.C. Vectra S.R.L., S.C. Dip&Gip S.R.L., S.C. Morani Impex S.R.L., S.C. BUGANIS PROD S.R.L., S.C. COSTERA COLȚEI S.R.L., S.C. ALIMPEX S.R.L., S.C. RIAN CONSULT S.R.L., S.C. TINION SERV S.R.L., S.C. RALDACA S.R.L., S.C. Periada COM S.R.L., S.C. STARMOD S.R.L., S.C. Prod S.R.L., S.C. Ymilrom S.R.L., Păstrăvăria Zărnești, Sergiana Alimentary Complex).

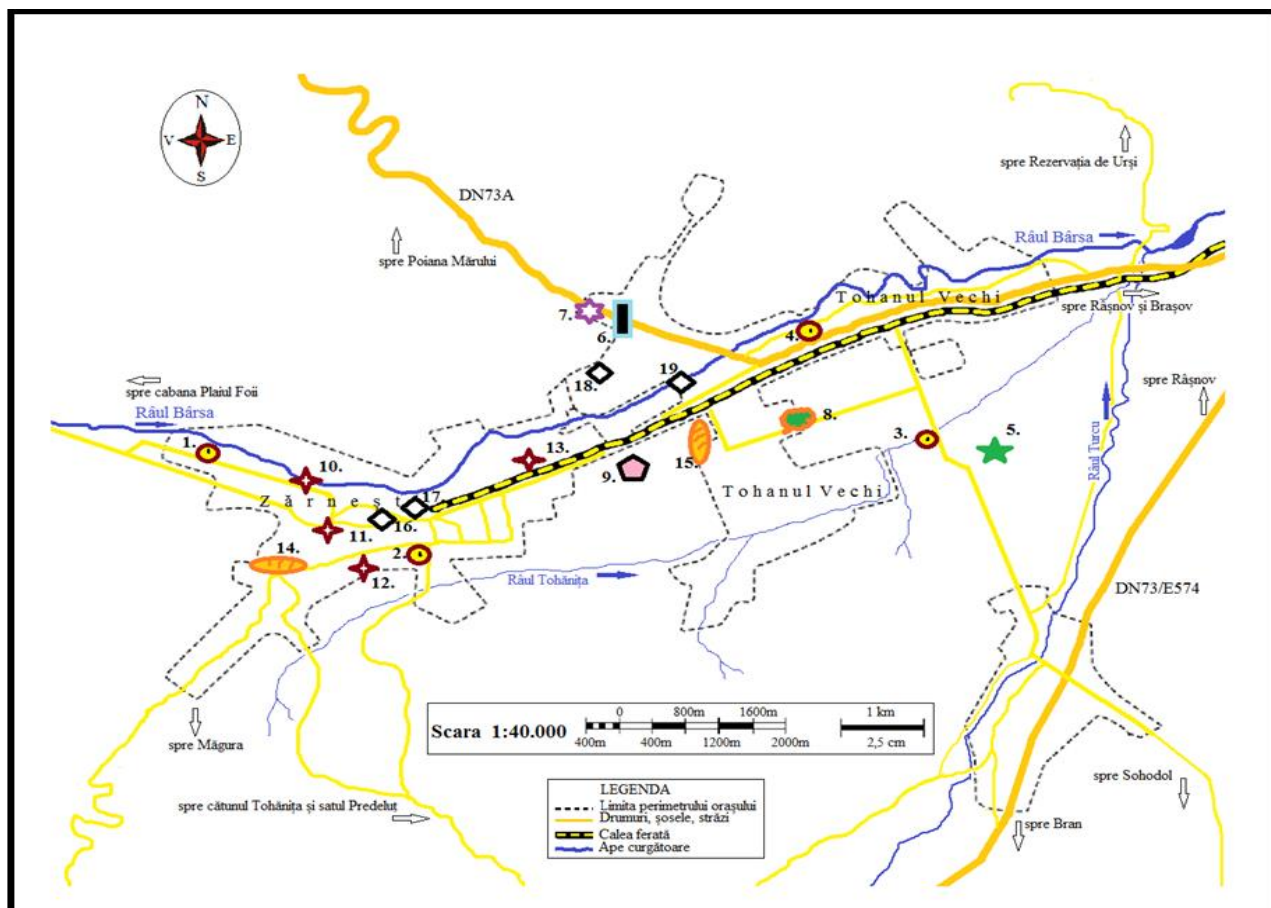


Fig. 5. Commercial companies and companies located in the perimeter of the city of Zărnești. Processed data.

Contour map source: <https://www.google.ro/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=harta%20zarnesti%20jud%20brasov>

LEGEND No.1.	4.SC Yvor Prod SRL-Ind. lemn	8.SC Studio textile- Confecții/Tricotaje	12. Complexul alimentar Sergiana	16.SC Raldaca- Produce alimentare
1.SC Ymilrom Prod-Ind. lemn	5.SC Vectra- Transport/Servicii	9.SC Periada Com- Restaurant	13.SC Oaneș ETCO-Comerț cu amănunt	17.SC Star Mond- Produce alimente
2.SC Alabastru SRL-Ind. lemn	6.SC Morani Impex- Apă/Canal	10.SC Peștera Colțea-Comerț amănunt	14.SC Buganis Prod-Panificație	18.SC Star Mond- Produce alimente
3.SC Dip&Gip SRL-Ind. lemn	7.SC Adciel SRL- Service auto	11.SC Păstrăvăria Zărnești	15.SC Tinion Serv-Depozit Brutărie	19.SC Alimpex- Produce alimentare

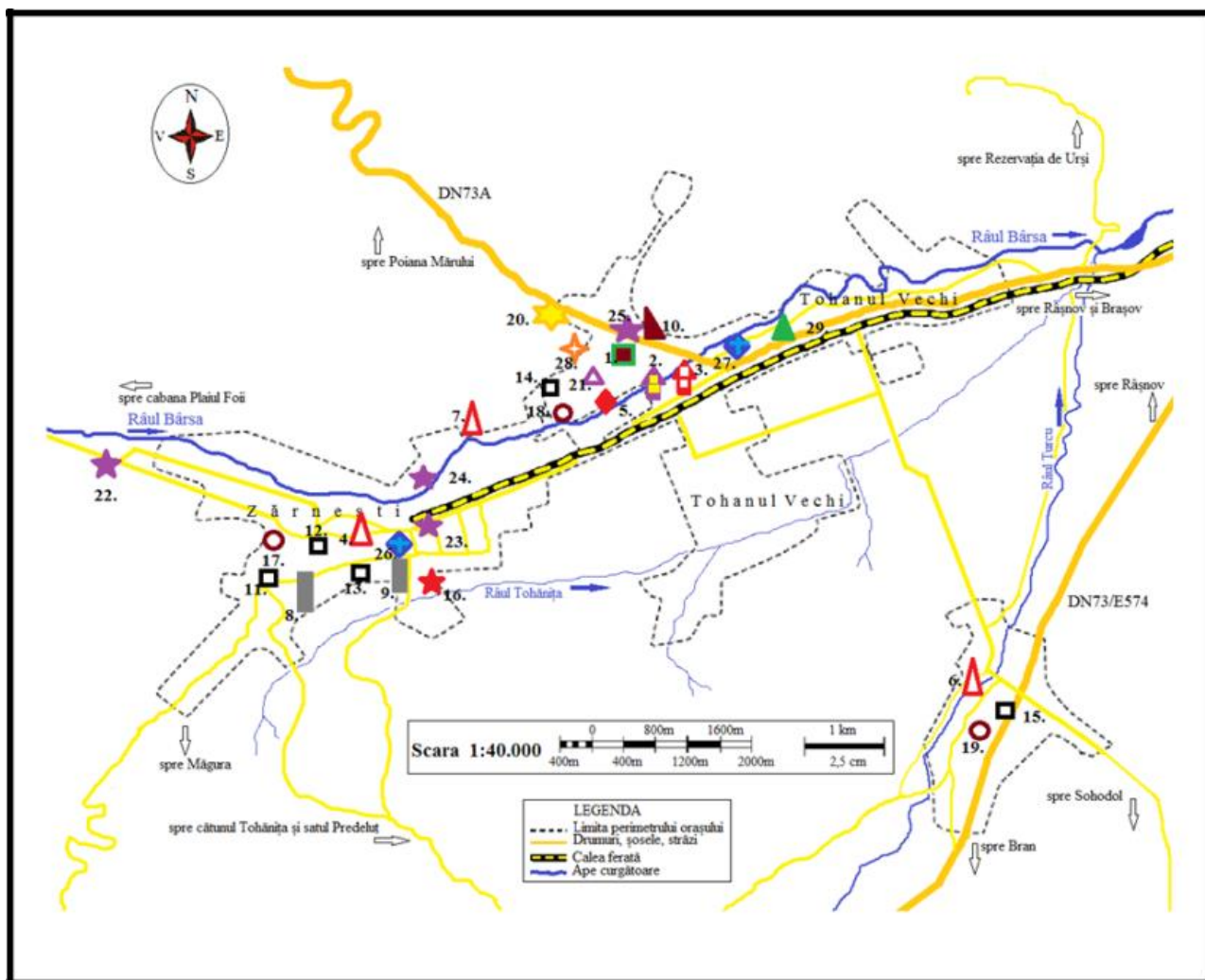


Fig.6. Units providing services for the population of Zărnești. Processed map.

Contour map source:

<https://www.google.ro/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=harta%20zarnești%20jud%20brasov>

LEGEND No.	5.Le Fru	10.Hotel	15.Barul din Tohanul	20.PECQ	25.Spălătoria
2.	Marin-Market	Transilvania	Nou	Rompetrol-Partner	Auto Adciel
1.Piața de Legume-Fructe	6.Complex Comercial Tohanul Nou	11.Internet Cafe	16.SC D.Felice Sty-Sal.înfrumusețare	21.SC Tur Taxi SRL	26.RCS-RDS, DIGI, Net
2.Lidl Discount SRL	7.Complex Alim. Tohan Blocuri	12.Barul „Modern,,	17.Frizerie - str. Ion Meșianu 55	22.Spălătorie Auto	27.RCS-RDS ZarneștiTV.
3.Lidl 1 Recenzie	8.Pizzeria Caraiman 1, str. Florilor	13.Barul „Disco Olivia,,	18.Frizerie - Tohan Blocuri	23.Spălătorie Auto str. I.Meșianu 117	28.Arsis Trading-Vodafone
4.Complex Alimentar Sergiana ProdimeX	9.Pizzeria Caraiman 2, str. Zorilor	14.Barul „, Blocuri Tohan	19.Frizerie/Coafură - Tohanul Nou	24.Spălătorie Auto str. 13 Decembrie	29.Germanos-Dealer GSM

Table 1. The number of registered (existing) enterprises/economic agents in the administrative territory of the city of Zărnești, in the period 2010-2022.01.01

Numărul întreprinderilor / agenților economici înregistrați (existenți)	Anul 2010	Anul 2018, înainte de perioada COVID-19	Anul 2022.01.01, după perioada COVID-19
	625	857	921

Source: [15]

Comparing the figures of 2010 with those existing in 2018, (before the COVID-19 pandemic), we notice an increase in the number of existing economic agents by 232 units (in 9 years, before the pandemic, the number of economic agents, increasing on average by 25, 77 units/year). During the pandemic period and after it (2019-2022.01.01), there is an increase in the number of existing economic agents by only 64 units (thus, in 3 years, the number of existing economic agents, they registered an increase on average by only 21 .33 units/year during the pandemic).

Table 2. The number of registered (existing) enterprises/economic agents, in the administrative territory of the city of Zărnești, as well as the bankrupt ones

Years	Number of registered economic agents (existing)	Number of economic agents withdrawn from the register/(bankruptcy)
2010	625	25
2011	650	26
2012	684	29
2013	711	40
2014	745	47
2015	800	44
2016	829	46
2017	845	46
2018	857	53
2019	877	45
2020	895	52
2021	921	53

Source: [15].

If we compare the year 2010 with the year 2021, we will notice that the number of registered/existing economic agents has increased from 625 to 921 (by almost 300 units). In the same period, it can be seen that the percentage of bankrupt companies, reported for each individual year, remained somewhat constant, both before the COVID 19 pandemic and after this pandemic.

Table 3. List of newly registered economic agents in the city of Strășeni, in the period 1992-2015

Reference year	Number of registered companies per year	Number of liquidated companies per year
2015	30	0
2014	41	1
2013	47	4
2012	40	4
2011	58	10
2010	35	12
2009	38	8
2008	54	6
2007	62	11
2006	56	13
2005	46	4
2004	36	8
2003	35	3
2002	41	7
2001	21	7
2000	32	8
1999	42	15
1998	77	20
1997	85	18
1996	123	23
1995	132	25
1994	74	14
1993	81	14
1992	96	24
-	Total 1382 Companies	Of which 322 Liquidated

Source: [19]

If during the years 1992-1993, the number of liquidated companies represented a percentage of 20-25%, of the number of companies existing in those years, we notice that, after 2012, the percentage of bankrupt companies began to decrease, even reducing to the value zero in 2015. Below, several companies registered in the city of Strășeni are shown.

Table 4. Important companies, registered in the municipality of Strășeni

No.crt.	Companies from Strășeni
1	Cooperative Public Food Cooperative Enterprise URECOOP Strășeni
2	State Enterprise Silvio-Cinegetic Strășeni
3	Municipal Enterprise Directorate of Production for Communal Household and Housing Or. STRASENI
4	Strășeni District Dental Center Municipal Enterprise
5	Association of Foreign Exchange Houses PARALUTA
6	SRL Lukoil Straseni
7	Cooperative Purchase, Production and Trade Enterprise Coopcolprod of URECOOP from Strășeni
8	AGROSTOC entrepreneur cooperative
9	SEBOSERV agricultural service entrepreneur cooperative
10	The PANIFCOOP bakery cooperative of URECOOP from Strășeni
11	Consumer cooperative from Strășeni
12	The refrigeration cooperative enterprise "Frigocoop" from Strășeni a Moldcoop
13	"Pinguinul" Energy and Electrification Technical Production Cooperative
14	Union of Consumer Cooperatives URECOOP Straseni
15	Organization of car filling station tenants No. 131
16	SA Construction materials factory from Strășeni
17	SA Agrotehnica
18	SA Bicon
19	SA Tipografia from Strășeni
20	SA Agromontaj-Strășeni

Source: [14].

Currently, more than 2780 economic agents are active in the municipality of Strășeni. Among them, a number of 1590 are peasant households, and 305 are enterprises with legal personality.

Conclusions and recommendations:

Strategic city development plans do not fully reflect the requirements of sustainable development;

□ Both cities (Zărnești and Strășeni are part of the ranks of small and medium-sized cities) [2],[3], have a series of common but also distinct features in the geo-economic evolution in the current transition period that both Romanian states are going through;

□ From the above calculations, it appears that the economic situation of the city of Zărnești did not suffer much during the COVID-19 Pandemic or after that period, because the state policy in Romania granted companies certain financial facilities, through Programs European-P.N.R.R. (National Recovery and Resilience Plan), or other funds, from other Programs from the European Union, or money from the Romanian state.

□ Following the discussions held with the representatives of the Strășeni City Hall (who at the moment, for certain objective reasons, could not provide me with concrete data in writing), it appears that

there were a number of companies registered in the database of the City Hall, which suffered both during the pandemic and afterwards, because the state policy in the Republic of Moldova did not support the companies, due to lack of funds, leaving them at the will of fate, to manage on their own, each as they saw fit.

□ the transition to the market economy marked the economic evolution of both countries, in the sense of slow economic growth, or even stagnation;

□ several economic indicators in both countries have an involution, some even very pronounced, which will determine the economic insecurity of the cities studied;

□ serious problem is the lack of market, low productivity due to outdated technology, lack of labor force due to demographic aging, lack of well-paid jobs that accentuate the seriousness of the employment problem. [4].

BIBLIOGRAPHY

1. **Bejan, Iurie. (2010) - Utilizarea terenurilor în R. Moldova.** Chișinău, ASEM.
2. **Cujbă, Vadim (2015). Evoluția orașelor mici și mijlocii din Republica Moldova prim prisma geografiei economice, Teză de doctor în științe geonomice, pag. 29, ASEM, Chișinău.**
3. **Crăciun, Laurențiu (2019). Criterii de individualizare a orașelor în România și Republica Moldova, SIMPOZION ȘTIINȚIFIC INTERNAȚIONAL AL TINERILOR CERCETĂTORI, EDIȚIA A XVII-a (24 – 25 aprilie 2019), Chișinău, 2019, R. Moldova.**
4. **Hachi, Mihai; Crăciun, Laurențiu (2021), - Aspecte ale securității demografice, a Municipiului Strășeni (Republica Moldova) și a orașului Zărnești (România), ASEM Chișinău, Republica Moldova, 2020**
5. **Hachi, Mihai; Crăciun, Laurențiu (2019). Studiul comparativ al utilizării terenurilor în orașele Zărnești (România) și Strășeni (Republica Moldova), Simpozionul Internațional „ CALITATEA MEDIULUI și UTILIZAREA TERENURILOR”, Ediția a XII-a(17-19Mai 2019),Suceava, 2019, România.**
6. **Hachi, Mihai, (2005) - Modul de trai al populației Republicii Moldova: Abordare socio-geografică.** ASEM, Chișinău, 19-20p.
7. **Hachi, Mihai; Crăciun, Laurențiu (2020), Provocări și tendințe actuale în cercetarea componentelor naturale și socio-economice ale ecosistemelor urbane și rurale. – Chișinău: Universitatea de Stat „Dimitrie Cantemir”, 2020.**
8. **Hachi, M. (2020) Particularitățile geodemografice ale Regiunii de Dezvoltare Centru. În// „Provocări și tendințe actuale în cercetarea componentelor naturale și socio-economice ale ecosistemelor urbane și rurale”, Chișinău, 2020.**
9. **Hachi, Mihai; Crăciun, Laurențiu (2020), - Provocări și tendințe actuale în cercetarea componentelor naturale și socio-economice ale ecosistemelor urbane și rurale / Ministerul Educației, Culturii și Cercetării, Institutul de Ecologie și Geografie, Universitatea de Stat "Dimitrie Cantemir", Agenția de Dezvoltare Regională Nord ; comitetul științific: Maria Nedelcov [et al.]. – Chișinău : Universitatea de Stat "Dimitrie Cantemir", 2020.**
10. **Lepădatu, Ioan (1999). Vechi așezări bârsene–Orașul Zărnești.** Editura Transilvania Expres, Brașov.
11. **Matei, Constantin; Mătcu, Matei; Sainsus, Valeriu; Hachi, Mihai (2008). Rolul orașelor mici în dezvoltarea complexului agroindustrial al Republicii Moldova, Editura ASEM, 87-92p, Chișinău.**
12. **Sochircă, Elena, (2010) - Studiul geodemografic și social al Municipiului Chișinău, Teză de Doctorat, Chișinău, Republica Moldova, 2010.**
13. **Vlad, Ilie (2004). La cumpăna timpului. Zărnești,** Editura Garofița Pietrei Craiului, Zărnești.
14. *****Primăria orașului Strășeni.**
15. *****Primăria orașului Zărnești.**
16. *****Strategia de dezvoltare locală a localității Zărnești (2015-2025).**
17. **Agencia de Dezvoltare Durabilă a Județului Brașov: Strategia de dezvoltare a județului Brașov 2013-2020- 2030, disponibilă la https://addjb.ro/uploads/proiecte/SDJBV/Documente/ADDJB_Strategia.pdf**
18. **www.insse.ro (baza de date TEMPO online, România)**
19. ***** CASATA.MD. COMPANII DIN REP. MOLDOVA. Accesat 04.09.2022.**

CZU: 614:336.5(1-775)OECD

DOI: <https://doi.org/10.53486/dri2022.11>

THE ANALYSIS OF HEALTH EXPENDITURES IN OECD MEMBER COUNTRIES

ZUBCOVA ELENA¹¹

PETROIA ANDREI¹²

Abstract: *The Organisation for Economic Co-operation and Development (OECD) it is a unique forum, where the governments of the member countries work together to respond to economic and social challenges. Its purpose is to shape policies that promote a better life. The analysis of health expenditures in OECD member countries presents a comparison of a comprehensive set of key indicators regarding the health system performance across OECD member countries and key emerging economies. The analysis is based on the latest comparable data, that come from official national statistics and other sources, illustrating differences across countries and over time in terms of access to and quality of care, and health resources. A special focus is given to the health impact and major trends. This international comparison of the expenses of various health systems offers the possibility of sharing the best practices implemented in the respective countries.*

Key words: *health, expenditures, system, OECD countries, indicators*

JEL CLASSIFICATION: I10, I11, I13, I15, I18.

INTRODUCTION

The COVID-19 pandemic has shifted the dynamics of public health. The global level of health spending continues to keep pace with the new challenges presented by the ongoing pandemic, which continues to dominate the attention and resources of health systems. The analysis of health expenditures compares how much countries spend on health and what funds are spent on [3, 4].

1. Health spending [1, 5]

Health spending measures the final consumption of health care goods and services (i.e. current health expenditure) including personal health care (curative care, rehabilitative care, long-term care, ancillary services and medical goods) and collective services (prevention and public health services as well as health administration), but excluding spending on investments.

After jumping substantially in 2020, OECD spending on health as a share of GDP is not expected to have increased further in 2021, despite health spending growth accelerating. This is as a result of the strong economic recovery in many OECD countries in 2021.

As a result of the substantial spending growth and the widespread economic downturn, health spending as a share of GDP jumped to 9.7% across OECD countries in 2020, up from 8.8% in 2019.

¹¹ Ph.D Student, email: ezubcova@yahoo.com

ORCID: 0000-0003-4645-6233

Academy of Economic Studies of Moldova, 61, Banulescu Bodoni Street, 2005, Chisinau, Republic of Moldova, web page: www.ase.md

¹² Ph.D., Associate Professor, email: petroia5@hotmail.com

ORCID: 0000-0003-1674-0700

Academy of Economic Studies of Moldova, 61, Banulescu Bodoni Street, 2005, Chisinau, Republic of Moldova, web page: www.ase.md

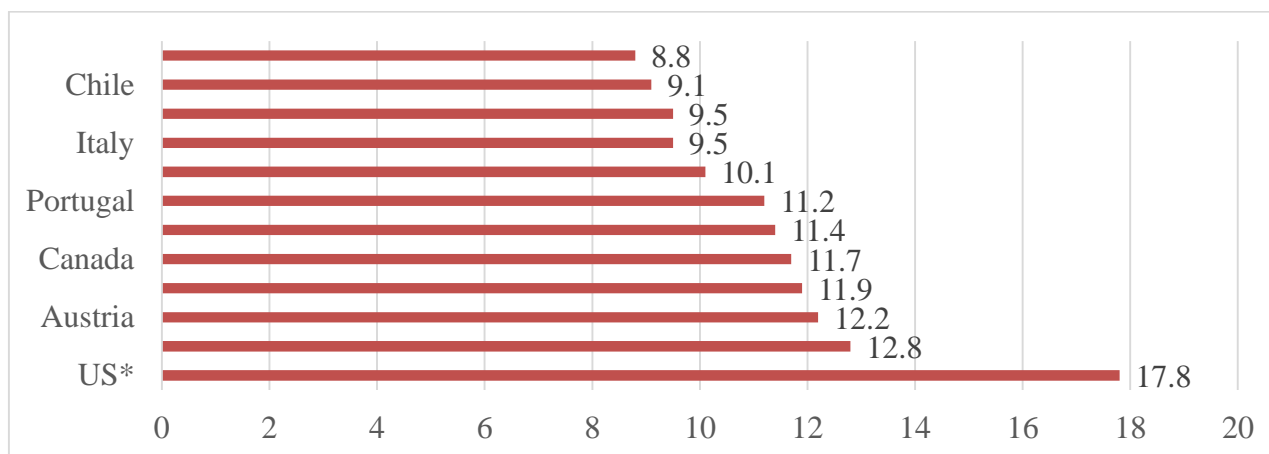


Figure 1. Health spending around the world, as % of GDP, 2021, selected OECD countries¹³

Source: OECD Health Statistics 2022

In many countries, the COVID-19 pandemic revealed a lack of resilience of health systems and additional financing is required to provide countries with the agility to respond to future crises. Generally, there is a need to protect underlying population health, fortify the foundations of health systems, and bolster health workers on the frontline. However, this raises concerns about the fiscal sustainability of health systems in the long-run.

1.1. Health expenditure in relation to GDP [2, 3]

The amount spent on health care compared to the size of the overall economy varies over time owing to differences in both the growth of health spending and overall economic growth. During the 1990s and early 2000s, OECD countries generally saw health spending outpace the rest of the economy, leading to an almost continual rise in the ratio of health expenditure to gross domestic product (GDP). After the volatility of the 2008 economic crisis, the share remained relatively stable, as growth in health spending broadly matched overall economic performance across OECD countries. However, with the COVID-19 crisis severely restricting economic activity, and health spending tending to increase, the ratio of health expenditure to GDP is set to experience significant adjustment.

In 2020, prior to the COVID-19 pandemic, OECD countries spent, on average, around 9.7% of their GDP on health care – a figure more or less unchanged since 2013. The United States spent by far the most on health care, equivalent to 12.8% of its GDP – well above Canada, the next highest spending country, at 12.9% (Figure 2). After the United States and Canada, a group of ten high-income countries, including France, Canada, Japan and the United Kingdom, all spent more than 10% of their GDP on health care. The next block of countries spending between 7% and 9% of their GDP on health care includes many of the central and eastern European OECD countries, as well as the newer members from the Latin America region – Colombia and Costa Rica. Finally, Mexico and Turkey spent less than 7% of GDP on health, alongside some of the partner countries, such as the People’s Republic of China (China) and India.

¹³ Note: *these data are OECD estimates for 17 countries. All other data are preliminary.

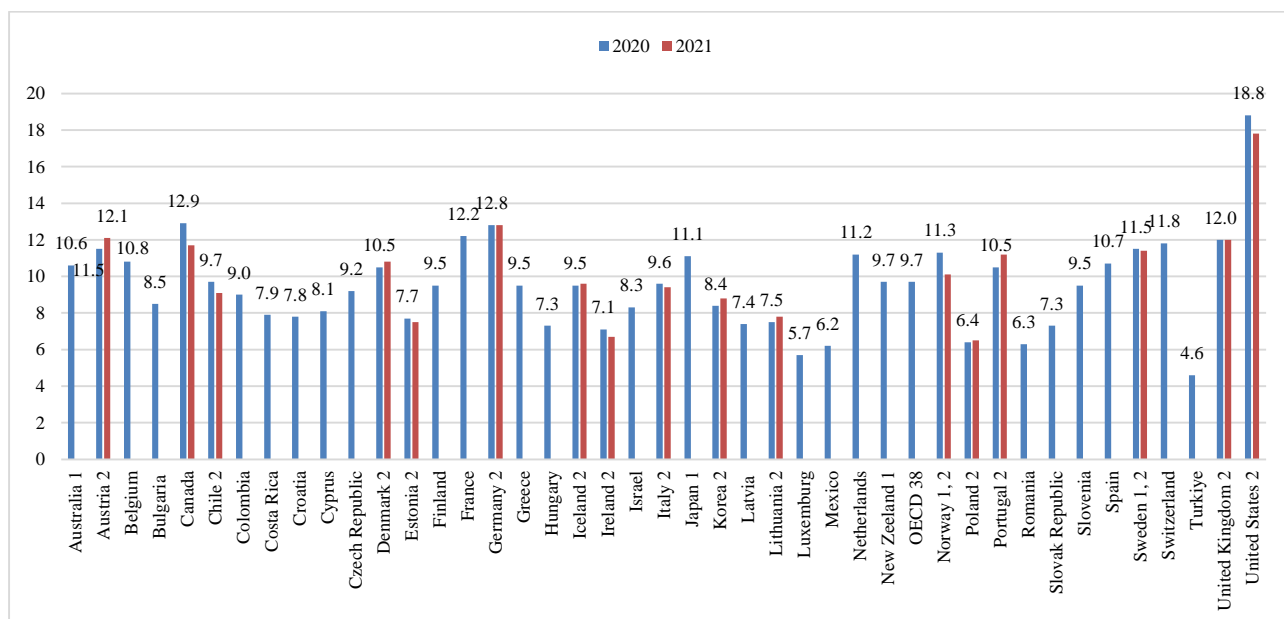


Figure 2. Health expenditure as a share of GDP, 2020 (or nearest year) and 2021¹⁴

Source: OECD Health Statistics 2022

Preliminary estimates for 2021 for a number of 17 OECD countries not all point to a significant increase in the ratio of health spending to GDP. Only 8 countries estimated an average increasing of 3,3%, the rest one estimated an average decreasing of 7,2%. This reflects both the extra health spending and increases/reductions in GDP caused by economic activity. Based on the initial data, the average share of GDP allocated to health is estimated to have jumped from 8.8% in 2019 to 9.7% in 2020. Those countries most severely affected by the pandemic reported unprecedented increases in the share of GDP allocated to health. The Poland estimated a decrease from 6,5% in 2020 to 5,6% in 2021, while Austria anticipated its share of spending on health rising from 11,5% to more than 12,0%.

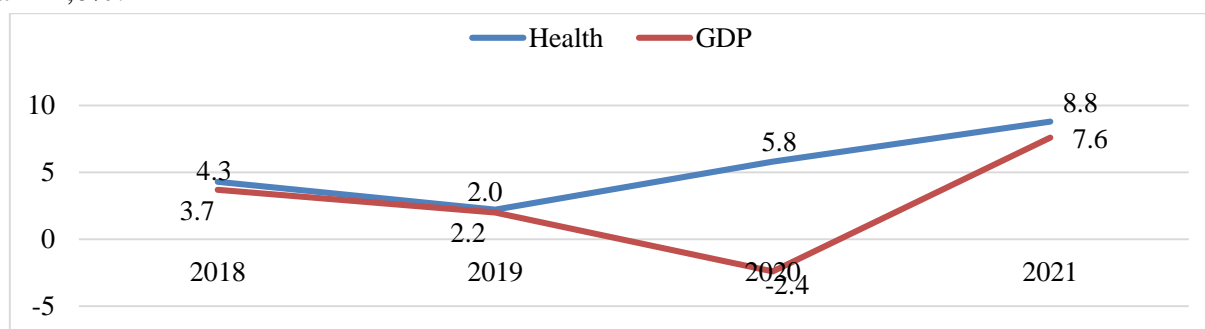


Figure 3. Annual real growth in per capita health expenditure and GDP, OECD, 2017-21¹⁵

Source: OECD Health Statistics 2022

Analysis of the trends in per capita health spending and GDP over the last 15 years clearly show the two shocks: the economic crisis in 2008 and the recent impact of COVID-19 in 2020 (Figure 3). While OECD economies contracted sharply in 2008 and 2009, health spending growth was maintained for a while before also declining – growth hovered just above zero between 2010 and 2012 – as a range of policy measures to rein in public spending on health kicked in. For the rest of the 2010s, the average rate of health spending growth in OECD countries tended to track growth in

¹⁴ 1. OECD estimates for 2020. 2. OECD estimates for 2021.

¹⁵ Note: Average of 17 OECD countries.

the overall economy closely. The gap widened in 2019, with stronger growth in health spending. With widespread lockdowns and other public health measures severely restricting economic output and consumer spending, many OECD economies went into freefall in 2020. This is likely to be the fastest growth in OECD health spending in the last 15 years. Per capita GDP rose by 3,0% on average, with Lithuania estimated increase of GDP by 12,9% in 2021 and Portugal by 12,3%, according to preliminary data for a number of OECD countries.

In 2020, average per capita health spending in OECD countries (when adjusted for differences in purchasing power) was more than USD 4 000, while in the United States it reached a level more than USD 11 000 for every US citizen. Switzerland, the next highest spender among OECD countries, had health expenditure of around two-thirds of this level (Figure 4). In addition to Switzerland, only a handful of high-income OECD countries, including Germany, Norway and Netherlands, spent more than half of the US spending on health, while others, such as Finland and Iceland, were around the OECD average. Lowest per capita spenders on health among OECD member countries were Colombia, Turkey and Mexico, with health expenditure of around a quarter of the OECD average. Latest available estimates show that per capita spending in Chile and Poland was in 2021 just around 2000 US dollars/capita.

1.2. Health expenditure per capita [2]

The level of per capita health spending, which covers both individual and population health care needs, and how this changes over time, depends on a wide range of demographic, social and economic factors, as well as the financing and organisational arrangements of the health system.

Figure 4. shows the split of health spending based on the type of health care coverage – organised either through government health schemes or compulsory insurance (public or private), or through a voluntary arrangement such as private voluntary health insurance or direct payments by households. Across OECD countries, more than 67% of all health spending is financed through government or compulsory insurance schemes. In the United States, since the introduction of the Affordable Care Act in 2014, this share stands at 77%, reflecting the existence of an individual mandate to purchase health insurance. Federal and state programmes such as Medicaid and Medicare continue to play an important role in purchasing health care.

Preliminary estimates for 2021 show that the lowest per capita spender on health from government or compulsory insurance schemes, among OECD member countries, was Chile, a little over 1500 US dollars/capita. The lowest per capita spending from private voluntary health insurance was registered by Estonia, around 600 US dollars/capita. At the same time, the lowest out-of-pocket spending (direct payments by households) was recorded by Poland 502.2 US dollars/capita.

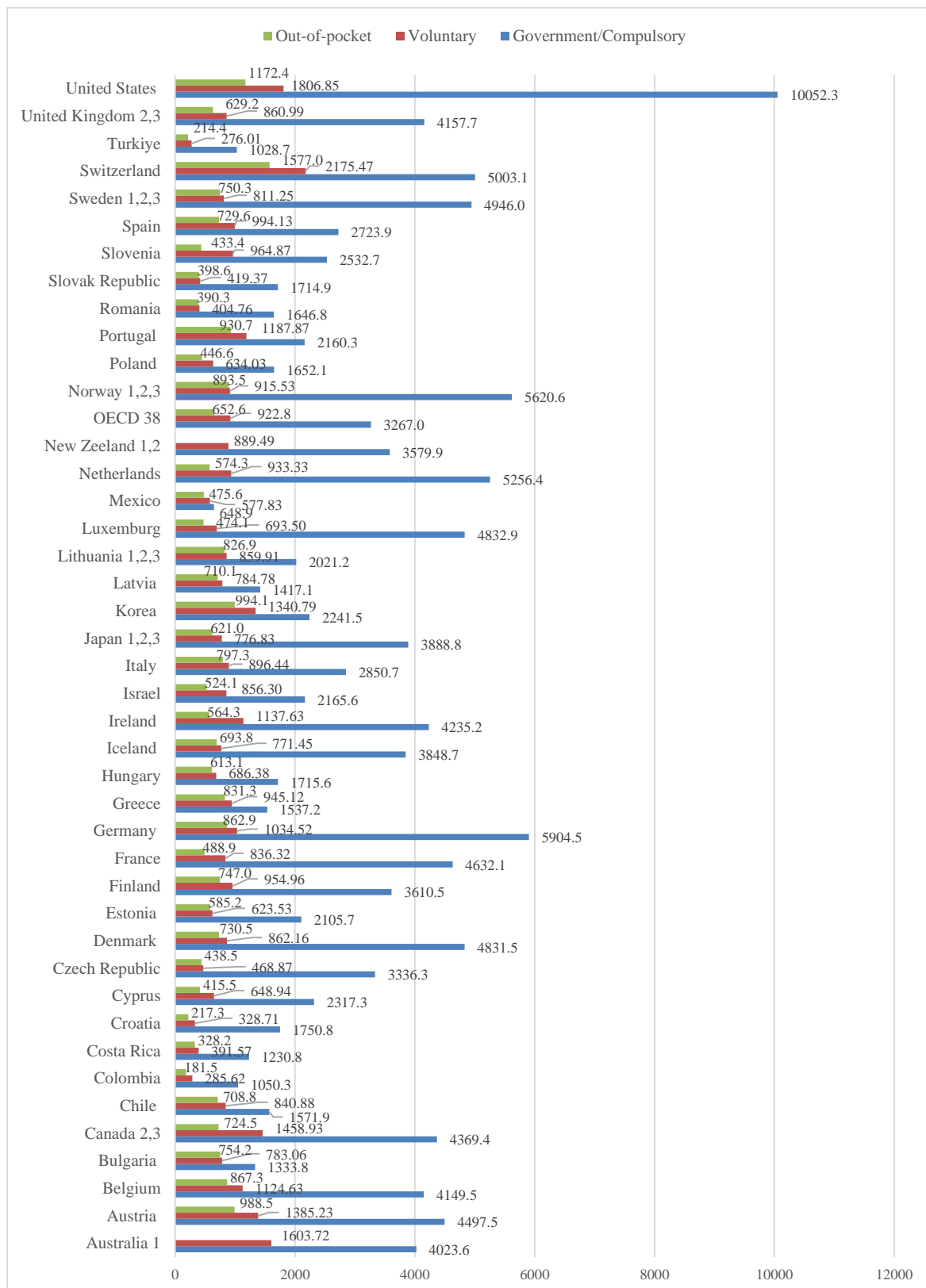


Figure 4. Health expenditure per capita, 2020 (or nearest year)¹⁶

Source: OECD Health Statistics 2022

¹⁶ 1. Government/compulsory estimates 2. Voluntary estimates. 3. Out-of-pocket estimates.

Between 2017 and 2020, average per capita spending on health care grew by an average of 12% across OECD countries (Figure 5). This compares with the low growth rates experienced in many countries in the years immediately following the global financial and economic crisis. In the 2017-19 period, average annual growth of less than 1% was still seen in Switzerland, but in 2018-20 the average annual growth of less than 1% was still seen in Norway. With the onset of the COVID-19 pandemic in 2020, preliminary estimates for a subset of OECD countries (17 countries) point to a sharp increase in overall health spending of around 7.7%, on average in 2021. This increase would represent the highest growth in average per capita health spending from one year to another.

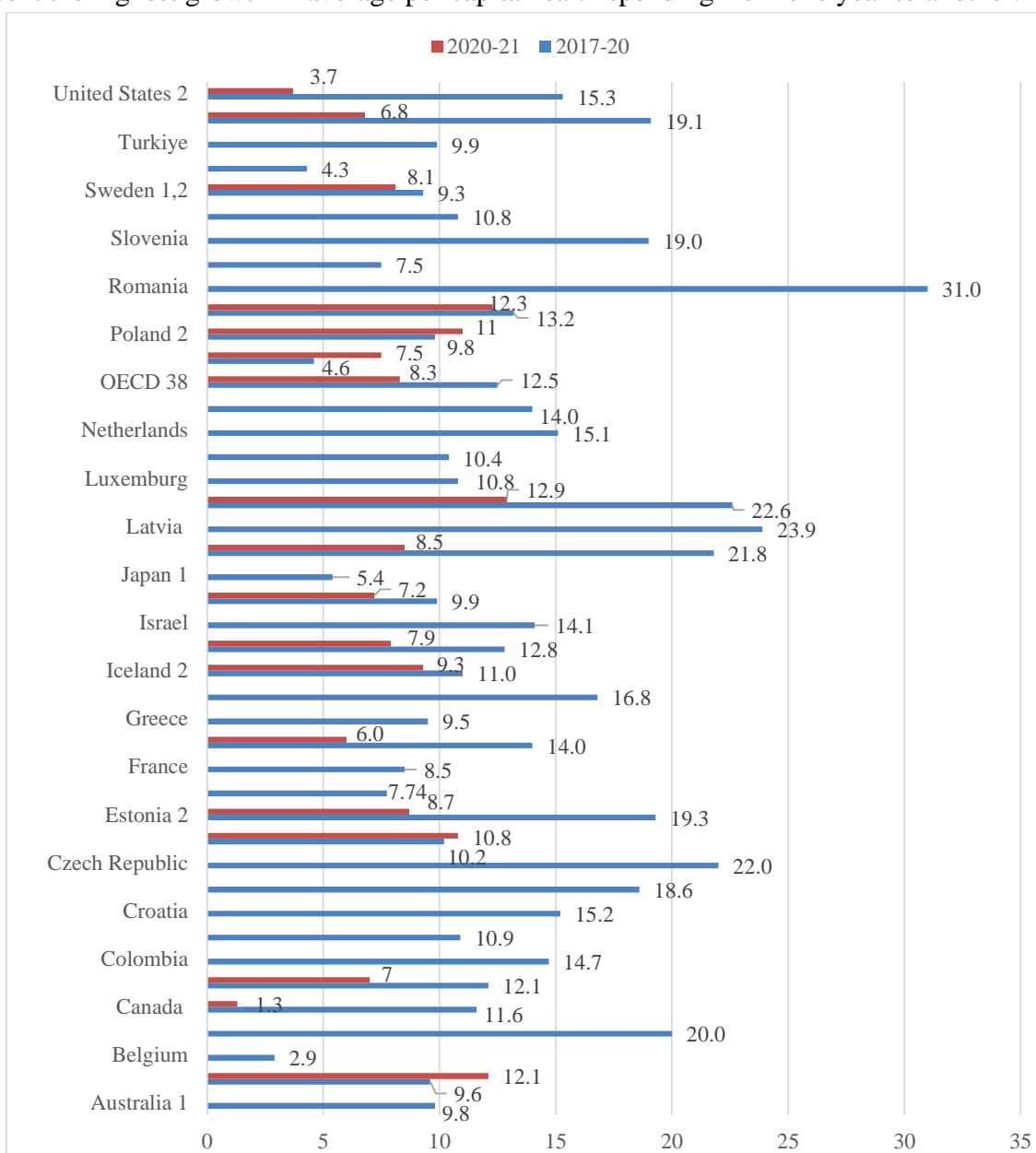


Figure 5. Annual growth in per capita health expenditure (real terms), 2017-20 (or nearest year) and 2020-21¹⁷

Source: OECD Health Statistics 2022

¹⁷ Note: OECD average growth rate for 2020-21 is based on the preliminary estimates for 17 countries. 1. Estimates for 2018-20. 2. Estimates for 2020-21.

However, there are diverging trends in the pattern of health spending across countries in 2020, varying according to the extent to which a country was affected by the crisis, and reflecting the differing ways that health care is financed in countries. Upward pressure on spending can be observed in a number of countries in line with increased testing and treatment of COVID-19 patients, while widespread containment policies and the reduction in non-COVID-19 care services may have led to lower spending on health, particularly where activity-based financing plays a role. Initial estimates for Austria, Denmark suggest that per capita health spending grew by more than 10% in 2021. A number of other – mainly European – countries able to provide initial estimates also reported significant increases in health spending compared to the previous period.

CONCLUSION

COVID-19 has generated enormous human, social and economic costs, and revealed the underlying fragilities of many health systems to withstand shocks. It has placed immense pressure on health care services that were often already overstretched before the pandemic. The pandemic has also shown that effective health spending is an investment, not a cost to be contained: stronger, more resilient health systems protect both populations and economies [2, 5].

At the same time, additional health spending and COVID-related debt will weigh heavily on budgets, and require careful scrutiny to maximise value for money [2]. Moving forward, it is imperative to strengthen the resilience and preparedness of health systems. The encouraging signs point to the potential for systemic change, with advances in digital health and better integrated care.

REFERENCES

1. Health spending
<https://data.oecd.org/healthres/health-spending.htm>
2. Health at a Glance 2021, OECD indicators
https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance_19991312
3. Health expenditure and financing
<https://stats.oecd.org/viewhtml.aspx?datasetcode=SHA&lang=en>
4. Global report 2021 “Global expenditure on health: Public spending on the rise?”
<https://apps.who.int/iris/bitstream/handle/10665/350560/9789240041219-eng.pdf>
5. WHO Global Health Expenditure Database
<https://apps.who.int/nha/database>

CZU: 338.486(282.247.314)

DOI: <https://doi.org/10.53486/dri2022.12>

PROVISION OF TOURIST SERVICES IN THE BASIN OF THE LOWER COURSE OF THE DNISTRE RIVER

MOROZ IVAN¹⁸

Abstract: *The purpose of the research is to assess the state and types of service provision in the Lower Dniester River Basin and analyze their use, especially for tourist and leisure activities. For the activity of structures in the tourism industry, one of the priority components is: the network of economic agents that provide services in the field of tourism. Many services have expired and are in poor condition. This fact highlights urban localities and causes most tour operators to reduce tourist trips to many rural destinations that thus become isolated from national tourist circuits. Some services have been renovated according to international standards, but these advances are insignificant due to the lack of funding sources. At present, low employment rates are generally found in the region.*

Key words: *provision, services, tourism, Dniester.*

JEL CLASSIFICATION: Z; Z3; Z31; Z33.

INTRODUCTION

This region has a rich natural and anthropogenic tourism potential, which, being capitalized at its fair value, could have great prospects in increasing tourist flows and developing tourism. This study is among the pioneering works in our country, when the flows are evaluated at the hydrographic basin level.

At the end of the 1980s, the Dniester Valley was one of the most popular tourist destinations in the former USSR. The tourist and recreational attractions in the vicinity of the Republic's capital enjoyed great popularity, especially the Vadul lui Vodă resort in the cities of Tiraspol and Tighina. These areas also benefited from the largest number of accommodation and leisure units, and the transport infrastructure ensured a maximum flow of tourists. Also, the Dniester Valley has a high balneoclimatic potential, which was exploited to a much greater extent compared to the other tourist regions of the Republic. However, since the beginning of the 1990s no complex studies have been developed, which would value the very valuable touristic heritage of this region (Eфpoc, 1991).

As a result of the armed conflict on the Dniester from 1991-1992 and the tense relations between the authorities on the left and right of the Dniester, the number of visitors to this area decreased considerably, and the tourist and leisure activities significantly decreased in intensity. In addition, a good part of the area of the Lower Dniester is controlled by the illegal authorities on the left of the Dniester, where most of the visitors come from. Thus, the official authorities of the Republic of Moldova have incomplete information and do not collaborate with the authorized subdivisions on the left side of the Dniester. In recent years, as a result of the efforts of tourist agencies

¹⁸ Ph.D Student, scientific researcher, email: morozbye@yahoo.com
ORCID: 0000-0002-0847-0176

and NGOs, there has been a relaunch of this tourist region, especially in the area of the Lower Dniester (Bacal, 2010).

This study of tourism is done at the basin level in the Lower Dniester Basin region and the identification of potential areas for the development of tourism activities that will improve the situation of social-economic problems by creating new jobs and additional incomes.

The Lower Course Basin of the Dniester River on the territory of the Republic of Moldova was selected for the study. The research area occupies the entire or partial territory of several territorial administrative units of the country (figure 1).

This territory was selected based on the following criteria: geographical position, current state, historical-cultural heritage, tourist and recreational sites, hydrography, relief, borders and others.

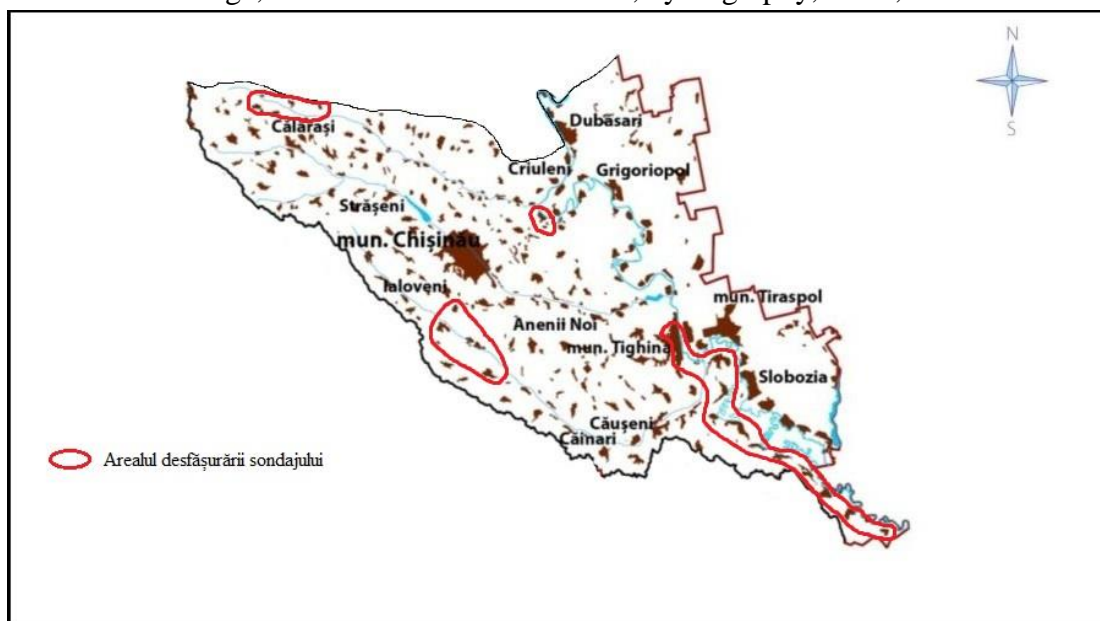


Figure 1. The network of human settlements and the area of implementation of the sociological survey within the LDRB.

Source: developed by the author.

For conducting the survey in the field, some more important regions were selected (figure 1), which from a geographical point of view cover the most eloquent tourist regions in the Lower Dniester River Basin (LDRB). In this way, it was selected from the northern part - the localities from Călărași district (Răciula, Hîrbovăț, Mîndra Frumoasa, Leordoia, Palanca, Hîrjauca); from the central part of the region – the localities of the Ialoveni district (Rezeni, Horești, Costești, Mileștii Mici); from the eastern part of the region – Chisinau Municipality (Vadul lui Vodă); and from the southern part of the region - the localities of the Ștefan Vodă district (Palanca, Tudora, Crocmaz, Olănești, Purcari, Răscăieți, Ciobruciu, Talmaz, Căușeni (Grădinița, Leuntea, Copanca, Chițcani, Hagimus,) Transnistria (Tighina). Thus, from from a geographical point of view, the entire region was taken into account where the author and other specialists in the field made personal field trips.

RESULTS OF THE QUESTIONNAIRE-BASED SOCIOLOGICAL SURVEY IN THE LDRB

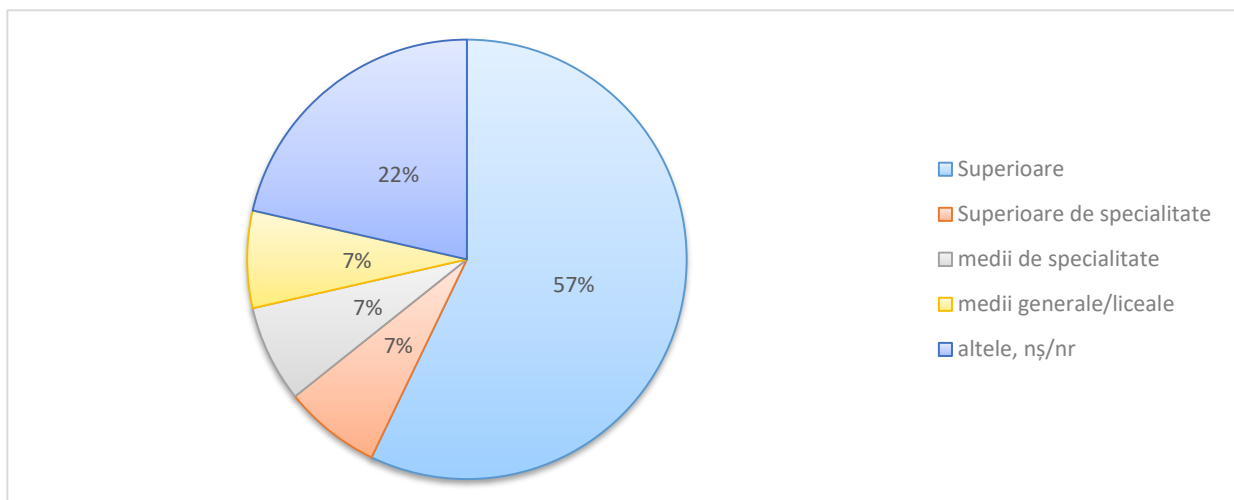


Figure 2. Owner studies

Source: calculated by the author based on the sociological survey in the field

According to the data collected in figure 2, the structure of the sample according to the last graduated school of the owner who provides services places people with higher education in the first place with more than 50 percent of those interviewed. On the second position are the owners who ticked the column other studies or don't know/don't answer, and the last position was shared by three categories together totaling 21% of the total providers, namely those who have general/high school, higher and secondary education Specialized.

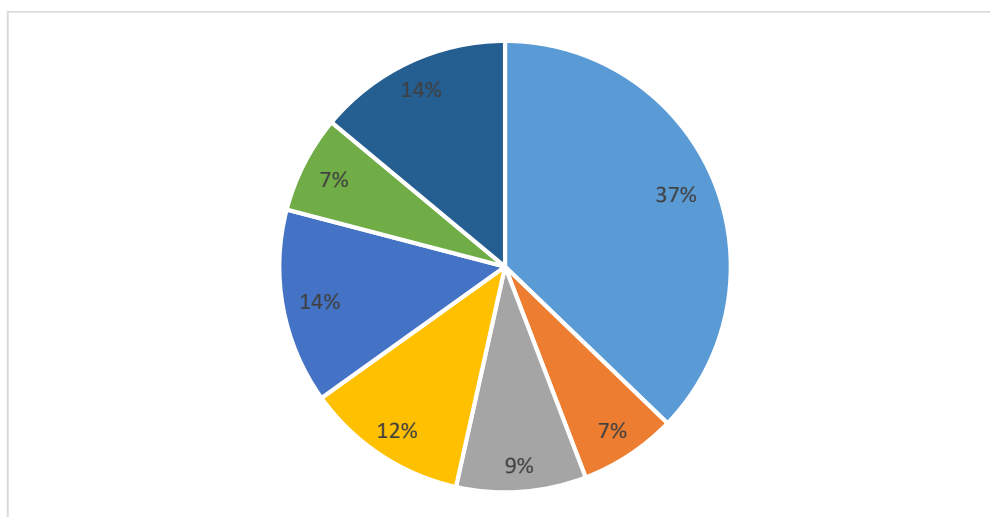


Figure 3. What are the main personal reasons for founding the tourism enterprise?

Source: calculated by the author based on the sociological survey in the field

According to the collected data, which are reflected in figure 3, the main personal reasons for founding the tourism enterprise are the development of a profitable and promising local business (37%), the availability of the necessary financial sources and other reasons held 14% of the respondents' answers, the passion for providing services tourism (12%), ensuring a decent future for descendants (9%), 7% of economic agents emphasized that the main reason for providing tourist

services is determined by the subsidies allocated by the state and the possibility of providing jobs for relatives and locals.

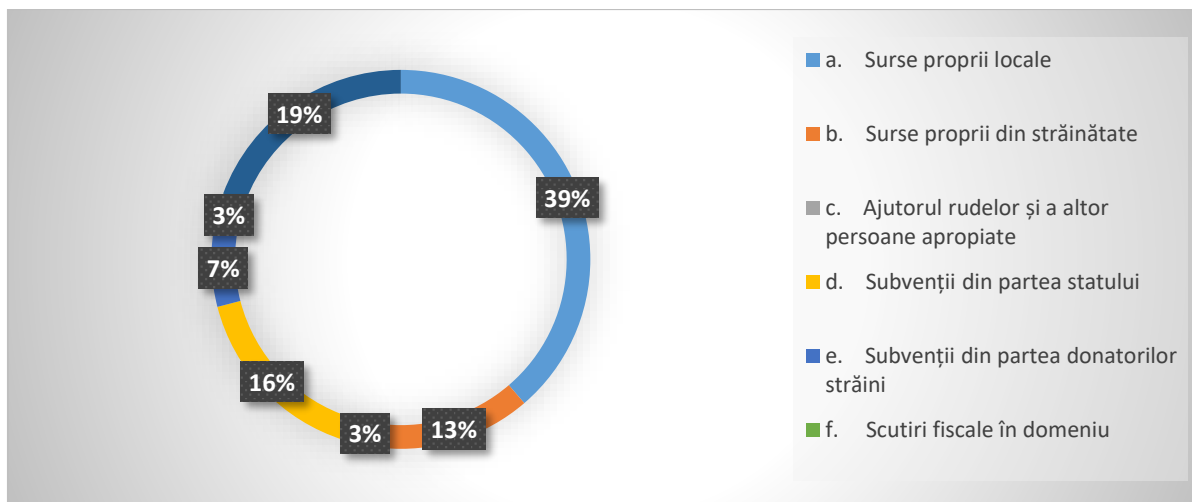


Figure 4. What were the main sources in the development of the tourism business?

Source: calculated by the author based on the sociological survey in the field

The main sources that were the basis of the development of tourist businesses are the local ones (39%), followed by other sources with 19%, subsidies from the state constitute 16%, own sources from abroad 13%, subsidies from foreign donors 7% and 3% each constitute tax exemptions in the field and the help of relatives and other close people.

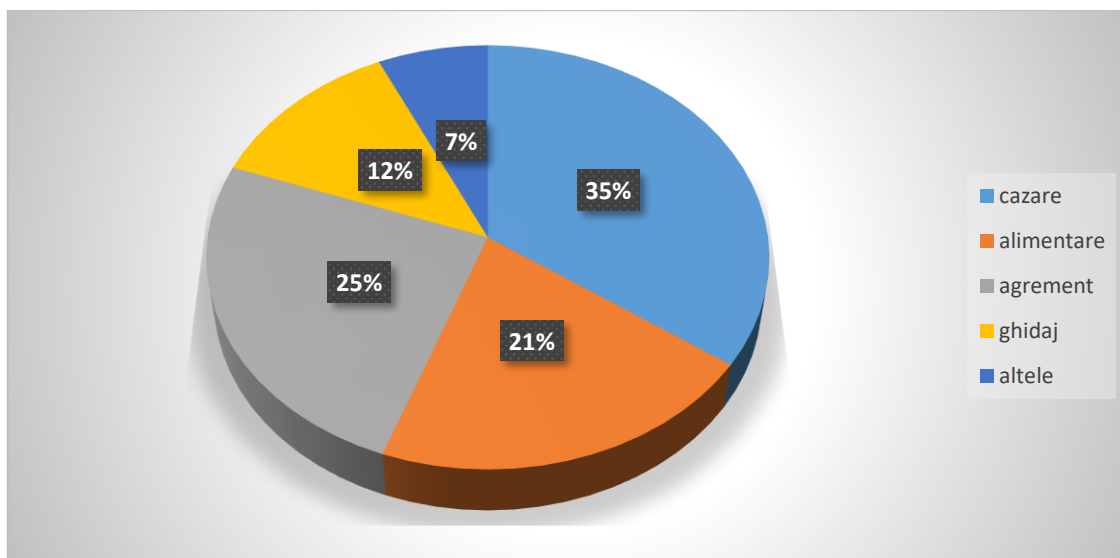


Figure 5. What services are provided?

Source: calculated by the author based on the sociological survey in the field

According to the data provided by the respondents (figure 5), accommodation services are provided 35%, leisure 25%, food 21%, guiding 12% and others 7% which include various cultural, sports, religious, recreation, gastronomic, entertainment activities such as fishing , crafting, knitting, crocheting, pilgrimage, festivals, festivities, workshops, healing, treatment, tourist cooking, cycling, kayaking, hunting, wakeboarding and SUP, etc.

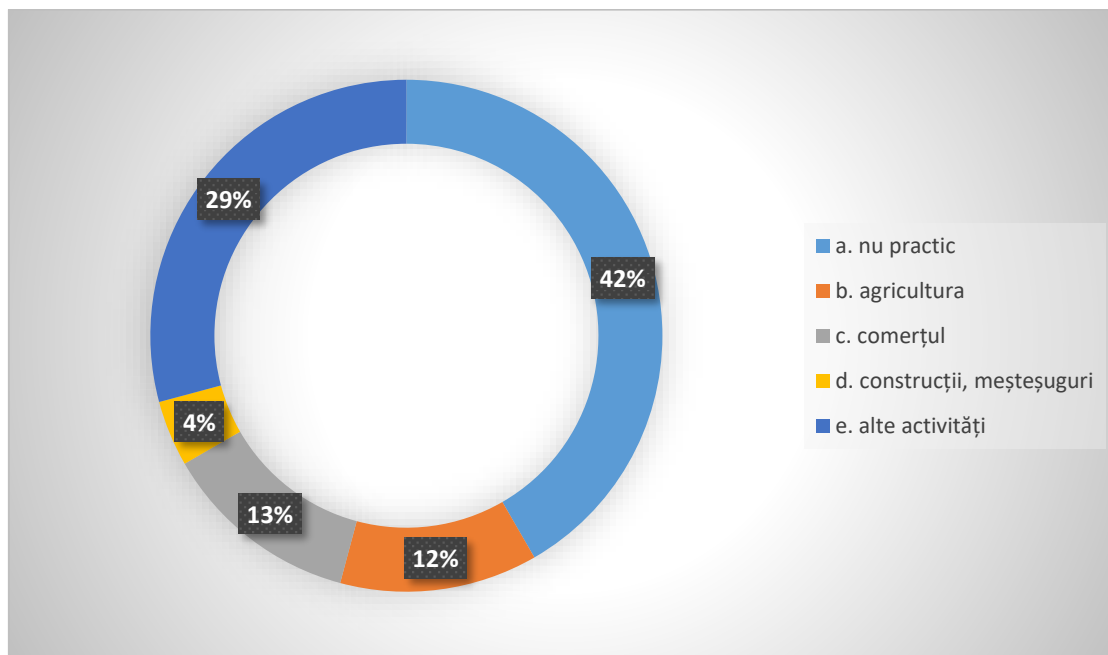


Figure 6. Apart from tourism, do you practice other economic activities in the area?

Source: calculated by the author based on the sociological survey in the field

After asking the question, "Besides tourism, do you practice other economic activities in the area?", 42 percent of the respondents answered that "no", which indicates that they are vulnerable and totally dependent on the tourism business they manage. . The second category 29% of respondents have other activities such as transport, legal, beauty services, notary, etc. The third group also includes 29% of which 13% trade, 12% agriculture and only 4% construction, crafts.

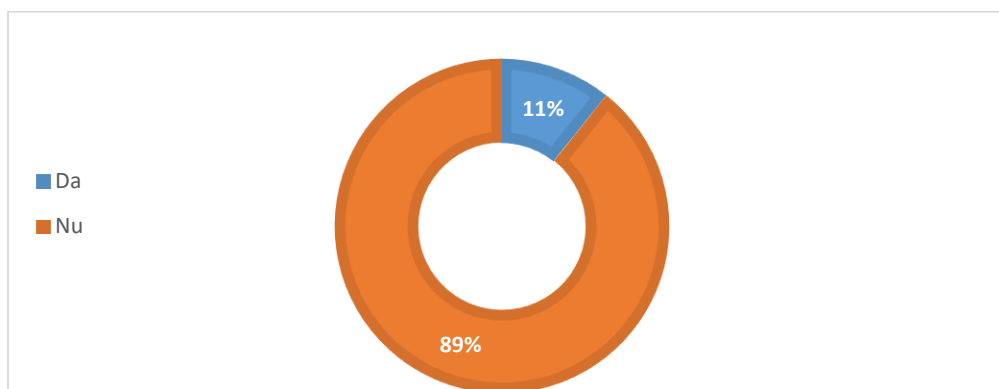


Figure 7. Do you have your own or local guides?

Source: calculated by the author based on the sociological survey in the field

To the question "Do you have your own guides or from the locality?", the studio region is in a bad position. Only 11% of the providers have the possibility to guide, a fact that diminishes and destroys the tourist flow at the destination. Most of the providers (89%) do not have guides, some working with travel agencies and external guide services, others not.

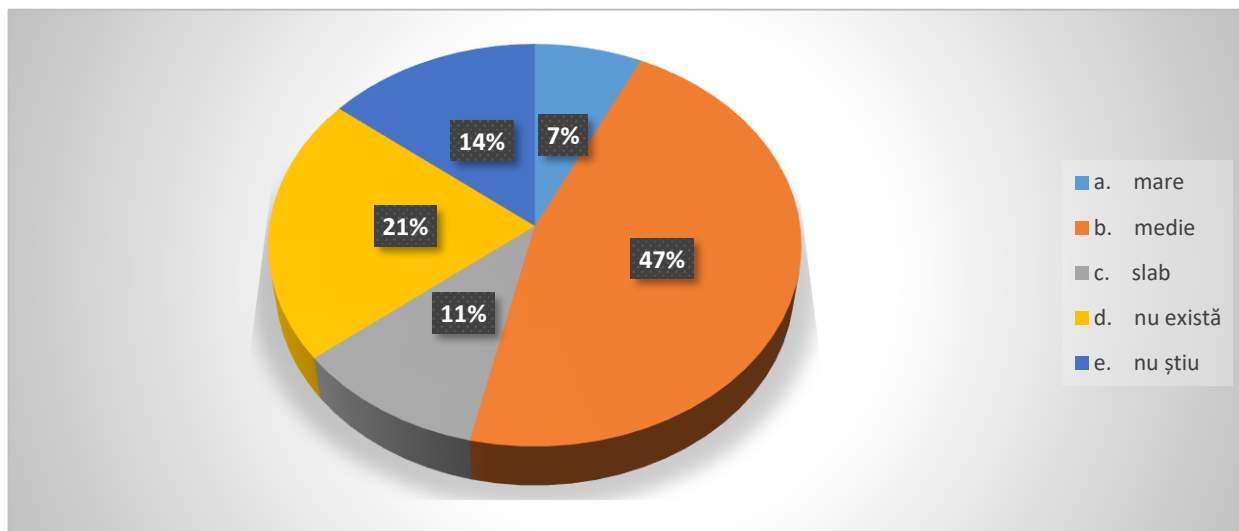


Figure 8. The level of competition in the area.

Source: calculated by the author based on the sociological survey in the field

As we can see from figure 8, the level of competition in the study region is average, as stated by 47% of the respondents and the other 21% consider that it does not exist. A good part of economic agents, namely 14%, do not know the situation in the area and answered this question by ticking "I don't know". The other 11% of providers consider that the competition is weak and only 7% think that it is high. Small and medium competition denotes the advantageous fact for the development of services in the field of tourism.

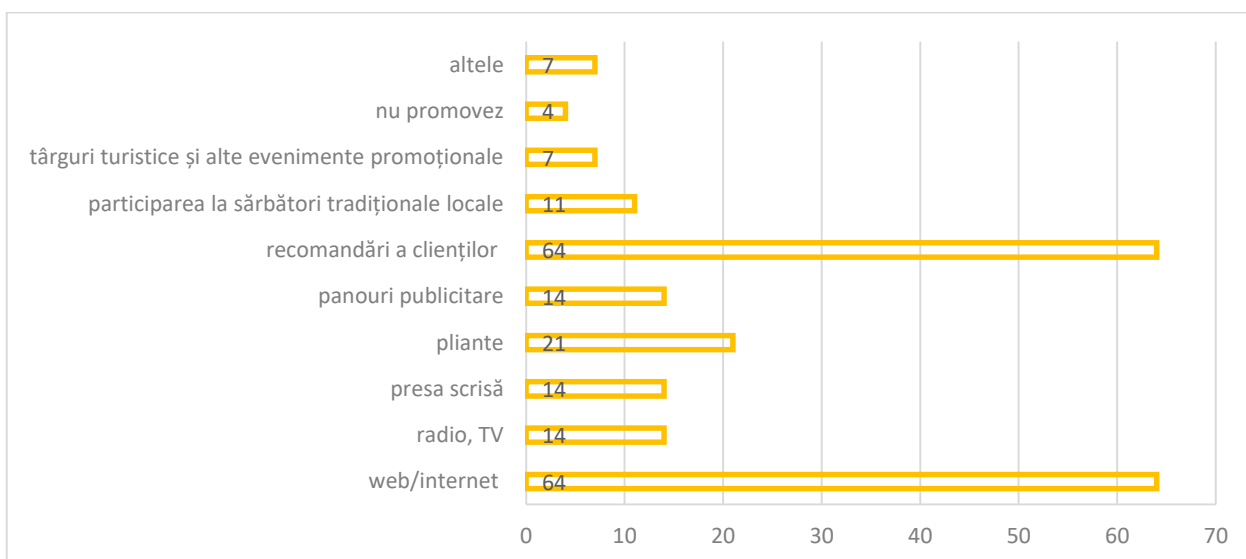


Figure 9. How do you promote your tourist destination?

Source: calculated by the author based on the sociological survey in the field

The vast majority promote their services and offers through the most used medium today, namely through the internet, but not only this, the oldest and most durable method with an effectiveness of attracting tourists of over 60% remains that of the recommendations made by tourists both in the classical method as well as the electronic one. On the other decreasing positions are the

methods such as leaflets 21% radio and TV, print media, billboards each 14% and the other methods of promoting the destination.

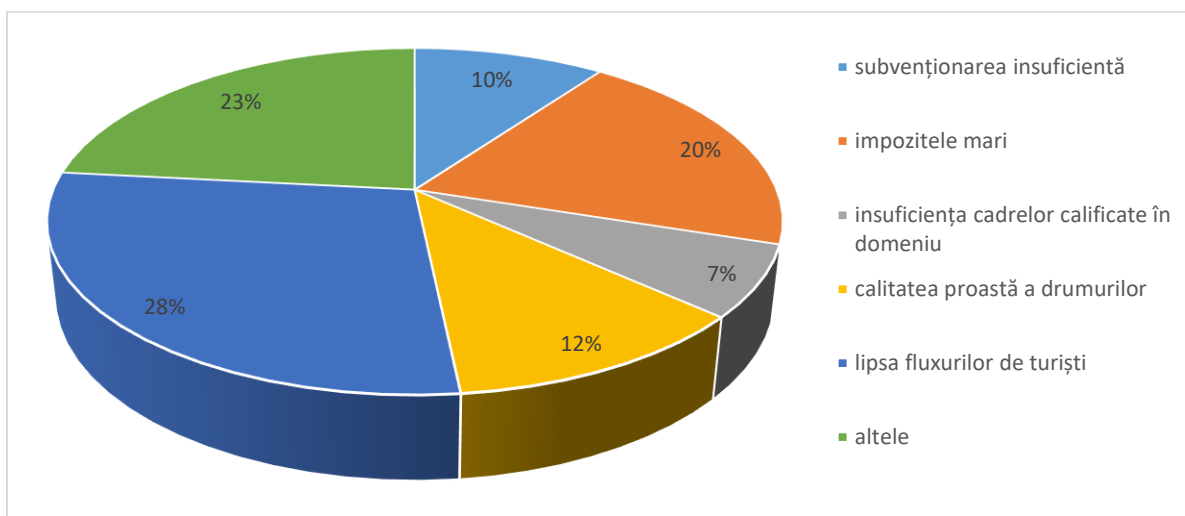


Figure 10. What difficulties do you encounter for the development of the tourism business, which should be solved as a priority?

Source: calculated by the author based on the sociological survey in the field

The main difficulties for the development of the tourism business that providers encounter that should be solved as a priority are the lack of tourist flows (28%), high taxes (20%), with a medium impact are the poor quality of the roads to the destination (12%) and subsidization insufficient (10%). The third group of difficulties according to the opinion of the economic agents interviewed is composed of 30%, which includes the insufficiency of qualified staff in the field, the negligence of the Local or Central Public Administration, rest and leisure are not a priority and unfair competition.

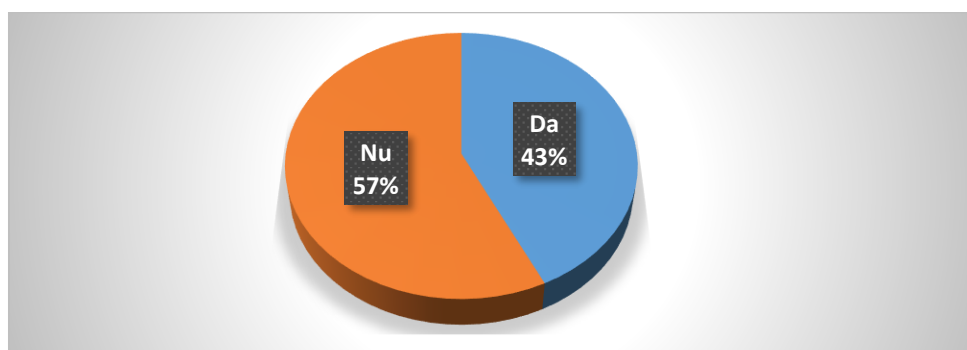


Figure 11. Looking to expand your local tourism business?

Source: calculated by the author based on the sociological survey in the field

To the question offered to providers if they want to expand their local tourism business, we received a more pessimistic and discouraging answer with a No (57%) and with the other part of economic agents who want a growth and expansion in this field with a little more less than half (43%) which constitutes a still gratifying result and with good hopes for the development of the provision of accommodation, food, leisure, transport, guidance, etc. services.

CONCLUSION

In the BCIRN region, various accommodation, leisure, food, guiding and other services are provided, including various cultural, sports, religious, recreation, gastronomic, entertainment such as fishing, handicrafts, knitting, crocheting, pilgrimage, festivals, festivities, workshops, healing, treatment, tourist cooking, cycling, kayaking, hunting, wakeboarding and SUP etc.

The main sources that were the basis of the development of tourism businesses are the local ones (39%), followed by other sources with 19%, subsidies from the state constitute 16%, own sources from abroad 13%, subsidies from foreign donors 7% and 3% each constitute tax exemptions in the field and the help of relatives and other close people.

The owners who provide services are mostly people with higher education with more than 50 percent followed by those who have general/high school, higher and specialized secondary education.

REFERENCES

1. Bacal, P., Cocoș, I. (2012). *Geografia turismului*. Chișinău. ASEM, 227 p.
2. Cătoi, I. (coord.) (1999). *Metode și tehnici utilizate în cercetările de marketing – Aplicații*, Editura Uranus, București.
3. Chelcea, S. (2001). *Metodologia cercetării sociologice*, Editura Economică, București,
4. Cristache, S., Gogonea, R. (2002). *Folosirea anchetei prin sondaj în studiul ofertei turismului rural*, lucrare din volumul *Turismul rural românesc*. Editura Pan Europe, Iași.
5. Hapenciuc, C.V. (2003). *Cercetarea statistica in turism : studiul fenomenului turistic in judetul Suceava*. Bucuresti : Editura Didactica si Pedagogica.
6. Lefter, C. (1998). *Cercetarea de marketing. Teorie și practică*, Editura Lux Libris, Brașov, p.234.
7. Stăncioiu A. (2000). *Strategii de marketing turistic*, Editura Economică, București.
8. Țarcă, M. (1998). *Tratat de statistică aplicată*, Editura Didactică și Pedagogică, București.
9. Ефрос, В. Г. (1991). *Рекреационные ресурсы ССР Молдова и их рациональное использование*. Кишинёв: Штиинца, 118 с.

CZU: 336.226.322:334.722.26(478)

DOI: <https://doi.org/10.53486/dri2022.13>

APPLYING THE VALUE-ADDED TAX UNDER THE CONDITIONS OF PUBLIC-PRIVATE PARTNERSHIP

PANUS CORINA ¹⁹

Abstract: *This Article aims to study the main tax and accounting issues when applying the value-added tax under the conditions of public-private partnership from theoretical, conceptual and methodological viewpoints. The value-added tax is an indirect tax that draws most attention of both the State and private companies.*

Key words: *value-added tax, budget, right to deduction, refund/reimbursement, public-private partnership, public partner, private partner.*

JEL CLASSIFICATION: M 41.

INTRODUCTION

As a topic of high interest for taxation purposes, the value-added tax is certainly a consumption tax, which covers all phases of an economic circuit (inputs, production, and outputs/sale) and through which the State has the possibility to quickly collect money to the general consolidated budget. VAT administration is cumbersome and meticulous as it requires much time and effort on the side of both taxpayers and the Tax Service (reports, inspections, checks). VAT regulation is a separate yet relevant topic in the activity of public-private partnerships. On 23 November 2018, the Ministry of Finance (MoF) of the Republic of Moldova (RM) approved Methodological Guidelines on accounting peculiarities in the process of implementing public-private partnerships with the aim to govern the accounting issues arising in the process of executing public-private partnership contracts. However, these Guidelines failed to specify the peculiarities of VAT accounting and mirroring by the entities engaged in one of the contractual forms (work /service rendering, trust administration, civil society, lease, concession) of public-private partnership [3].

This Article aims to deal with tax and accounting issues when applying the value-added tax under the conditions of carrying out public-private partnership contracts from theoretical, conceptual and methodological viewpoints. Although the studied issue is wide, the Article will focus on conceptual terms and basic theoretical information, as well as on the correlation of accounts concerning the bookkeeping of VAT-related operations under the conditions of public-private partnership. The tax legislation, in particular the VAT legislation, has been used as material sources to write this Article. Relevant literature, monographs, research articles published in the Republic of Moldova, Romania and the European Union (EU) have been also reviewed to this end.

The research has been conducted based on the provisions of the Law on Public-Private Partnership No. 179/2008 [5], the Moldovan Tax Code No. 1163-XIII of 24.04.1997 [1], the Law on

¹⁹ Ph.D Student, email: corinapanus.diug@gmail.com
ORCID: 0000-0002-2062-2953

Accounting and Financial Reporting No. 287 of 15.12.2017 [4], the Law on Customs Tariff, No. 1380-XIII of 20.11.1997 [6], the Methodological Guidelines on accounting peculiarities in the process of implementing public-private partnerships [3] and based on relevant specialty bibliographical sources.

OUTCOMES AND DISCUSSIONS

The value-added tax (hereinafter referred to as VAT) is a state tax representing a form of payment to the budget of a portion of the value of goods supplied and services rendered that are subject to taxation on the territory of the Republic of Moldova, as well as a portion of the value of all taxable goods and services imported into the Republic of Moldova [1].

In Romania, the Tax Code, art.265 defines VAT as an indirect tax owed to the State Budget that is collected in compliance with the provisions of that Title [7].

Another VAT feature is that it is charged only in the country where the goods are consumed, not where they are manufactured. In this vein, it is stated that all goods exported outside the country boundaries are absolved of this tax, while the imported goods are subject to VAT levied in the appropriate manner.

In light of the ratio of VAT revenues at the EU level, it has been stated that VAT is the most important indirect tax, being framed in the general consumption taxes as a result of levying it on the overall sales.

It should be noting that the European Commission granted the status of a candidate country to the Republic of Moldova on 24 June 2022. Hence, in order to be in line with the EU standards in the area of tax administration, the Republic of Moldova shall begin the approximation of its legislation in compliance with the timetable set out by the Association Agreement, including the VAT legal framework, with the EU legislation, namely with *Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax* (hereinafter referred to as Directive 2006/112/EC) [2].

Directive 2006/112/EC does not define the value-added tax, but sets out that the common system of VAT should result in neutrality in competition [2].

The Tax Code of the RM stipulated differential VAT rates as follows [1]:

- Art.96 (a) sets a standard rate of 20% of taxable value of imported goods and services and deliveries made on the territory of the Republic of Moldova;
- Art.96 (b) sets reduced rates such as 8% for agricultural products, medicines, natural gas and 12% in the HoReCa sector.

It is worth mentioning that throughout the emergency period (set out by the National Extraordinary Public Health Commission through its Decision issued on 13 January 2022), the Tax Service of the RM allowed to use a 6% VAT rate for the HoReCa sector [11].

At the European level, the Directive has fixed a minimum standard rate of 15%, whereas the reduced rates are fixed as a percentage of the taxable amount, which may not be less than 5% [2]. The VAT standard rates applied by 27 EU Member States, as of 1 January 2022, fall within the range of 17-27%, while in 15 Member States out of 27, the VAT standard rate falls within the range of 19% and 21% (Table 1).

Table 1. VAT standard/reduced rates applied by the EU Member States as of 01 January 2022

Member State	Standard Rate	Reduced Rate	Member State	Standard Rate	Reduced Rate
Austria	20	10/13	Ireland	23	9/13.5
Belgium	21	6/12	Italy	22	5/10
Bulgaria	20	9	Lithuania	21	5/9
Cyprus	19	5/9	Luxembourg	17	8
Czech Republic	21	10/15	Latvia	21	12/5
Germany	19	7	Malta	18	5/7
Denmark	25	-	Netherlands	21	9
Estonia	20	9	Poland	23	5/8
Greece	24	6/13	Portugal	23	6/13
Spain	21	10	Romania	19	5/9
Finland	24	10/14	Sweden	25	6/12
France	20	5.5/10	Slovenia	22	5/9.5
Croatia	25	5/13	Slovakia	20	10
Hungary	27	5/18			

Source: Developed by the Author on the basis of the data published by the European Commission [12]

Out of the data displayed in the Table above one can notice that Luxembourg charges the lowest VAT rate, namely 17%. On the other hand, Hungary is the Member State levying the highest VAT rate, i.e. 27%. The experience and example of EU Member States show wide variations of VAT rates from one country to another.

Against this background, multiple issues may arise in the accounting practice in terms of applying VAT in the activity of public-private partnerships implemented in the RM. This may be explained by numerous amendments of the Moldovan Tax Code.

By the end of 2019, the tax legislation of the Republic of Moldova set out in the Tax Code (Art. 101⁴) that partners in public-private partnership projects from the list of works and services of national public interest proposed for public-private partnership that, as of 1 January 2018, made (incurred) capital investments (expenses) intended for the implementation of public-private partnerships, should have the right to claim VAT refund of the amount paid through the bank account to make those capital investments (expenses) [1]. The right to claim VAT refund was granted regardless of the timeframe of commissioning the facilities built with those capital investments (expenses).

Likewise, Art. 103 (9⁸) stipulated that the goods and services imported by the partners under the public-private partnership projects should be subject to VAT exemption with no right to deduction if such goods and services were mentioned in the list of works and services of national public interest proposed for public-private partnerships, approved by the Government pursuant to Art.11 a) of Law No. 179/2008 on Public-Private Partnership, and were intended solely to implement the public-private partnership projects of national interest. The Government was supposed to define the way of using the tax incentives in question [1].

Practically, the provisions of national legislation applicable at that time established incentives (avoid blocking the economic operators' funds in VAT) in order to attract private investors in the projects with the State.

Later on, as of 1 September 2019, the Tax Code of the RM was amended, and Articles 101⁴ and 103 (9⁸) were repealed by Law No. 115 of 15.08.2019 [8].

Therefore, any private partner engaged in public-private partnership projects could no longer enjoy VAT refund on capital investments nor benefit from VAT exemptions without the right to deduction for the imported goods and services. Since that date, general provisions on VAT refund for capital investments as per Art. 101¹ [1] shall apply.

As regards the accounting of VAT, the general chart of accounts used in the Republic of Moldova provides for the following sub-accounts [9]:

2252 “VAT Receivables”

5344 “VAT Liabilities”

Sub-account **2252** is an Asset Sub-account and is used to keep records on VAT receivables. The VAT advance payment shall be mirrored in the Sub-account Debit, as well as the difference between the booked and the calculated amount. The Sub-account Credit shows the amounts booked to extinguish the tax liability, as well as the overpaid amounts or those refunded from the budget.

Sub-account **5344** is a Liability Sub-account and is used to keep records on VAT liabilities to the budget. The Credit part of this Sub-account mirrors the occurrence of or increases in VAT liabilities towards the budget, while the Debit shows the extinction of liabilities or their book-entry.

Hence, in light of accounting records, applying VAT on operations specific for public-private partnership shall be done as follows:

- *Dt 2345 “Receivables related to public-private partnership”*
Ct 5344 “VAT Liabilities” – for the VAT amount recognised as a liability towards the budget;
- *Dt 5344 “VAT Liabilities”*
Ct 241 “Cash”, 242 “Current accounts in national currency” – for the VAT amount to be paid from the budget;
- *Dt 5344 “VAT Liabilities”*
Ct 123 “Fixed assets” – for the VAT amount to be booked, which was paid for the value of the imported fixed asset;
- *Dt 5344 “VAT Liabilities”*
Ct 521 “Current trade liabilities”, 522 “Current liabilities towards the affiliated parties” – for the VAT amount booked upon the purchase of goods (services) from other Moldovan resident undertakings;
- *Dt 2252 “VAT Receivables”*
Ct 5344 “VAT Liabilities” – for the VAT amount related to the difference between the booked and the calculated amounts (the accounting formula is prepared at the end of the reporting period).

CONCLUSIONS

On 1 September 2019, the Tax Code of the RM was amended to repeal Art. 101⁴ and Art. 103 (9⁸) by Law No. 115 of 15.08.2019.

On 24 June 2022 the Republic of Moldova was granted, by the European Commission, the status of an EU candidate country. Therefore, the RM is expected to approximate its relevant legislation with *Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax*.

The Methodological Guidelines on accounting peculiarities in the process of implementing public-private partnerships shall be amended and tailored in compliance with the new provisions of the Moldovan Tax Code as well as of other legal acts in effect.

Hence, in terms of the above, we consider the range of VAT-related operations, especially when it comes to public-private partnerships, to be rather complex and difficult to overcome, keeping in mind the constantly evolving tax legislation. As the legislative process progresses towards more complex and diversified ranges, imposing new tax regulations in our country, it would trigger the occurrence of new situations concerning the VAT wide spectre of issues, thus offering new research opportunities.

BIBLIOGRAPHY:

1. Tax Code of the Republic of Moldova No. 1163-XIII of 24.04.1997. In: Official Gazette of the Republic of Moldova [online]. Available at: https://www.legis.md/cautare/getResults?doc_id=132370&lang=ro#
2. Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax. Available at: <https://eur-lex.europa.eu/legal-content/ro/TXT/?uri=celex%3A32006L0112>
3. Methodological Guidelines on accounting peculiarities in the process of implementing public-private partnerships: MoF Written Order No. 192 of 12 November 2018. In: Official Gazette of the RM, 2018, No. 430-439. Available at: <http://www.legis.md/cautare/rezultate/111830>
4. Law on Accounting and Financial Reporting of the RM No. 287 of 15.12.2017. In: Official Gazette of the Republic of Moldova, No. 1-6 of 05.01.2018. Available at: https://www.legis.md/cautare/getResults?doc_id=120938&lang=ro
5. Law on Public-Private Partnership: No. 179 of 10 July 2008. In: Official Gazette of the RM [online] 2008, No. 165-166. Available at: <http://www.legis.md/cautare/rezultate/110569>
6. Law on Customs Tariff, No. 1380-XIII of 20.11.1997. Available at: https://www.legis.md/cautare/getResults?doc_id=116932&lang=ro
8. Law No. 227/2015 on Tax Code of Romania [online]. Available at: https://static.anaf.ro/static/10/Anaf/legislatie/Cod_fiscal_norme_11022020.htm
9. Law No. LP115/2019 of 15.08.2019 amending the Tax Code No. 1163/1997 [online]. Available at: https://www.legis.md/cautare/getResults?doc_id=116932&lang=ro
10. General Chart of Accounts with subsequent amendments and addenda. In: Official Gazette of the RM, No. 388-392/27.12.2019, Art. 2125. Available at: https://www.legis.md/cautare/getResults?doc_id=130818&lang=ro
11. National Accounting Standards approved by the MoF Written Order No. 118 of 06.08.2013. Available at: https://www.legis.md/cautare/getResults?doc_id=117850&lang=ro#
12. [State Tax Service of the Republic of Moldova, web page. Available at: https://sfs.md/ro/stiri/termenul-de-aplicare-a-cotei-tva-de-6-pentru-sectorul-horeca-prelungit-pana-la-15-martie-2022](https://sfs.md/ro/stiri/termenul-de-aplicare-a-cotei-tva-de-6-pentru-sectorul-horeca-prelungit-pana-la-15-martie-2022)
13. Report published by the European Commission for 2022. Available at: https://europa.eu/youreurope/business/taxation/vat/vat-rules-rates/index_ro.htm

CZU: 37.014.543:004.77"2030"(478)
DOI: <https://doi.org/10.53486/dri2022.14>

FINANCING THE DIGITIZATION OF EDUCATION IN THE REPUBLIC OF MOLDOVA: THE EDUCATION 2030 STRATEGY AND THE OPPORTUNITIES OF BLOCKCHAIN TECHNOLOGY

ANDRONIC ADRIAN²⁰

Abstract: *The financial support for implementing technology and innovating the education process is becoming increasingly relevant and changing its content. New, complex financing mechanisms are emerging. In the context of the growing costs of education activities, when state budgets are cut, a mix of emerging financing methods in the field under consideration acquire a key role. Currently, there are several obstacles to the digitization of education: the agglomeration of the education sector with fragmented ICT solutions, a fact that prevents the implementation of unitary digital supports intended for computer-assisted training and, informational educational management; the inefficient learning and educational management and the lousy use of material and financial resources intended for the digitization of the education sector; the low capacity of the education sector to return to normality after a possible pandemic or other crises; the slow expansion of lifelong learning, especially in the development of distance learning.*

In this paper, we aim to evaluate the financing digitization of education in the Republic of Moldova, from the perspective of past actions, the plans included in the Education 2030 Strategy, and the opportunities offered by the blockchain. We used online research, literature review, and interviews with implementers and experts in education and education technology. We concluded that the digitalization of education in the Republic of Moldova is possible with significant financial investments not only from the state, but also from other stakeholders, which predetermines the development of new approaches and tools included in the financial mechanism of the education system.

Key words: *education, financing, digitization, blockchain, Moldova.*

JEL CLASSIFICATION: I22, I25, O33.

INTRODUCTION

The adaptation of the education and training system to technological evolution is a complex process, necessary for the preparation and improvement of human resources and an essential element of the development, modernization and innovation of society (Jobirovich, 2021; Wells & Claxton, 2002). The use of new digital technologies is the direct way to make school more attractive for students, more adapted to their needs and lifestyles, more effective in developing skills, generating lifelong education (Ronzhina, Kondyurina, Voronina, Igishev, & Loginova, 2021).

Currently, the impact of digital transformation on society and the labor market, as well as on education and training systems, is increasingly evident. From this perspective, the digital transformation in education is driven by advances in connectivity, the widespread use of digital devices and applications, the need for individual flexibility and the acute demand for digital skills (Van Laar, Van Deursen, Van Dijk, & De Haan, 2017).

The pandemic has reconfigured educational practices from "face-to-face" interaction to the online environment, an aspect that has generated a series of reflections that have put into focus the

²⁰ Ph.D Student, email: andronic.adriano@gmail.com
ORCID: 0000-0001-6645-146X

fact that teaching, learning and emerging technology can must be considered holistically the future of digital education (Onyema et al., 2020).

Despite the fact that Moldova has a developed digital infrastructure (the degree of coverage of the country's territory with 4G - 98%), well-placed e-Gov services, ICT sector with an accelerated development (7% contribution to the GDP), the COVID-19 pandemic highlighted the need to accelerate the digital transformation in the Republic of Moldova (Botezatu, 2021).

In this paper, we aim to evaluate the financing digitization of education in the Republic of Moldova, from the perspective of past actions, the plans included in the Development Strategy “Education 2030”, and the opportunities offered by the blockchain. We used online research, literature review, and interviews with implementers and experts in education and education technology.

After a short introduction, in Section 2 we describe general context of education in the Republic of Moldova and the existing issues. In Section 3 we go through the digitization of education in Moldova and implemented projects. We present and analyze the education expenditure and planned actions and budget for de digitization of education in Moldova in Section 4. We discuss the blockchain-related opportunities for education in the Republic of Moldova in section 5. Finally, we summarize the findings and implications in Section 6.

1. The general context of education in the Republic of Moldova

Although in the last two decades the economy of the Republic of Moldova has evolved: from 2010 to 2019 the average annual GDP growth rate was about 4.5%; GDP per capita at purchasing power parity, in constant prices, increased from 2,813 USD in 2000 to about 6,725 USD in 2019, compared to the countries of Central and Eastern Europe, it still remained at the lower level (National Bureau of Statistics of the Republic of Moldova, 2022b).

In this context, the role of the education sector as a determining factor of the sustainable socioeconomic development of the country will increase, which implies the need for a systemic approach to educational policies.

In recent years, the natural increase of the population in the Republic of Moldova is negative, especially in the rural areas. According to National Bureau of Statistics data, in 2014 the number of the population with usual residence was 2.869 million inhabitants, and at the moment it is 2.640 million (National Bureau of Statistics of the Republic of Moldova, 2022d). The demographic decline is caused by the decrease in the birth rate, the high level of mortality, and the massive emigration of the population.

In recent years, external migration had an obvious dynamic, registering at the end of 2014, 271,611 thousand, and at the end of 2016 – 300,916 thousand citizens. According to official estimates, in 2021 approximately 352 thousand people over the age of 15 were working abroad (National Bureau of Statistics of the Republic of Moldova, 2022d). At the same time, according to the estimates of the International Organization for Migration, in 2019, the number of Moldovan migrants reached 1 million people (Government of the Republic of Moldova, 2020).

At the same time, according to reports of the United Nations Population Fund, by 2035 the country's population could decrease to two million, of which every third person would be over 60 years old (United Nations Population Fund, 2022).

Migration, accompanied by changes in the fertility rate and family composition, led to the considerable decrease of the school population (National Bureau of Statistics of the Republic of

Moldova, 2022c), the disappearance of some small schools, which became the rule, to the education of students in incomplete families, to the phenomenon of school dropouts and, consequently, to a low level of education quality.

The COVID-19 pandemic has considerably worsened the state of health of the population, including the state of psychological health. Although in the last 20 years the health status of the population of the Republic of Moldova has registered certain improvements, life expectancy has increased in a comparative aspect 1996-2021: from 63 to 66.8 years for men and from 69 to 75.1 years for women (Government of the Republic of Moldova, 2020), however, at this chapter the Republic of Moldova is placed below the regional standards.

The spectrum of health problems faced by adolescents and young adults is very diverse. Such phenomena as smoking and excessive consumption of alcoholic beverages, the high rate of HIV infection among young people and pregnancy among teenage girls, poor psycho-emotional health, diseases, the epidemiological situation generated by COVID-19 strongly affect the functionality of the education system and its development prospects (Ministry of Education and Research of the Republic of Moldova, 2022).

The family and the educational institution are determining factors of children's education. According to recent data, over a third of teenagers have at least one parent working abroad and about 10% of teens have both parents working abroad. In this context, the state's attention to the family as a primary factor in children's education must be one of the priority perspectives of social policies. The educational system must offer all children the same opportunities for learning and development regardless of their family and socioeconomic background.

Since the economy and primarily the agricultural sector is extremely vulnerable to climate change: drought, heavy rains, hail, insufficient drinking water, etc., there is an urgent need for resilience education.

2. Digitization of education in the Republic of Moldova

The education system faces the problem of inefficient application of ICT in education and of ensuring the education process with educational software (Government of Moldova, 2021).

Due to poor access to the Internet, insufficient financial means allocated for the computerization of the education sector and, sometimes, their improper use, the availability of ICT means in educational institutions remains to be low, a fact that creates difficulties for the implementation of computer-assisted training and educational management computerized, including if, compared to a statistical average, one computer returns to 9 students (National Bureau of Statistics of the Republic of Moldova, 2022a).

The lack of a functional management in the digitalization of education process is attested: the procurement of digital equipment, without including appropriate software, including system software; use of unlicensed software; reduced practice of subscribing to system software, to general application software, but also to educational software developed by specialized companies and publishing houses (Ministry of Education and Research of the Republic of Moldova, 2022).

During the last few years, several actions have been undertaken with the aim of "digital literacy" of teaching staff and pupils/students, which allows the use of equipment, computer programs, computer networks, digital communication infrastructure, etc.

The degree of capitalization of digital skills in the teaching-learning-evaluation process remains a problem, but also the insufficient ability to effectively use the latest generations of

interactive multimedia educational software. Surveys reveal that about 79% of teachers believe that the use of the means provided by information and communication technology contributes to a large and medium extent to increasing the level of development of students' skills and that about 70% of them highlight the importance of ICT for improving learning results (Ministry of Education and Research of the Republic of Moldova, 2022). At the same time, about 40% of pedagogues show a reserved attitude towards the impact of information technologies, which signals significant delays in the digitization of education.

A series of initiatives already support the integration of digital tools at all levels of the education system in Moldova: Tekwill in every school (Tekwill, 2022), Clasa Viitorului (Clasa Viitorului, 2022), the National Digital Literacy Program of teaching staff (Ministry of Education and Research, 2022b), as well as the online education platforms studii.md and invat.online, etc.

Although 18 higher education institutions offer studies in the field of IT, there is a shortage of personnel in this field (Tekwill, 2020), partly explained by the exodus of young people. Another imbalance noted is the poor representation of girls and women in the sector: only 4.6% of girls choose to study in STEM fields (science, technology, engineering and mathematics) and only 19% of digital employees are women. Programs such as GirlsGoIT aspire to encourage and help girls get involved in IT activities. Taking measures that would ensure a balance in gender equality in all schooling programs is imperative (Ministry of Education and Research of the Republic of Moldova, 2022).

3. Education expenditure in the Republic of Moldova

In the period 2016-2021, the share of public expenditure on education in GDP increased from 5.3% to 6.1%, and decreased to 5.5% in 2021. At the same time, the share of public expenditure on education in the total of National Public Budget expenditures experienced fluctuating developments for the same period: after an increase from 17.7% recorded in 2016 to 18.4% in 2021, the value of this indicator, under the impact of the COVID-19 pandemic, decreased to 16.6% in 2021 (Ministry of Education and Research of the Republic of Moldova, 2022). The increase in the share of public expenditure on education in GDP, compared to the decrease in their share in total national public budget expenditure, is explained by the much more pronounced reduction of GDP, compared with the reduction of the National Public Budget expenses over the same time interval.

Although in absolute terms the public expenditures related to education have grown constantly (from 8.558 million MDL in 2016 to 13.398 million MDL in 2021), however, the investments made in recent years have not been able to cover the needs of a sector that aims to train the competitive labor force in the context of the global economy (Ministry of Education and Research of the Republic of Moldova, 2022).

In the structure of public expenditures for education, in 2020 the highest share was held by secondary education: 5917 million MDL or 49%, followed by early education and primary education: 3590 million MDL or 30%, professional technical education: 1052 million MDL or 9%, higher education: 1,073 million MDL or 8% (Ministry of Education and Research of the Republic of Moldova, 2022).

One of the sensitive challenges with a strong financial impact is the inefficient use of the project capacities of educational institutions as a result of the decrease in the number of pupils/students. Consequently, the constant increase in funding from the state, accompanied by the decrease in the number of pupils/students, frequently causes an exaggerated increase in unit costs,

without a corresponding improvement in the quality of the educational process (Ministry of Education, 2019).

Investments in education, which do not ensure a high level of quality and functionality of the education system, will not ensure the sustainable development of the economy or society in general, being one of the main vulnerabilities. Without an adequate salary, the attractiveness of the teaching profession will remain low, regardless of the quality of professional training (National Trade Union Confederation of Moldova, 2022).

a. Planned expenses for de digitization of education in the Republic of Moldova

The Development Strategy “Education 2030” aims to improve the functionality and quality of the educational system through the effective implementation of digital technologies to ensure the quality and sustainability of education (Ministry of Education and Research of the Republic of Moldova, 2022). Out of the 84,3 million USD planned expenses for 2022-2026, 7,9 million USD (see Table 1.) must come from the development partners of the Republic of Moldova, namely the European Union, European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), Council of Europe Development Bank (CEB), Central European Initiative (CEI), United Nations, German International Cooperation Agency (GIZ), the United States Agency for International Development (USAID), the Swedish Agency for International Cooperation and Development (SIDA), the Development Agency of the Czech Republic, the Austrian Development Agency (ADA), the Swiss Agency for Cooperation and Development (SDC), UNDP Moldova, and others (Ministry of Education and Research, 2022a; Ministry of Education and Research of the Republic of Moldova, 2022).

Table 1. Planned expenses for de digitization of education in the Republic of Moldova, thousands USD²¹

Type	2022	2023	2024	2025	2026	National Public Budget	Other Sources
Equipping at least 80% of educational units with equipment, software and other information and communication technologies, according to national equipment standards for each level of education and type of unit.	1145,71	1807,68	39108,92	39108,92	0,00	81171,23	1440,34
Ensuring the initial and continuous training of 100% of employees in the education sector regarding the development of digital skills and the implementation of	1622,51	0,00	266,73	0,00	0,00	1889,24	5248,85

²¹ Average USD/MDL exchange course for 2022: 1 USD = 18,7456 MDL.

education computerization standards.							
Developing the institutional capacity of 95% of educational institutions in the creation, use and evaluation of digital learning tools.	391,47	391,47	391,47	35,57	8,89	1218,86	1249,93
Development and implementation of higher education programs with distance learning.	2,55	2,55	2,55	2,55	2,55	12,75	0,00
Total	3162,24	2201,70	39769,67	39147,04	11,44	84292,07	7939,11

Source: Ministry of Education, Development Strategy “Education 2030” (Ministry of Education and Research of the Republic of Moldova, 2022).

The implementation costs include current and administrative expenses, non-financial assets related to educational institutions, the cost of actions, such as organizing events, training, national and international evaluations, carrying out research and studies, etc.

Table 2. List of activities and the required amount of financing from other sources, included in the Development Strategy “Education 2030”, thousands USD

Project	Thousands USD
Development of the management information system in higher education	1440,34
Elaboration of the Methodology for the certification of the digital skills of teachers and managers	26,67
Certification of teachers' digital skills	4638,93
Certification of the digital skills of management staff	631,25
Updating/developing the Distance Learning Methodology, based on the quantitative and qualitative results of recent studies/research and the need to resize the competence to learn to learn in online conditions; "Quality online education for every child"; "Education never stops."	22,95
Implementation of a unified e-admission system in order to make this process more efficient in higher education	1226,95

Source: Ministry of Education, Development Strategy “Education 2030” (Ministry of Education and Research of the Republic of Moldova, 2022).

The strategy also provides objectives that cannot be achieved without the identification of additional funding sources. The financing of the uncovered expenses will be assumed at each stage of budget planning, depending on the framework of available resources. Part of the uncovered expenses will be able to be financed by mobilizing additional external assistance (Affairs & Communications, 2014).

4. Blockchain-related opportunities for education in the Republic of Moldova

As the world grows increasingly digitally advanced, the education industry is positioned for disruption (Lubis, 2019). The EdTech industry is benefiting students and teachers for over two decades, accelerating the modernization of education (Weller, 2018). The emerging technologies like blockchain can now significantly speed up the process and significantly influence teaching and learning. The Artificial Intelligence (AI), machine learning (ML) and the distributed ledger of blockchain are gradually replacing the textbooks (Shah, Patel, Adesara, Hingu, & Shah, 2021).

Smart contracts, often used on blockchain, can help educators in developing courses on a blockchain (Palma, Vigil, Pereira, & Martina, 2019). After satisfying the necessary prerequisites, the course is automatically taught and can proceed at its own pace. The teachers and students can sign a smart contract, containing the limitations of a certain assignment, the due date and the grading deadline.

The immutable ledger technology of the blockchain creates a chronological record of current events that can be used for tracking student attendance, showing a comprehensive report card, displaying student transcripts and notifying students, parents and other stakeholders of their progress (Bhaskar, Tiwari, & Joshi, 2020). Students can turn in assignments using blockchain without the fear of misplacement. They can receive their certificates, degrees and diplomas digitally, in a hassle free and organized manner (Castro & Au-Yong-Oliveira, 2021).

The most significant use cases for blockchain are crypto and tokenization. The educators can motivate their students when they perform well or complete a major by rewarding them with cryptocurrencies. Students can be incentivized by their academic institutions to repay their student debts on time. The teaching-learning process can be changed for good by the gamification component of tokenization's teaching methodology (Manini, 2019).

The student tuition payment is a process that involves students, parents, banks, foundations, government agencies, lenders and many university departments. The blockchain can streamline this process, lowering the expenditures and even the tuition rates (Mihus, 2020).

The blockchain technology can provide universal access to open educational resources and can support lifelong learning. The affordable and secured sharing of these resources is enabled by the blockchain. Moreover, the students from all over the world can take courses and pass examinations and be assessed by the educators through the blockchain (Liang & Zhao, 2020).

The Moldovan government can exploit blockchain technology to finance a part of the education process, to empower educators to motivate learners during classroom hours and after school, to allow every student from all over the country to join, contribute and learn.

Given the existing gaps in the Moldovan education, described in the previous paragraphs, the new education platform based on blockchain can provide a gamified learning engine, merit-based incentives for educators (thought token economics), direct teacher interaction, and an immutable proof of records for future employers. The platform can also include 3rd party integration: premium content, employers, advertisers and sponsors using blockchain infrastructure.

From the list of activities and the required amount of financing from other sources, included in the Development Strategy “Education 2030” (see Table 2), five can be funded and implemented with the use of blockchain technology. As a result, they students will get paid tokens to learn, will benefit from engaging learning sessions, will have a credible and personalized record of achievement and will get social feedback from teachers and other students. The teachers will get paid tokens to teach through their personalized credible track record and can gain popularity and recognition. They can also get tokens for pro-bono work with the students. The educational system will be properly

managed at all levels and the corruption will disappear in time. The employers will have the chance to access the candidate's track records and achievements. They will be able to follow the achievements of potential candidates and build specialized training programs for them. The selected advertisers can create brand recognition or implement social campaigns. The sponsors can support financially individual talents or courses for students.

CONCLUSION

This paper is the first that examines the financing of digitization of education in the Republic of Moldova, from the perspective of past actions, the plans included in the Development Strategy “Education 2030”, and the opportunities offered by the blockchain.

The sustainable growth of the economy and the well-being of the Moldovan people must be ensured by a coherent national education system, in which all institutions and organizations, as well as the whole society (family, community, professional groups, mass media), will support the process of training and personality development in various contexts, throughout life.

Improving the functionality and quality of the educational system is possible through the effective implementation of digital technologies to ensure the quality and sustainability of education. The digitalization of education in the Republic of Moldova is possible with significant financial investments not only from the state, but also from other stakeholders, which predetermines the development of new approaches (using blockchain and AI) and tools included in the financial mechanism of the education system.

The limitations of this study represent viable directions for future research. A comparative analysis between Republic of Moldova and other European countries can determine if the blockchain technology is relevant in European context. This paper sets the stage for further research of the implementation of the blockchain technology in education in the Republic Moldova.

REFERENCES

1. Affairs, M. o. E., & Communications. (2014). Digital Agenda 2020 for Estonia. *Ministry of Economic Affairs and Communications*.
2. Bhaskar, P., Tiwari, C. K., & Joshi, A. (2020). Blockchain in education management: present and future applications. *Interactive Technology and Smart Education*.
3. Botezatu, S. (2021). Digital Transformation of Moldova: there is no way back. Retrieved from <https://www.md.undp.org/content/moldova/en/home/blog/2021/transformarea-digital-a-moldovei--nu-mai-e-cale-de-intoarcere.html>
4. Castro, R. Q., & Au-Yong-Oliveira, M. (2021). Blockchain and higher education diplomas. *European Journal of Investigation in Health, Psychology and Education*, 11(1), 154-167.
5. Clasa Viitorului. (2022). About us. Retrieved from <https://www.clasaviitorului.md/despre-noi/>
6. Government of Moldova. (2021). Government objectives in the field of digitalization, discussed with external partners [Press release]. Retrieved from <https://moldova.md/ro/content/internet-de-mare-viteza-si-tehnologii-digitale-pentru-scolile-din-moldova>
7. National Development Strategy 2030, (2020).
8. Jobirovich, Y. M. (2021). The Role Of Digital Technologies In Reform Of The Education System. *The American Journal of Social Science and Education Innovations*, 3(04), 461-465.
9. Liang, X., & Zhao, Q. (2020). *On the design of a blockchain-based student quality assessment system*. Paper presented at the 2020 International Conference on High Performance Big Data and Intelligent Systems (HPBD&IS).
10. Lubis, F. (2019). Education in the disruption era. *Britain International of Linguistics Arts and Education (BIO LAE) Journal*, 1(2), 183-188.
11. Manini, R. (2019). A Case of Cryptocurrency Financed Education: The Ico Of Code of Talent. *Blockchain, bitcoin i criptomonedes: Bases conceptuales i aplicaciones prácticas*, 27, 95.

12. Mihus, I. (2020). The main areas of the blockchain technology using in educational management. *Economics, Finance and Management Review*(4), 84-88.
13. Ministry of Education. (2019). The sectoral strategy of expenditures in the field of education, 2016-2018. Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwil6MervrX6AhW4g_0H_HdgUD7gQFnoECAIQAQ&url=https%3A%2F%2Fmecc.gov.md%2Fsites%2Fdefault%2Ffiles%2Fssc_2016-2018_text_final.docx&usg=AOvVaw1MJccNhDQT0-v4M0ahDzDo
14. Ministry of Education and Research. (2022a). Development Partners. Retrieved from <https://mecc.gov.md/ro/content/parteneri-de-dezvoltare>
15. Ministry of Education and Research. (2022b). The third stage of the National Digital Literacy Program begins [Press release]. Retrieved from <https://mecc.gov.md/ro/content/incepe-cea-de-treia-etapa-programului-national-de-alfabetizare-digitala>
16. Development Strategy “Education 2030”, (2022).
17. National Bureau of Statistics of the Republic of Moldova. (2022a). Activity of the primary and general secondary education institutions, beginning of the academic year 2021/22 Retrieved from <https://statistica.gov.md/newsview.php?l=en&id=7234&idc=168>
18. National Bureau of Statistics of the Republic of Moldova. (2022b). Economic statistics. Retrieved from https://statbank.statistica.md/pxweb/pxweb/en/40%20Statistica%20economica/40%20Statistica%20economica_13%20CNT_SCN2008_CNT010/?rxid=9a62a0d7-86c4-45da-b7e4-fecc26003802%22+class%3d%22link_mail
19. National Bureau of Statistics of the Republic of Moldova. (2022c). General schools and students by types of institution and area, 2000/01-2021/22. Retrieved from https://statbank.statistica.md/PxWeb/pxweb/en/30%20Statistica%20sociala/30%20Statistica%20sociala_07%20INV_INV030/INV030100.px/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774
20. National Bureau of Statistics of the Republic of Moldova. (2022d). Usual resident population in territorial profile at the beginning of 2014-2022 Retrieved from <https://statistica.gov.md/newsview.php?l=en&id=7473&idc=168>
21. National Trade Union Confederation of Moldova. (2022). The problems of young specialists in education, on the agenda of the Trade Union Federation of Education and Science. Retrieved from <http://sindicat.md/problemele-tinerilor-specialisti-din-educatie-pe-agenda-federatiei-sindicale-a-educatiei-si-stiintei/>
22. Onyema, E. M., Eucheria, N. C., Obafemi, F. A., Sen, S., Atonye, F. G., Sharma, A., & Alsayed, A. O. (2020). Impact of Coronavirus pandemic on education. *Journal of Education and Practice*, 11(13), 108-121.
23. Palma, L. M., Vigil, M. A., Pereira, F. L., & Martina, J. E. (2019). Blockchain and smart contracts for higher education registry in Brazil. *International Journal of Network Management*, 29(3), e2061.
24. Ronzhina, N., Kondyurina, I., Voronina, A., Igishev, K., & Loginova, N. (2021). Digitalization of modern education: problems and solutions. *International Journal of Emerging Technologies in Learning (iJET)*, 16(4), 122-135.
25. Shah, D., Patel, D., Adesara, J., Hingu, P., & Shah, M. (2021). Exploiting the capabilities of blockchain and machine learning in education. *Augmented Human Research*, 6(1), 1-14.
26. Tekwill. (2020). *Evaluating existing educational initiatives in the area of ICT in Moldova and development of ICT education strategy*. Retrieved from <https://tekwill.md/reports/moldova-report/>
27. Tekwill. (2022). Tekwill in Every School. Retrieved from <https://tekwill.online/en/course-category/tifs>
28. United Nations Population Fund. (2022). Key results of Republic of Moldova in 2021. Retrieved from <https://www.unfpa.org/data/transparency-portal/unfpa-moldova-republic>
29. Van Laar, E., Van Deursen, A. J., Van Dijk, J. A., & De Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in Human Behavior*, 72, 577-588.
30. Weller, M. (2018). Twenty years of Edtech. *Educause Review Online*, 53(4), 34-48.
31. Wells, G. E., & Claxton, G. E. (2002). *Learning for life in the 21st century: Sociocultural perspectives on the future of education*: Blackwell Publishing.

CZU: [347.232:351.7]+[346.544.6:343.352]

DOI: <https://doi.org/10.53486/dri2022.15>

THE ROLE AND INTEGRITY OF SUBJECTS IN THE PUBLIC PROCUREMENT SYSTEM IN THE PREVENTION OF CORRUPTION

GALAMAGA DORINA²²

Abstract: *The field of public procurement is one of the most vulnerable to corruption, and ensuring the integrity of subjects involved in public procurement constitutes a current approach to corruption prevention and research. Strengthening the integrity of public procurement subjects is an essential measure to prevent corruption, because public procurement is one of the key areas in which the public sector and the private sector interact financially. However, this interaction is based on public money, which attracts the corrupt subjects to illegal activities, due to the position they hold, they take advantage of public funds in personal interest or of a group at the expense of the general interest. Specifically, this paper researches the general conceptions of public procurement and integrity, the national normative framework regarding integrity in public procurement, identifies and analyzes the categories of subjects, their role, the causes and consequences of non-compliance with integrity in the public procurement system. In conclusion, it is deduced that the lack of integrity of subjects in the public procurement system generates not only deficient policies, norms and procedures, but endangers public respect for the government, erodes the rule of law, distorts the economy of a country and seriously affects the fundamental rights of citizens.*

Key words: *public procurement, the integrity of the subjects, prevention of corruption, corruption risks.*

JEL CLASSIFICATION: D73

INTRODUCTION

The challenges addressed and the importance of the issue analyzed lies in the fact that public procurement is one of the means of evading public funds. Fraud is only done by unscrupulous and unprofessional actors. Although, public integrity, including in the public procurement system, must be a principle and an essential condition in order to ensure good governance, the non-compliance with this principle generates manifestations of corruption in the public procurement system. It is noted that the antonym of „integrity” is „corruption”, which is supported by corrupt subjects and tempted by various illegal schemes, flawed norms and manifestations of corruption to harm public funds for personal or group interest.

The purpose of the paper is to study the subjects of public procurement, as well as the consequences in case of failure to ensure integrity when performing their duties. To achieve this goal, the following tasks were established: 1) analyzing scientific opinions in the field of integrity in public procurement; 2) evaluation of the national regulatory framework regarding public procurement and integrity; 3) classification of subjects in the public procurement system through the lens of role and ensuring integrity.

²² Ph.D Student, email: dorina.galamaga@gmail.com
ORCID: 0000-0002-9207-6277

The paper refers to the need to ensure integrity in public procurement by all actors directly or indirectly involved in the public procurement process by evaluating the national regulatory framework and improving measures to prevent corruption in public procurement.

Research methodology. The study is based on a careful analysis by enumerating all the subjects that are part of the public procurement system, including the importance and role of each in the public procurement system in the context of the evolution of the scientific thought and practice of public procurement. The scientific literature expresses few opinions regarding integrity in public procurement, thus finding limited research in the field of professional or institutional integrity in public procurement. The identification of specialized literature was mostly carried out by exploring data sources and documents in the Google Scholar and Academia.edu search engine, using the keywords „integrity” and „public procurement” in the query. Also, the provisions of the Integrity Law, no. 82/2017 [14] and the Law on Public Procurement, no. 131/2015, were analyzed as part of the investigation. [12] The main research methods were: analysis, scientific knowledge, deduction, synthesis and generalization.

GENERAL CONCEPTS OF PUBLIC PROCUREMENT AND INTEGRITY

The public procurement system is an important instrument of the state. According to the authors Florescu D. and Coman L. „The public procurement system represents a part of the competitive commercial reality in Romanian society”. [7, page 11] In the opinion of other authors (Orlov M and Buşmachiu E.), the public procurement system represents all the rules and actions related to spending public money in order to satisfy a public interest.” [17, page 16] In this context, we support the opinion of the authors, noting that this instrument aims at the legal, transparent, fair, non-discriminatory and efficient use of public money.

Referring initially to the notion of „public procurement”, several doctrinal opinions stand out. The notion rendered by Dumitru I., it is mentioned that „public procurement” signifies, in a broad sense, that regulated field of activity within which public authorities and organizations financed in whole or in part from the public budget have the opportunity to acquire goods, services, works or combinations thereof. [6, page 15]

According to the author Nica E. „the process of obtaining products, services or works by an entity, hereinafter referred to as the contracting authority, in accordance with the legislation in force is called public procurement”. The same author believes that „public procurement includes any activity that has a purpose and is meant to respond to a need, a requirement in the public sector and that involves spending public money from the state budget.” [16, page 61]

In the opinion of other authors (Florescu D. and Coman L.), „the field of activity of public procurement is the supply of goods, works and services by entities that offer sums of money from national, European or national and European public funds in return”. [7, page 11]

Therefore, the authors Alexe I. and Şandru D.-M., reveal that the field of public procurement is very important and allows both the transformation and development of society and its functioning mechanisms, as well as the efficient use of public funds, as well as transparency and maintenance markets open to free competition throughout the European Union. [1, page 9]

The OECD points out in the Principles for Integrity in Public Procurement that „poor governance in public procurement blocks competition in the market and increases the price paid by an administration for goods and services, which has a direct impact on public expenditure and

therefore on resources taxpayers. The financial interests involved and the close interaction between the public and private sectors make public procurement an area of major risk. [...]”. [18]

In our opinion, a generic definition of public procurement is the procurement from public money according to the rigors established by law, by a public person defined as a contracting authority, of some products, works or services, by awarding a public procurement contract.

It is concluded, the basic component in public procurement is public money, which determines that the entire public procurement system is vulnerable to corruption. Thus, taking into account that in the management of public money within a public authority, several subjects are involved, and in case of non-compliance with measures to ensure integrity, there is a high probability of the materialization of the risks of fraud and corruption.

In another vein, it is highlighted that in public procurement the term „corruption” is more often used than the term „integrity”, this also results from the multitude of researches in this field. The term „integrity” is used as an antonym for corruption. However, integrity does not only mean the absence of corruption, but implies the improvement of communication and transparency of the public decision-making process, in order not to create the suspicion that the private interest takes precedence over the public interest. [20, page 8]

In another order of ideas, public integrity presupposes the cumulative fulfillment of three conditions:

- the incorruptibility of the decision regardless of its beneficiary;
- compliance with the principles of transparency and competitiveness;
- good administration in the sense of economy, effectiveness and efficiency. [10, page 9]

For a clear understanding of the approaches related to both „fighting corruption” and „ensuring public integrity”, the following points are stated. By the phrase „the fight against corruption” is understood the punitive nature of sanctioning (contraventional or criminal) manifestations of corruption that were admitted in the past. But, „integrity assurance” implies the identification and analysis of corruption risks and the factors that generate them in order to improve the activity in the future within an institution or system. Thus, it is noted that these approaches have opposite connotations, one negative for actions consumed and the other positive for future actions, but they pursue the same ultimate goal of „fighting corruption”, because even if ensuring integrity is a means of preventing corruption, in the case of non-respect of integrity in the public procurement process, anti-corruption methods are applied.

In this research, a positive approach is chosen in order to strengthen the professional integrity of the subjects in the public procurement system, to identify and analyze the individual and institutional risk factors specific to the public procurement system in our country, offering recommendations to eradicate or reduce the risks of fraud and corruption.

NATIONAL LEGAL REGULATION REGARDING INTEGRITY AND PUBLIC PROCUREMENT

In the Republic of Moldova, the legal definition of the concept of „public procurement” has been evaluated during several stages, depending on the adoption of the primary framework in this field. Thus, from the chronological and evolutionary analysis of the legal definition of „public procurement”, 4 cycles of improvement of the public procurement system in the Republic of Moldova are determined.

I stage - (1997) the first regulation in the field of public procurement is established by the Law on the purchase of goods, works and services for the needs of the state, no. 1166/30.04.97, which states that: „public procurement represents the procurement of goods, works and services for the needs of the state with public money in any way not prohibited by law”;

II stage – (2007) the Law on public procurement, no. 96/13.04.2007, is adopted, which defines that „public procurement is procurement of goods, execution of works or provision of services for the needs of one or several contracting authorities”;

III stage - (2015) through the adoption of the Law on public procurement, no. 131/2015, the same wording is maintained, in general terms „public procurement - procurement of goods, execution of works or provision of services for the needs of one or more contracting authorities”;

IV stage - (2018) by the Law amending Law no. 131/2015 on public procurement, no. 169 of 26.07.2018, is defined in a new wording as „public procurement - the procurement, through a public procurement contract, of goods, works or services by one or more contracting authorities from the economic operators selected by them, regardless of whether the goods, works or services are intended for a public purpose or not”.

Thus, it is concluded that the public procurement system in Republic of Moldova is a system regulated by Law no. 131/2015 on public procurement, the primary legislative act that represents the transposition into national law of European Directives 2014/24/CE and 89/665/CCE. At the same time, we note that the primary national normative framework in is harmonized with the community acquis, in accordance with the commitments that the Republic of Moldova has and assumed towards the European Union with the ratification of the Association Agreement between Republic of Moldova, on the one hand, and European Union, and European Atomic Energy Community and their member states, on the other hand, by Law nr. 112 of July 2, 2014. According to art. 273, paragraph (1) of the mentioned Agreement, the Republic of Moldova committed to ensure that its current and future legislation in the field of public procurement will progressively become compatible with the acquis of the European Union in the field of public procurement.

In this sense, it is noted that, although the national legislation is harmonized with the best European practices, corruption in our country perpetuates, including in public procurement. According to the Corruption Perception Index made by Transparency International, for the year 2021, the Republic of Moldova registered a CPI score of 36 points, ranking 105 out of 180 countries (for comparison, in 2020, Moldova, with a score of 34 points, was ranked 115 out of 180 countries). Although the Republic of Moldova surpassed 10 countries in the ranking of the Corruption Perception Index during the past year, it continues to be in the list of countries with a high level of corruption.

Therefore, analyzing the primary normative framework in public procurement, rules are established to ensure the implementation of anti-corruption and integrity policies in the event of manifestations of corruption in public procurement, such as:

- exclusion by the contracting authority from the public procurement contract award procedure of any tenderer or candidate of whom it is aware that, in the last 5 years, it has been convicted, by the final decision of a court, for participating in the activities of an organization or criminal groups, for corruption, fraud and/or money laundering (art. 18);
- rejection by the contracting authority of the offer in case it finds that the economic operator who presented it proposes or consents to propose, directly or indirectly, any person with a position of responsibility or any employee of the contracting authority a favor in any form, a employment offer or any other service as a reward for certain actions, decisions or the

application of a public procurement procedure to his advantage. (4) Public procurement contracts obtained through corruption, confirmed by the final decision of the court, are null and void. (art. 40);

- non-acceptance of the offer by the contracting authority in the event that acts of corruption were found to have been committed (art. 65);
- the contracting authority will cancel the public procurement procedure if an act of corruption has been committed, confirmed by the final decision of the court (art. 67);
- rules for avoiding conflict of interests (art. 74). [12]

Analyzing the recorded norms, some deficiencies are deduced:

- the public entity responsible for detecting the act of corruption is uncertain, the contracting authority/procurement working group is not authorized to detect such crimes, only the court has this right;
- it is not clear when the corruption acts were detected, in the case of other procurement procedures or during the examination of the offers submitted to the ongoing procedure. In this last case, the time/period of the detection of the act of corruption in the course of a public procurement procedure is ambiguous, because the investigation and detection of acts of corruption can last for years, and the contracting authority cannot suspend the development of the procurement procedure public;
- the use of the phrase „acts of corruption” is incomplete, because the lack of integrity in the public and private sectors leads to the commission of illegalities not only of acts of corruption, but also of acts related to acts of corruption and corruptible acts. [21] Thus, it is established that the deficiencies of the normative framework can generate duties that admit derogations and abusive interpretations, which can admit risks of corruption, such as: influence peddling, abuse of office, embezzlement of funds, exceeding of duties, favoritism and conflict of interests.

SUBJECTS OF THE PUBLIC PROCUREMENT SYSTEM

Through the phrase „integrity in public procurement” means the integrity of the people and public authorities involved in public procurement, as well as the integrity of the public procurement process. It is mentioned that these three components are interdependent, and the subject – the natural/legal person is the key element in ensuring the integrity and efficiency of public procurement.

In the specialized literature, there are several classifications of the subjects of the public procurement system, such as: the authors Dumitru A.P. Florescu and Coman L., reveal that the components of the public procurement system are: 1) the regulatory authority; 2) contracting authorities; 3) economic operators; 4) system supervisors; 5) financial auditors of the system. [7, page 11]

The authors Orlov M. and Buşmachiu E. mention the components of the public procurement system, such as: 1) regulatory authority; 2) contracting authorities; 3) economic operators; 4) system supervisors. Furthermore, these authors classify and describe the duties and responsibilities of the institutions of the public procurement system, which include: 1) the Ministry of Finance through the Public Procurement Agency, and the Directorate of National Economy Finances, Capital Expenditures and Public Procurement; 2) Financial Control and Review Service; 3) Book of Accounts; 4) State Treasury.

Although the risks of corruption in public procurement can manifest themselves at different stages of public procurement, starting with the initiation of the procurement procedure and up to the

awarding of the public procurement contract, corruption risks can also be admitted at the establishment of the normative framework, as well as in the monitoring process and control of public procurement.

In this context, the author classified the subjects of the public procurement system through the lens of their roles, including through the lens of ensuring integrity in public procurement, presenting them schematically in *Table 1*.

Table.1 Subjects of the public procurement system in Republic of Moldova

Categories	Subjects
1. Regulatory authorities	<ul style="list-style-type: none"> - <i>Parliament</i> - <i>The Government</i> - <i>The Ministry of Finance</i>
2. Participants in the public procurement process	<p>Principals:</p> <ul style="list-style-type: none"> - <i>Contracting authorities (working group)</i> - <i>Economic operators</i> <p>Facultative:</p> <ul style="list-style-type: none"> - <i>Service providers;</i> - <i>Certified specialists in public procurement</i> - <i>Recruited specialists and experts</i>
3. Supervisors of the public procurement system	<ul style="list-style-type: none"> - <i>The Ministry of Finance</i> - <i>The Public Procurement Agency</i> - <i>The National Agency for the Resolution of Appeals</i>
4. Subjects of monitoring and control of public procurement and public integrity	<ul style="list-style-type: none"> - <i>Financial Inspection</i> - <i>State Treasury</i> - <i>Court of Auditors</i> - <i>National Integrity Authority</i> - <i>National Anticorruption Center</i> - <i>Ministry of Internal Affairs (Internal Protection Service)</i> - <i>Anticorruption Prosecutor's Office</i> - <i>Non-governmental organizations</i>

Source: Prepared by the author

The role of regulatory authorities – Parliament, the Government and the Ministry of Finance are public authorities that have the role of developing and adopting/approving the regulatory framework in the field of public procurement. We consider that the role of these authorities is a primary one, because they are the „architects” of the public procurement system in our country, and the applicability and consistency of the rules is the fundamental criterion in the efficient running of public procurement procedures. Through the elaboration and adoption of policies and normative acts in this field, it can be deduced about the quality, integrity and interest pursued by the politician who promotes reforms in this system.

Another aspect is highlighted in the case of the „inaction” of the regulatory authorities, i.e. the lack of exercise of the powers established by the normative acts. The lack of establishment of regulations by the subjects responsible for promoting and approving the rules that would eliminate legal impediments and loopholes in public procurement. For example: Lack of approval of the normative act on procurement service providers. In this sense, it is mentioned that according to Art.

II of Law nr.169/2018, the Government, within 6 months from the date of publication of this law (published in the Official Gazette of the Republic of Moldova on 24.08.2018), should ensure the development and the approval of the normative acts provided by this law. Thus, it is established that this normative act has not been approved until now, a fact that generates suspicions regarding the necessity, relevance and interest for this category of subjects attributed to the public procurement system in our country.

Therefore, it is determined that the insufficient, inconsistent, lacunae, ambiguous and/or discretionary regulations of the regulatory framework are the external risk factors that generate corruption risks in the public procurement system. We believe that external risk factors are some of the most essential factors that contribute to distorting the public procurement process. In order to reduce and eliminate the corruption risks generated by these factors, it is necessary to identify, describe and thoroughly analyze the regulatory framework in the field of public procurement and come up with timely regulations to make the national public procurement system more efficient. The author analyzed in more detail external risk factors and corruption risks in public procurement. [8] It is concluded that in order to have a harmonized regulatory framework, adjusted to the best practices, coherent, simple, transparent and opposable to all interested subjects, it is necessary for the regulations to be promoted and approved by honest and professional subjects, in which the public interest receives personal or group interests.

The role of the subjects of the public procurement process. Contracting authorities and economic operators are the main actors of the public procurement process.

Articles 13 and 14 of the Law on public procurement no. 131/2015 establish primary regulations regarding the role and activity of the contracting authority, including the working group for public procurement. At the same time, the existence of the secondary normative framework is highlighted, the Regulation on the activity of the working group in the field of public procurement, approved by Government Decision no. 10/20.01.2021. Thus, in general, the existence of the relevant regulatory framework for the creation of the working group in the field of public procurement, which initiates and carries out procedures for awarding the public procurement contract to satisfy the needs of the contracting authority, is attested.

Therefore, from the analysis of the duties established in the legislation, the important role in the public procurement process of the working group for public procurement is justified. At the same time, through the lens of the measures to ensure the integrity of the subjects involved in the working group, the following provisions regarding the integrity assurance are determined.

One of the measures to ensure integrity is the transparent and responsible management of public patrimony, repayable and non-repayable finances, stipulated in art. 22 of the Integrity Law no. 82/2017. In the content of this article, in paragraph (4), the provisions relating to the Working Group for public procurement are highlighted, which is obliged to ensure the efficiency of public procurement, objectivity and impartiality in public procurement procedures, publicity and transparency of public procurement procedures. Thus, these are generally mandatory norms, which can be found both in the principles governing relations regarding public procurement, and the entire regulatory framework regarding public procurement.

Another measure to ensure integrity, which deserves a more detailed analysis, is compliance with the legal regime of conflicts of interest, provided for in art. 14 of the Integrity Law, no. 82/2017. In this paper, the following research topic on conflicts of interest in public procurement is outlined. Thus, corroborating and evaluating the legislation in the field of integrity and public procurement

regarding conflicts of interest, an inconsistency is attested regarding the uniform application of the legislation regarding compliance with the legal regime of conflicts of interest.

Conflicts of interest reflect a situation in which public officials act or intend to act or give the impression that they act in personal interest. Therefore, the issue of conflicts of interest is part of the scope of anti-corruption instruments and review mechanisms, including those provided by the United Nations Convention against Corruption (UNCAC), GRECO and OECD.

Regarding the regulations of the Integrity Law, it is revealed that public agents, together with the head of the public entity and, as the case may be, with the National Integrity Authority, are obliged to identify and deal with conflicts of interest that arise in their professional activity within the terms and manner provided by Law no. 133/2016 regarding the declaration of wealth and personal interests. In the sense of this law, it is highlighted that when making public purchases from public funds, not all members of the working group are public agents and who are subjects in the sense of Law no. 133/2016. Thus, the existence of a category of subjects within the contracting authorities is certified, being the members of the working group for public procurement, but which do not meet the conditions of art.3 regarding the subjects of the declaration of wealth and personal interests. These legislative non-conformities distort the instrument of imposing compliance with the regime of conflicts of interest by all members of the working group for public procurement.

Also, regarding art. 79 of the Law on public procurement, no. 131/2015, it is revealed that its provisions state the rules for avoiding the conflict of interests during the application of the public procurement procedure. At the same time, mentioning the obligation of each member of the group of work to sign, on his own responsibility, a declaration of confidentiality and impartiality, by which he undertakes to unconditionally comply with the provisions in the field of public procurement. But, in this sense, it is concluded that the signing of the Declarations of confidentiality and impartiality is a declarative process, which does not produce any legal effect, because there is no instrument to verify the impartiality of the subjects involved in the public procurement process.

As a result, it is noted that failure to implement the measures leads to: compromising the climate of institutional integrity and integrity in public procurement; at the appearance of manifestations of corruption; affecting the public interest and triggers the initiation of integrity control measures in the public sector by the responsible anti-corruption authorities or other authorities with specific powers.

As far as the economic operator is concerned, it is understood any natural or legal person, any public entity or association of these persons and/or entities that supply goods, perform works and/or provide services on the market. According to art. 15 of the Law on public procurement, no. 131/2015 „Any economic operator, resident or non-resident, natural or legal person under public or private law or group of such persons, has the right to participate, under the conditions of this law , to the procedure for awarding the public procurement contract”. Analyzing the legislation in the field of public procurement, a series of conditions, requirements, qualifications imposed on economic operators in order to qualify in public procurement procedures is found. Corruption risks are manifested when economic operators cannot meet the imposed requirements and try to corrupt the members of the work group by various means. Corrupt actions can be admitted at all stages of the public procurement procedure. In this context, national legislation contains few regulations regarding the obligation to ensure integrity by the private sector. Concretely, art. 37 of the Integrity Law, no. 82/2017 establishes rules regarding measures to ensure integrity in the private sector in relations with the public sector. In the content of this article, measures specific to the private sector to ensure integrity are listed. At the

same time, it is indicated that the responsibility for cultivating the climate of integrity of the business environment rests with the administration of commercial organizations. If the measures provided for by law are not carried out, it may lead to the compromising of the climate of integrity in the private sector and, as the case may be, in the public sector, to the appearance of corruption and to the damage of the public interest. In this sense, it is deduced that the control of integrity by the competent bodies is carried out only on the public sector, and the lack of a control in the private sector by the competent bodies can compromise the effective implementation of the measures to ensure integrity.

Considering the particularities of the duties of each subject participating in public procurement and the risks of corruption that are generated, it is necessary to clearly establish the measures to prevent corruption. The delimitation is made between the measures intended for public authorities and the measures applicable to bidders. Thus, among the measures intended for public authorities, the following can be mentioned: the establishment of clear rules for the awarding procedures of public procurement contracts; unitary interpretations of legislation; the development of codes of conduct in the conduct of award procedures; improving the transparency of the process; clear separation of duties; the permanent carrying out of training activities for the personnel involved in the performance of the awarding procedure.

Regarding the preventive measures applicable to bidders, the following can be mentioned: the development of codes of conduct, the highlighting of criminal and contraventional sanctions; the operation of the mechanism of inclusion in the Prohibition List to exclude from award procedures for a period of 3 years; the operation of the penalty payment mechanism for repairing the damage caused to the contracting authority.

Regarding the optional subjects of the public procurement process: procurement service providers, certified persons, experts in public procurement, it is certified that this category of subjects is introduced by the latest amendments to the Public Procurement Law (Law no. 169/2018). As part of the promotion of this project, the National Anticorruption Center within the expertise of this project [21] signaled some normative deficiencies, identifying the risk factors and risks of corruption. We point out in the project the establishment of several subjects involved in the public procurement process without clearly establishing their status, limits of competence, responsibilities and liability (providers of procurement services, certified persons, experts in procurement, authorized persons). Examining the project, general provisions are found that are not clearly established and when evaluating it, it is difficult to determine in the legislation provisions regarding their responsibilities and liability, because the limits of competence in the public procurement activity are not clearly established.

In the clear absence of responsibilities, liability and sanctions for violating the provisions of the project by the legal entities responsible for organizing public procurement procedures, there is a risk that they will become aware of their impunity for the abuses committed in the process of applying the legislation in the field of public procurement, which will perpetuate the abuses in question.

Thus, the insufficient formulation, the lack of responsibilities and sanctions for the violation of the provisions of the project by public and private agents, may favor the encouragement or facilitation of acts of corruption, acts related to acts of corruption and corruptible acts, making it impossible to hold these persons accountable for overcoming service attributions/service abuses, because the wording of the rule allows interpretation discretions that go beyond the legal framework. [21] We still support these findings, they are relevant to date, because no rules have been established to bring clarity about the clear role of these optional subjects, participants in the public procurement process.

The role of public procurement system supervisors

The Ministry of Finance - is the central specialized body of the public administration that ensures the implementation of government policy in the field of public procurement. At the level of the Ministry of Finance, responsible for the development and promotion of the legislative and normative framework that regulates the field of public procurement is the Policy Service for the regulation of public procurement. *The Public Procurement Agency* - is an administrative authority subordinate to the Ministry of Finance, established for the purpose of strengthening the capacities of the contracting authorities and developing the skills of the business environment in the field of public procurement, in order to monitor the compliance of public procurement procedures, as well as to carry out the analysis of the public procurement system (art. 9 and 10 of Law no. 131/2015). *The National Agency for the Resolution of Appeals* - is an autonomous public authority and independent from other public authorities, from natural and legal persons, which examines the appeals made in public procurement procedures. At the same time, having the obligation to defend the rights and legitimate interests of all parties involved in the appeals sent for resolution without any privilege or discrimination (art. 80 of Law no. 131/2015)

Regarding compliance with the measures to ensure integrity, stipulated in art. 10-24 of the Integrity Law, it is mentioned that all public agents within these public authorities are obliged to comply with them.

We can mention that in our country, in recent years, the organization and operation of public entities intended to supervise and improve the public procurement system, has been subject to several reorganizations and changes in competence, which led to changes in the organization of the public procurement system in the Republic of Moldova. On the one hand, the stated purpose of these reorganizations was to strengthen the public procurement system, but in reality these subjects face several deficiencies, such as: insufficient development of the electronic public procurement system (non-application of all types of procedures) ; non-approval of normative acts that would lead to the resolution of normative gaps (Regulation on the certification of public procurement specialists); non-establishment of the mechanism for the application of sustainable procurement; insufficient number of staff specialized in public procurement; non-application of the certification instrument, etc.

The detailed analysis of ***the subjects responsible for the monitoring, supervision and control of public integrity and public procurement*** is to be studied and presented in another scientific event.

Taking into account that the field of public procurement is a complex one, qualified knowledge and a special training of the subjects involved in public procurement are necessary, because the lack of knowledge and professionalism in this field, also contributes to diminishing the integrity of the people involved, directly or indirectly , in this system.

According to art. 11 of the Integrity Law, no. 82/2017, it is established that within the public entity employment must be carried out according to transparent and objective selection criteria based on merit, professional qualification, capacity, competence and professional integrity, without admits the favoring of private interests. These requirements are included in the measure of ensuring integrity in the public system.

As a result of the evaluation of the public procurement system in Moldova, in 2021 by the World Bank [2], it is revealed that in the public sector in Moldova, the public procurement officer is not considered as a profession, is not defined and is not included in the nomenclature/ the official register of civil servant positions. In practice, this causes a low technical capacity of the contracting authorities, in which purchases are made by officials such as accountants, lawyers, etc. The high

number of civil servants without the necessary skills and knowledge is a major problem and leads to poor and ineffective procurement planning, low-quality technical specifications and tender documents and insufficient monitoring of the execution of public procurement contracts.

It is highlighted that in accordance with art. 10 letter e) of the Law on public procurement no. 131/2015, only the Public Procurement Agency has the authority to elaborate, develop and implement the certification mechanisms of persons from contracting authorities and suppliers of procurement services, responsible for organizing, conducting public procurement procedures and awarding public procurement contracts. However, until this moment, this mechanism has not been implemented, although a Regulation on certification in the field of public procurement was approved by the Public Procurement Agency (Order no. 46 of 312.12.2020), this act was withdrawn as a result of the Public Appeal regarding the condemnation by civil society representatives of the said Regulation, because it was approved without being subject to public consultations, while several deficiencies were also detected.

Thus, it is established that in the Republic of Moldova, there is no public entity that prepares and certifies specialists in public procurement, a fact that can generate a major risk factor in the development of public procurement and ensuring integrity in this field.

CONCLUSION

In conclusion, we can mention that the lack of integrity of the subjects, regardless of their role, endangers the efficiency, effectiveness and economy of public procurement. The existence of a deficient normative framework regarding the provision of integrity measures in public procurement and non-applicable instruments by subjects involved in public procurement, compromises the development of the procurement system. At the same time, it is deduced that regardless of the status of the subject involved in public procurement, the risks of fraud and corruption in the public procurement system can be admitted not only within the public procurement process, but manifestations of corruption can be admitted when establishing the normative framework, as well as in the monitoring and control process of public procurement.

Body of the conclusion In conclusion, we can mention that the lack of integrity of subjects, regardless of their role, endangers the efficiency, effectiveness and economy of public access. The existence of a deficient regulatory framework regarding the provision of integrity measures and non-applicable instruments by subjects involved in public ones can compromise the development of the operating system. At the same time, it is deduced that regardless of the status of the subject involved in public activities, the risks of fraud and corruption in the public service system can be admitted not only within each stage of the public service process, but manifestations of corruption can be admitted when establishing the normative framework, as well as in the monitoring and control process of public activities.

Thus, the lack of integrity of subjects in the public procurement system not only defrauds public funds, but diminishes public respect for the government, erodes the rule of law and distorts the economy of a country. However, the consequences of a public procurement of poor quality, expensive, not adapted to real needs, is borne by the citizens. The consequences are negative and diverse, which directly harm the fundamental rights of citizens, namely: the right to information (art. 34), the right to health protection (art. 36), the right to education (art. 35) and the right to a healthy environment (art. 37), rights enshrined in the Constitution of the Republic of Moldova.

In order to strengthen integrity in the national public procurement system, it is necessary to implement the most feasible and effective integrity assurance measures, thoroughly analyzing good

practices. In this context, Good practices regarding the public procurement process were mentioned in the first EU anti-corruption report issued in February 2014. The report notes that Germany has had positive results not only in prosecuting corruption cases, but also in taking preventive measures regarding public procurement at the level of cities and municipalities, especially in the field of construction, one of the most vulnerable to corruption. These measures include: awareness raising; establishment of codes of conduct; staff turnover; clear regulations on sponsorship and prohibition of accepting gifts, establishment of central authorities for bidding/awarding procedures; increased use of e-procurement, blacklisting/corruption registers and other similar measures. Italy has made progress in establishing public procurement and resource management platforms. Slovenia and Croatia have created electronic databases designed to eliminate corruption in public procurement contracts by tracking the money. [3]

REFERENCES:

1. ALEXE Irina, ȘANDRU Daniel-Mihail (Editors), *Public Procurement Legislation in Romania*, Bucharest, University Publishing House, 2018, ISBN978-606-28-0701-6;
2. World Bank, Evaluation of the public procurement system in Moldova, 2021, Volume I and II;
3. European Commission, (2014) Report from the Commission to the Council and the European Parliament. EU anti-corruption report. https://eur-lex.europa.eu/resource.html?uri=cellar:058aecf0-d9b7-11e3-8cd4-01aa75ed71a1.0005.01/DOC_1&format=PDF;
4. Constitution of the Republic of Moldova, no. 1 of 29.07.1994;
5. The United Nations Convention against Corruption (art. 9), adopted in New York on October 31, 2003. The Republic of Moldova acceded through Law no. 158-XVI of July 6, 2007. Official Gazette no. 103106 of July 20, 2007;
6. DUMITRU, Ilie *Elements of public procurement law*, Bucharest: ASE Publishing House, 2019 ISBN 978-606-34-0301-934;
7. FLORESCU Dumitru A.P., COMAN Lucica, *Public Procurement. Regulation, attribution, financial audit, jurisprudence*, Bucharest, S.C. Publishing House. Universul Juridic SRL, 2013, ISBN 978-606-673-017-4;
8. Galamaga Dorina *External risk factors and corruption risks in public procurement*, International Science Journal – Actual scientific research in the modern world, 2022, ISSN 2524-0986, p.203-209;
9. Guide regarding the protection of whistleblowers, Romanian Association for Transparency, Bucharest, 2005;
10. Law on the purchase of goods, works and services for the needs of the state, no. 1166 of 30.04.97, Monitorul Oficial al R. Moldova, 67-68/551, 16.10.1997;
11. Law on public procurement, no. 96 of 13.04.2007, Official Gazette of the Republic of Moldova, 107-111/470, 27.07.2007;
12. Law on public procurement no. 131 of 03.07.2015, Official Gazette, 2015, no. 197-205 art. 402;
13. Law amending Law no. 131/2015 on public procurement no. 169 of 26.07.2018, In: Monitorul Oficial, 2018, no. 321-332 art. 527;
14. Integrity Law no. 82 of 25.05.2017, In: Official Gazette No. 229-243 art. 360;
15. Law on the evaluation of institutional integrity no. 325 of 23.12.2013, In: Monitorul Oficial No. 277-287 art. 586;
16. NICA Elvira *Public procurement management*, Bucharest, Economic Publishing House, 2012, ISBN 978-973-709-642-5;
17. Orlov Maria, Bușmachi Eugenia *Guide for Local Public Authorities „Public Procurement”*, 2015, Chisinau;
18. OECD Principles for Integrity in Public Procurement <http://www.oecd.org/gov/ethics/48994520.pdf>
19. The Road to Integrity publication, Bucharest, 2010 https://www.academia.edu/36906990/Drumul_spre_integritate ;
20. Report on the activity in the field of public procurement carried out during 2021, developed and published by the Public Procurement Agency. https://tender.gov.md/sites/default/files/document/attachments/raport_aap_2021.pdf.
21. Anti-corruption expert report No. ELO18/5107 of 11.06.2018 to the draft law for the amendment and completion of Law no. 131 of 03 July 2015 regarding the public procurement of the National Anticorruption Center. https://cna.md/report_view.php?l=ro&id=5355 .

CZU: 628.932.3:[628.979+628.98]

DOI: <https://doi.org/10.53486/dri2022.16>

THE ENERGY SAVING AND COMFORT RATIO OF SMART LIGHTING

CATRUC ADRIANA ²³

Abstract: *Office buildings, particularly workplaces, are not designed to suit individual indoor comfort needs. Providing comfort in these structures is difficult without sacrificing energy efficiency. This essay includes a thorough literature review addressing comprehensive study subjects on smart lighting, such as problems, goals for implementation, prospects, and technological solutions.*

Key words: *LED bulbs, Fuzzy algorithm, AC power, Machine learning*

JEL CLASSIFICATION: Q4, O3

INTRODUCTION

Labour productivity and human quality of life are significantly influenced by lighting. Acosta et al. (2018) indicate that artificial lighting allows individuals to operate in enclosed spaces like homes, offices, and factories without natural light while extending the workday. Products for the invention of smart lighting are already available. One example of an intelligent lighting solution is an Internet-connected Wi-Fi bulb. This lightbulb links to a smartphone app that can be downloaded and a smart home hub like Amazon Alexa or Google Nest. One may use the app or Amazon Alexa to use voice commands to turn on or off the bulbs. The product also has controls for dimming the lighting and altering the lamp's color (Soheilian et al., 2021). The application provides functions like scheduling the on- and off-times of the lights. Energy conservation is the primary focus of research on intelligent lighting. A significant part of energy usage from lighting systems is the root of the problem. Energy savings are possible with intelligent lighting thanks to several tactical possibilities, one of which is applying smart sources to the lighting control.

LIGHTING CONTROLS

A lighting management system can reduce lighting energy use as well. The designs range from the simplest and most common switches on the board to an advanced computer monitoring system that oversees an entire building. Occupancy and daylight sensing have improved thanks to industry-driven innovation, rendering them even more efficient and inexpensive (Soheilian et al., 2021). The best lighting efficiency in a building is achieved when an energy-efficient lighting management system is used in conjunction with energy-efficient bulbs and luminaires. Additional 20 to 40 percent energy savings are possible with lighting control systems (Acosta et al., 2018). They continuously monitor usage and ambient light levels, only turning on the lights when necessary. With

²³ Ph.D Student, email: catrucadriana@gmail.com
ORCID: 0000-0002-9024-8620

several benefits over fluorescent lamps and incandescent bulbs, LED bulbs are the most excellent option for use in energy-efficient lighting systems.

Nowadays, LED bulb solution has advanced and offers light bulbs that may be utilized in various situations. Additionally, this kind of light bulb has non-dimmable and dimmable alternatives, opening up the possibility for intelligent lighting systems' use (Soheilian et al., 2021). LED bulbs don't contain any mercury and are pretty durable. The light intensity can be changed with an AC light adjuster by dimming the lamp's lightbulb. However, when a variable resistor is utilized to alter the brightness of a lamp, resistance turns some of the energy into waste heat. The schematic view for the intelligent control system for lighting using the component mentioned above is shown in Figures 1, 2, and 3.

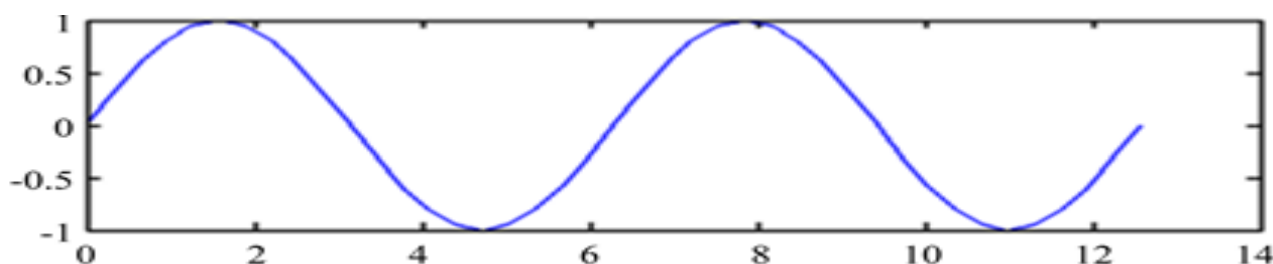


Figure 1: AC Power

Source: (Acosta et al., 2018)

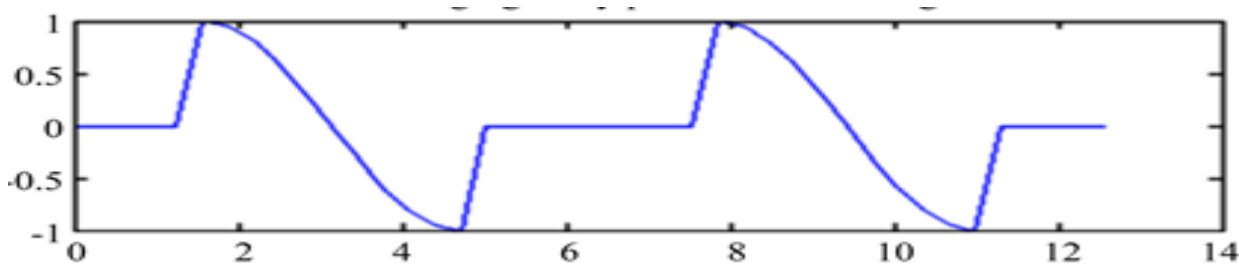


Figure 2: Diminishing Lights by Periodic Switching

Source: (Acosta et al., 2018)

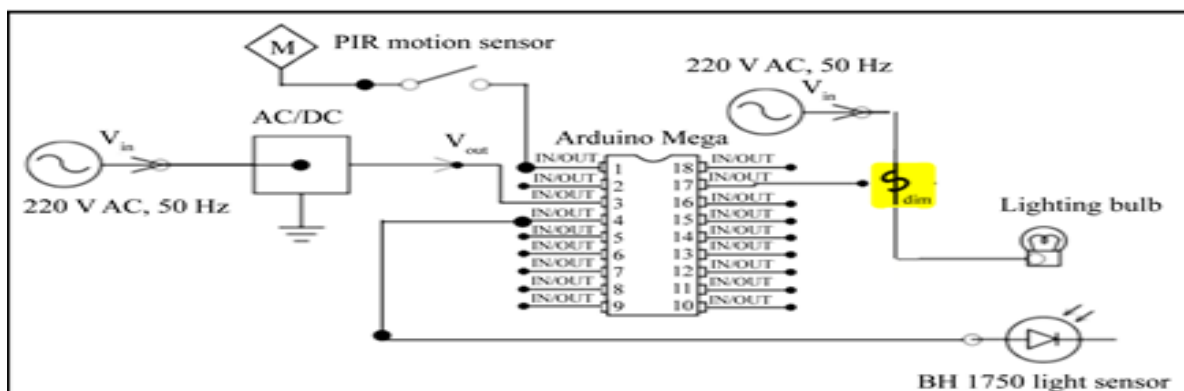


Figure 3: AC Dimmer Smart Lighting Control System

Source: (De Bakker et al., 2018)

FUZZY LOGIC CONTROLLER

Systems for controlling interior lighting now include fuzzy logic controllers. Since they do not necessitate understanding the precise models, these control systems have the benefit of being reliable and relatively easy to develop (De Bakker et al., 2018). It is challenging to rank accurately with precise boundaries when evaluating lighting comfort since it is a subjective measurement of users' pleasure with the quality of the interior environment. According to Lim et al. (2017), fuzzy mathematics is suitable for evaluating lighting comfort. A thorough fuzzy algorithm that considers both natural and smart lighting is recommended to assess users' lighting comfort.

Fig. 4 below depicts the schematic diagram of the suggested control technique that considers lighting comfort. The output of the developed controller using fuzzy logic is the amount of pleasant illumination determined by the illumination level that the light sensors have measured (De Bakker et al., 2018). An algorithm for decisions based on lighting desires and motion signals is presented. The presented algorithm produces the necessary artificial output. The actual lighting output is followed by the real lighting output thanks to a PI closed-loop system.

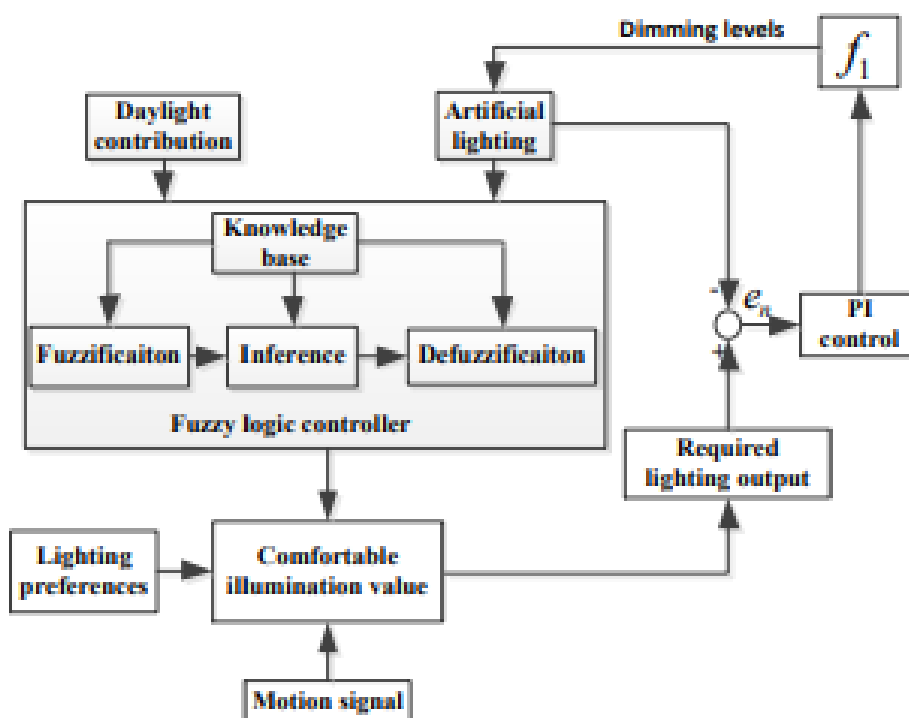


Figure 4: Schematic diagram of a fuzzy logic controller

Source: (Lim et al., 2017)

USER COMFORT ASPECT

De Bakker et al. (2018) suggest that energy efficiency and user comfort are the two main focuses of control systems in smart lighting. User comfort and energy efficiency are the two criteria for integrating smart lighting. Energy efficiency may be measured by evaluating the energy usage of an intelligent lighting system. The formula looks like this:

$$\text{Energy (Wh)} = \text{Power(W)} \times \text{Time(h)} \quad (1)$$

Therefore, the amount of energy utilized increases with the power and duration of usage of the electrical devices. The Unmet Comfort Ratio (UNC), Light Utilization Ratio (LUR), and Light to Comfort Ratio (LCR) can all be used to estimate user comfort. The following is the LUR formula:

$$\text{LUR} = (\text{Time With Lights On}) / (\text{Occupied Time}) \quad (2)$$

According to the formula mentioned, 1 is the ideal LUR value. If it is greater than 1, it is assumed that the lighting is left on longer than is appropriate. In the meantime, it can be assumed that the lamps are on less frequently than they should be if the figure is between 0-1. In contrast, the UNC calculation is as follows:

$$\text{UNC} = (\text{Time in Uncomfortable Condition}) / (\text{Occupied Time}) \quad (3)$$

UNC values range from 0 to 1. The performance of smart lighting improves as it approaches zero. Following is the LCR formula.

$$\text{LCR} = 1 - \sum_{t=1}^n \text{Score}(t) \quad (4)$$

Based on research, it is possible to classify user comfort according to the object in question and its type (Acosta et al., 2018). Depending on the measuring item, the user comfort factor can be separated into control and illumination quality (Acosta et al., 2018).

Assessments centered on control quality examine whether the choices made for intelligent lighting's on/off state conflict with user comfort. The evaluation focused on lighting quality to determine whether or not the light's brightness or hue conflicts with the user's convenience. LUR, which measures the ratio of the times the lights remain on to the amount of time they are used, illustrates a user comfort assessment centered on control quality.

CONCLUSION

Building energy management solutions offer the technical capacity to help users and utilities by reducing energy consumption. These products enable users to reduce or shift loads by providing reminders and monitoring energy usage. They do this by leveraging contextual information like occupancy and daylight availability. The proposed goods available on the market include energy-related and unrelated smart home technologies. With the ability to manage home energy while enhancing security and comfort, such as the ability to lower light loads while driving them vocally, this combination highlights the importance of smart home solutions for consumers. Artificial intelligence and sensing device integration increases energy savings and detection precision. While cutting-edge goods offer these answers, commercialized lighting products lack them compared to other smart home technologies like thermostats, wireless speakers, security cameras, etc. Soon, advanced technologies like artificial intelligence (AI), the Internet of Things (IoT), wireless technology, and networking will change behaviors toward environmentally friendly habits. It will help shift the existing building automation toward innovative and software-defined structures.

REFERENCES

1. Acosta, I., Campano, M. Á., Domínguez-Amarillo, S., & Muñoz, C. (2018). Dynamic daylight metrics for electricity savings in offices: Window size and climate smart lighting management. *Energies*, 11(11), 3143.
2. De Bakker, C., Aarts, M., Kort, H., & Rosemann, A. (2018). The feasibility of highly granular lighting control in open-plan offices: Exploring the comfort and energy saving potential. *Building and Environment*, 142, 427-438.
3. Lim, G. H., Keumala, N., & Ghafar, N. A. (2017). Energy saving potential and visual comfort of task light usage for offices in Malaysia. *Energy and Buildings*, 147, 166-175.
4. Soheilian, M., Fischl, G., & Aries, M. (2021). Smart lighting application for energy saving and user well-being in the residential environment. *Sustainability*, 13(11), 6198.

CZU: 336.763.33(478)

DOI: <https://doi.org/10.53486/dri2022.17>

THE PROFITABILITY OF THE GOVERNMENT SECURITIES: INTEREST RATE vs. YIELD

SPEIAN (FRISCU) OLESEA ²⁴

Abstract: *The profitability of the financial instruments is in tandem with the managerial investment decision. To take right decisions the investors must have practical skills. Thus besides the general notions of government securities, investors must be familiar with the main calculation formulas applied to determine their profitability. In this context, the author shows how the price and the interest rate/yield of the government securities issued through the auctions by the government are determined. Based on this, investors can easily appreciate which government securities to buy: treasury bills or government bonds. The results indicate that the same debt instrument has a different interest rate and yield. Also, the paper highlights the yield curve' importance and use.*

Key words: *government securities, price, interest rate, yield, auction*

JEL CLASSIFICATION: G12, G23, H63.

INTRODUCTION

The government securities market is a reliable source of income. Investors who purchase government securities for profit have consider various aspects, such as country risk, usually the higher the country risk, the higher the yield for the sovereign debt, macroeconomic forecast, debt management strategy, etc. Another aspect that has to be taken into consideration is the evaluation of the profitability of the government securities. For this purpose, each country establishes its convention that is applied in formulas related to the government securities. In this context, the author highlights the input data that is necessary to evaluate the government securities' profitability. Additionally, based on practical examples of the Republic of Moldova it is shown the calculations used at the determination of the interest rate, yield and price of the government securities.

Even in the Republic of Moldova the government securities market was launched in 1995, the main investors in government securities are banks, non-banks investors are not so active in buying these instruments. This can be explained by the low level of financial education. The population are more involved in putting their savings in deposits instead of investing in government securities, where they need to be familiar with not only interest rate but with yield, price of the government securities.

Interest rate and yield does not represent one and the same think, the main differences of them are represented. The fluctuation of the interest rate it is explained by four theories. Also it is mentioned how to design the yield curve, and what are its functions.

²⁴ Ph.D Student, email: olesea.friscu@gmail.com
ORCID: 0000-0001-9957-372X

THE MOLDOVAN GOVERNMENT SECURITIES MARKET

The National Bank of Moldova, for the first time in the history of the country, on March 14, 1995 launched the government securities auctions (Radziwiłł et al., 1999). Ministry of Finance, on behalf of the Government, issues government securities according to the auction calendar. There are two types of the government securities:

Treasury bills – for the short term, up to one year;

Government bonds – for the long term, one year and more.

In 27 years since the government securities market's foundation, many actions have been taken to develop the government securities market (Figure 1).

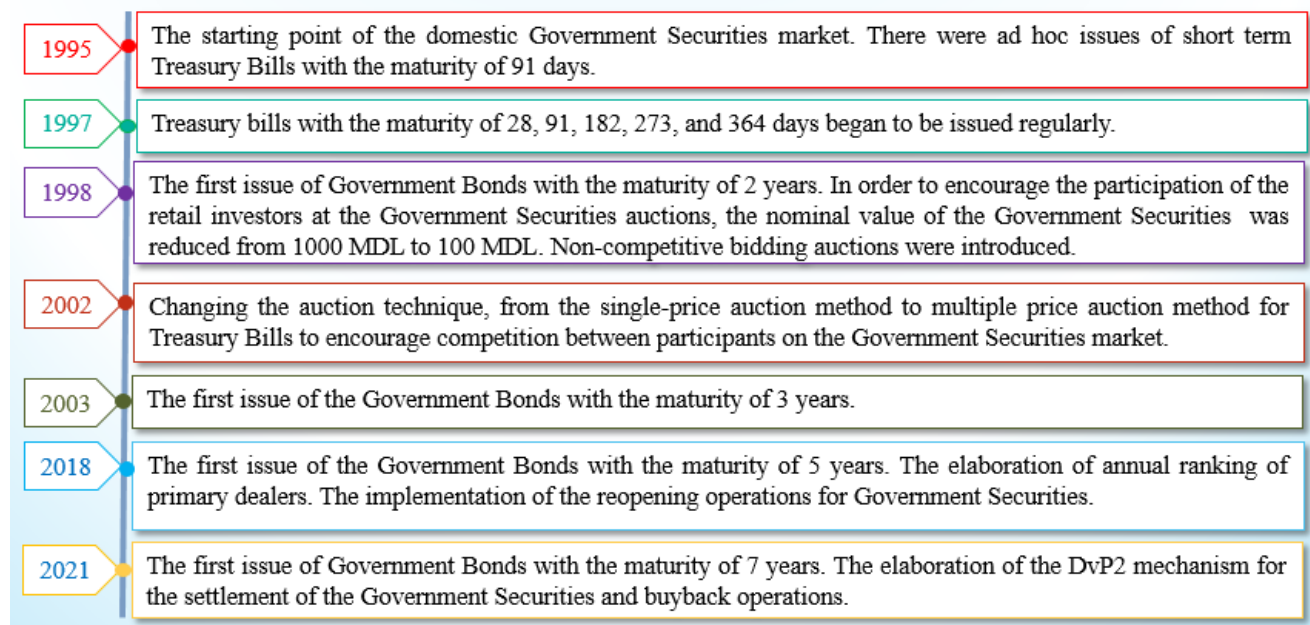


Figure 1. The main events on the government securities market of the Republic of Moldova

Source: Speian, 2021

Every year in the Medium-Term Debt Management Program (2022) are mentioned actions for developing the government securities market. One main action is to extend the maturity of the government securities issued in the primary market to decrease the rollover risk. Another important action is to extend the investor bases and the channels of the selling government securities.

Five days before the auctions, the Ministry of Finance announces the conditions for the government securities placement:

- auction date;
- type of government securities;
- ISIN code;
- nominal value of the government securities;
- indicative volume of the issue;
- circulation term of the government securities;
- conditions for sale;
- settlement date;
- maturity date of the government securities;
- limit for submission of competitive bids, if any.
- annual interest rate for the government bonds, etc.

Investors can participate in the government securities auctions only through the primary dealers. Nine banks from the banking sectors are primary dealers (Table 1).

Table 1. List of the primary dealers

No.	Primary Dealer
1	BC „MOLDOVA – AGROINDBANK” S.A.
2	BC „VICTORIABANK” S.A.
3	BC „Moldindconbank” S.A
4	OTP Bank S.A.
5	BC „ENERGBANK” S.A.
6	BC „EXIMBANK” S.A.
7	„Banca de Finanțe și Comerț” S.A.
8	Banca Comercială Română Chișinău S.A.
9	BC „EuroCreditBank” S.A.

Source: author's own elaboration

For participation in the government securities auctions, the investors have to go to one of the primary dealers mentioned in Table 1 to complete the government securities purchase order. There are two options for participation in the auctions:

- at the competitive biddings – it is indicated the amount to be paid and the offered price;
- at the non-competitive biddings – it is indicated only the amount to be paid. The bids are allotted at the weighted average price of the bids satisfied in the competitive bidding.

At the auction date, there are published the auction results, where the investors can find out if they won the auction or any other information that can help them make the decisions for the participation in the future auctions. In the last period of time the share of non-bank sector that invest in government securities is increasing (Figure 2).

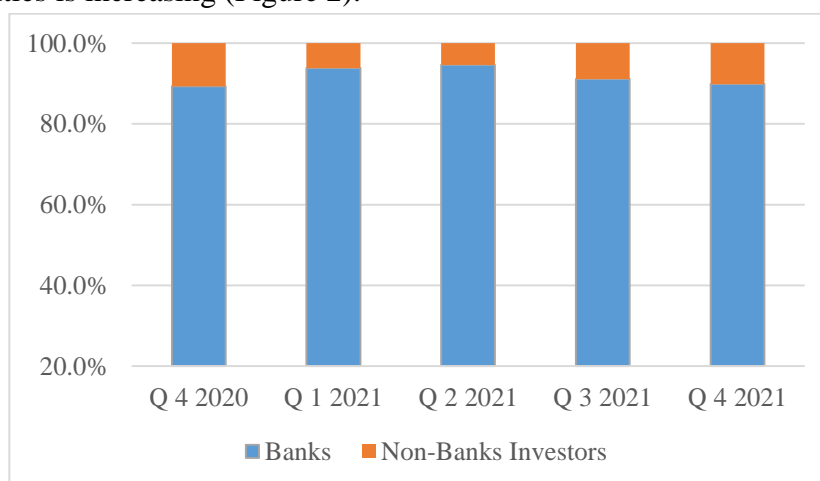


Figure 2. Structure by type of investors buying government securities

Source: author's own elaboration based on source www.mf.gov.md

According to Figure 2, the share of the non-banking sector in 2021 is almost the same as in 2020. Starting in the first quarter 2021 it has decreased by 6,2% and gradually increased to 10.1%.

The outstanding of the government securities issued in the primary market as of December 31, 2021 was 18,8 billion MDL, with 4,2 billion MDL higher than in 2020.

MATHEMATICS OF THE FIXED INCOME MARKET

The price of the government securities can be easily calculated if the rate/yield is known and vice versa. If the price increases then the interest rate decreases, and if the price decreases, then the interest rate increases (Figure 3).

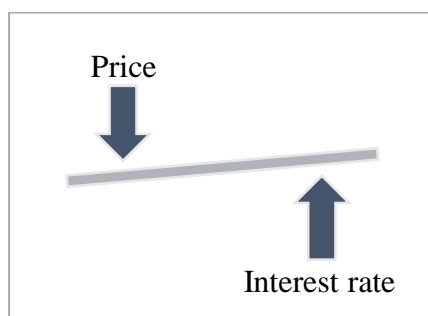


Figure 3. Price vs Interest rate

Source: author's own elaboration

For applying the government securities' formulas, it is important to consider the convention for the calculation chosen by the country (Table 2).

Table 2. Types of the convention calculation

Convention	Rule
Actual/Actual	It is used the actual number of days between two dates. For leap years, 366 days are taken into account, and for the others, 365 days are taken into account.
Actual/365	It is used the actual number of days between two dates. For all types of years 365 days are taken into account.
Actual/360	It is used the actual number of days between two dates. For all types of years, 360 days are taken into account.
30/360	It is assumed that all months have 30 days and the year has 360 days. If the first date is 31, then it changes into 30. If the second date is 31, then it changes into 30 only if the first dates are 30 or 31.
30E/360	It is assumed that all months have 30 days and the year has 360 days. If the first date is 31, then it changes into 30. If the second date is 31, then it changes to 30.

Source: author's own elaboration

In the Republic of Moldova, the convention Actual/365 it is taken for the calculations.

According to the Regulation on Placement, Transaction and Redemption of State Securities in Book-Entry Form no. 170 (2018), the main indicators for guiding investment decisions are based on the following formulas:

– Nominal interest rate for the treasury bills.

$$r = \frac{N-P}{P} * \frac{365}{t} * 100 \quad (1)$$

where:

r – annual nominal interest/yield rate;

N – nominal value of a treasury bill;

P – price of a treasury bill;

t – number of days to maturity.

Table 3. Government Securities auctions results, January 4, 2022

Type of Government Security	Days to maturity	ISIN Code	Amount offered (thous. MDL)	Amount of bids received		Num. of participants	Lowest price and highest price allocated		Weighted average price (MDL)	Total amount allocated		Nominal yield			Effective yield			Maturity date
				Total (thous. MDL)	incl. non competitive bids (thous. MDL)		min (MDL)	max (MDL)		Total (thous. MDL)	incl. non competitive bids (thous. MDL)	min (%)	max (%)	Weighted average (%)	min (%)	max (%)	Weighted average (%)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Treasury Bill	91 days	MD4003001576	100,000.00	343,666.30	6,137.10	9	97.81	97.88	97.81	65,000.00	3,000.00	8.69	8.98	8.98	8.97	9.29	9.29	07.04.2022
Treasury Bill	182 days	MD4003001584	600,000.00	562,892.60	21,794.80	11	95.34	95.46	95.37	361,845.30	21,794.80	9.54	9.80	9.74	9.77	10.04	9.97	07.07.2022
Treasury Bill	364 days	MD4003001592	600,000.00	432,838.00	26,329.50	9	90.97	91.36	91.03	300,512.70	26,329.50	9.48	9.95	9.88	9.48	9.95	9.88	05.01.2023

Source: National Bank of Moldova

Applying formula 1 it is calculating the weighted average yield based on the weighted average price for the treasury bill with the maturity of 91 days.

$$8.98 = \frac{100 - 97.81}{97.81} * \frac{365}{91} * 100 \quad (2)$$

– The effective interest rate of the treasury bills.

$$y = \left(\left(\frac{N}{P} \right)^{\frac{365}{t}} - 1 \right) * 100 \quad (3)$$

where:

y – annual effective interest rate;

N – nominal value of a treasury bill;

P – price of a treasury bill;

t – number of days to maturity.

Thus, the weighted average effective yield for the treasury bill with the maturity of 182 days equals 9.97% (formula 4).

$$9.97 = \left(\left(\frac{100}{95.37} \right)^{\frac{365}{182}} - 1 \right) * 100 \quad (4)$$

– The price of the government bond.

$$P = \frac{C_1}{(1+r)^{\frac{t_1}{365}}} + \frac{C_2}{(1+r)^{\frac{t_2}{365}}} + \dots + \frac{C_n + N}{(1+r)^{\frac{t_n}{365}}} \quad (5)$$

where:

P – price of a government bond (including the accrued coupon);

n – number of coupons to be paid;

C_n – size of coupon “n”;

N – nominal value of a government bond;

r – yield of a government bond;

t_n – number of days to coupon “n” payment.

– The coupon of the government bond.

$$C = N * \frac{r}{100} * \frac{t}{365} \quad (6)$$

where:

C – size of the coupon;

N – nominal value of a government bond;

r – interest rate of a government bond;

t – coupon term.

Table 4. Government Securities auctions results, January 19, 2022

Government Bond circulation term	Annual interest rate (%)	ISIN Code	Amount offered (thous. MDL)	Amount of bids received		Num. of participants	Lowest price and highest price allocated		Weighted average price (MDL)	Total amount allocated		Effective yield			Coupon frequency	Maturity date
				total (thous. MDL)	incl. non competitive bids (thous. MDL)		min (MDL)	max (MDL)		total (thous. MDL)	incl. non competitive bids (thous. MDL)	min (%)	max (%)	weighted average (%)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2 years	6.50	MD4004000742	10,000.00	599.80	0.00	3	100.00	100.00	100.00	599.80	0.00	6.61	6.61	6.61	Semi-annual	21.01.2024
3 years	7.00	MD4004000759	10,000.00	300.00	0.00	3	100.00	100.00	100.00	300.00	0.00	7.12	7.12	7.12	Semi-annual	21.01.2025
4.83 years	7.50	MD4004000692	10,000.00	200.00	0.00	2	100.00	100.00	100.00	200.00	0.00	7.64	7.64	7.64	Semi-annual	19.11.2026

Source: National Bank of Moldova

First coupon of the government bond with maturity of 2 years is equal with 3.24 (Formula 7).

$$3.24 = 100 * \frac{6.50}{100} * \frac{182}{365} \quad (7)$$

Using formula 6, the second, the third, and the fourth coupon are calculated. Thus, the price of the coupon with the maturity of 2 years is 100.

$$100 = \frac{3.24}{(1+6.61\%)^{\frac{182}{365}}} + \frac{3.28}{(1+6.61\%)^{\frac{366}{365}}} + \frac{3.22}{(1+6.61\%)^{\frac{547}{365}}} + \frac{3.28+100}{(1+6.61\%)^{\frac{731}{365}}} \quad (8)$$

It is worth mentioning that the interest rate and the yield do not represent the same result. The differences between the interest rate and the yield are represented in Table 5.

Table 5. Yield vs Interest rate

Yield	Interest rate
It can be expressed as amount or percentage	It is expressed as a percentage
Annual bases	It can be determined annually, quarterly, monthly or daily
It is higher than the interest rate	It is less than the yield

Source: author's own elaboration

Investors understanding how to apply the bases formulas and the difference between the yield and interest rate can easily take managerial decisions to obtain a higher return investing in the government securities.

THE CONSTRUCTION OF THE YIELD CURVE

The yield curve is a graphical representation of the relationship between the yield and maturity of the debt instrument (Melicher and Norton, 2017). It performs the following functions:

- It is used as a reference to determine the yields of debt instruments. The yield curve indicates the cost of money for different maturities of financial instruments. The issuer uses the yield curve for pricing the bonds. Generally, the yield curve for zero-coupon bonds is used for new lines of issuing rather than the redemption yield curve.
- It represents an indicator for forecasting yields. The shape of the yield curve is an indicator for forecasting interest rates. This is the most important function of the yield curve. It can also serve as a forecast of inflationary expectations.
- Measuring and comparing returns depending on the maturity of financial instruments. Portfolio managers analyze which point on the curve is less profitable for investment.
- It represents the relative value of the yield for similar instruments. Thus it is determined the price of new bonds to be sold or bought.

– Can be used as a reference price for derivatives. The „risk-free” interest rate of the treasury bills is used to price options.

The shape of the curve is changing in dependence on economic expectations:

– when interest rates are high and the economy seems to be entering a recession;
– investors sell short-term government securities, and buy long term in order to lock high yields;

– The prices for the long-term government securities increase, and yields decrease etc.

Generally, the yield curve has three shapes (Figure 4).

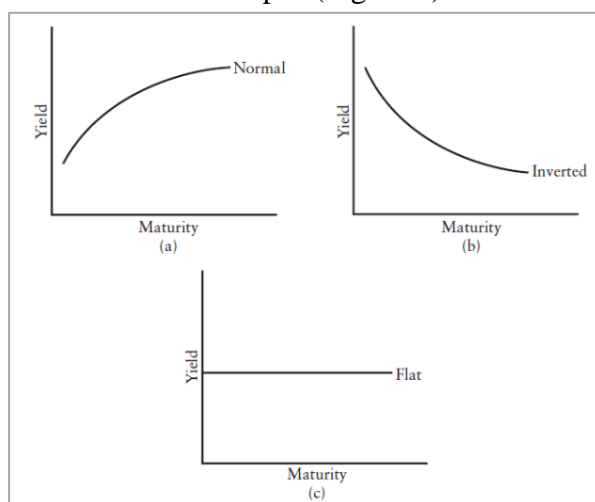


Figure 4. The shapes of the yield curve

Source: Fabozzi and Drake, 2009

For the normal yield curve the short-term yields are lower than the long-term yields. In the case of the inverted yield curve and vice versa, the short-term yields are higher than long-term yields. If the yields for the short-term and long-term are almost equal, the yield curve is flat.

There are four theories that can explain the fluctuation of the interest rates:

– *The expectation theory.* The yield curve indicates the expectations of the investor regarding the inflation rate. If the yield curve is flat, then the inflation will remain essentially unchanged. If it is downward sloping then the inflation rate will decrease.

– *The liquidity preference theory.* The instruments with longer maturity are riskier than those with shorter maturity. The borrower would like to borrow for a longer period, whereas the lender would like to lend for a shorter period (Prameswaran, 2020). The interest rates for long-term government bonds include a premium for long-term holding. This premium compensates investors for the additional risk associated with the longer period of time.

– *The market segmentation theory.* In the financial market, a wide range of issuers have different requirements. Thus, the shape of the yield curve is determined by the supply and demand for the specific debt instruments. Certain types of investors prefer short-term government securities, and other – long-term. The theory argues that there are no interrelationships between these instruments.

– *The preferred habitat theory.* This theory is a slight modification of the market segmentation theory. Investors, in exchange for risk premiums, can change their preferences regarding the terms and structure of the debt instruments.

For liquid financial markets, there are a lot of theoretical and practical examples for modelling the yield curve (Bringio and Mercurio, 2006). In the case of illiquid markets, it is not easy to construct the yield curve, especially since the mechanism for determining the prices of financial

instruments is not credible. Thus, Nelson and Siegel (1987) proposed a model for determining the yield curve for illiquid markets. This model is used in the case of the Republic of Moldova.

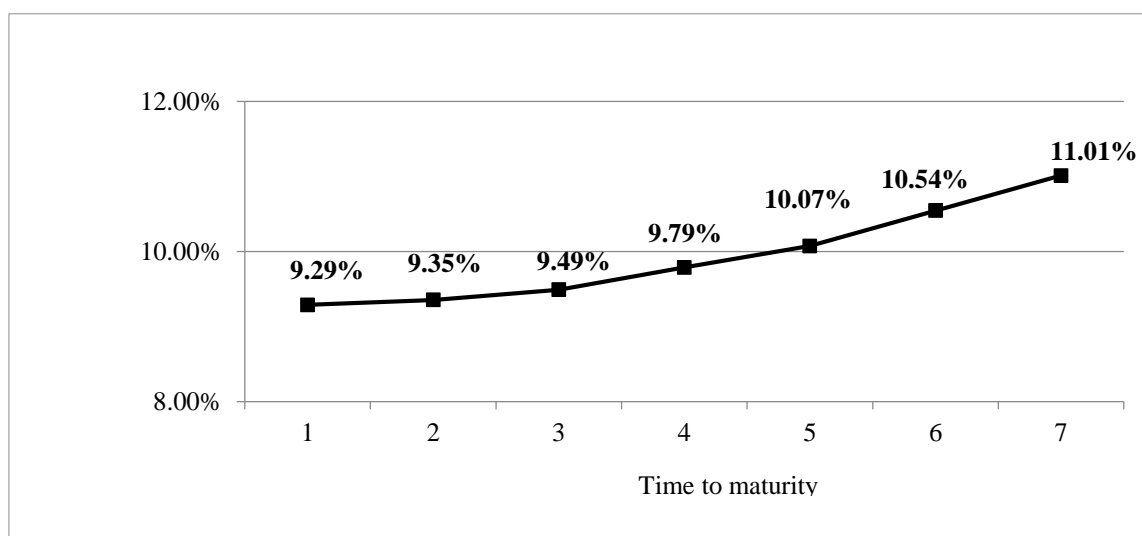


Figure 5. Yield curve, as of December 31, 2021

Source: Source: author's own elaboration based on source www.mf.gov.md

According to Figure 5, the shape of the yield curve represents an upward curve, which assumes that short-term returns are lower than long-term returns. This is also explained by the fact that investors ask higher rate of return for assuming the risk of investing money over a longer period of time. The same, the yield shape indicates that the inflation rate will increase, which came true. In August 2022 the annual inflation rate reached the level 34.3%.

CONCLUSION

Investors must be familiarized with the formulas regarding the government securities' price, yield or interest rate to take an investor decision. In this paper, the author presents practical examples of using the main formulas applied for the government securities issued in the Republic of Moldova.

The yield and the interest rate are not the same thing. Yield is higher than the interest rate and can be expressed in amount and percentage, whereas the interest rate is expressed only in percentage. Also, investors have to take into account the convention used for calculations because different countries have different conventions. In the Republic of Moldova, the convention that is applied at the formulas regarding the government securities is Actual/365.

Taking into consideration the low degree of the liquidity in the government securities market, it is not easy to choose the credible method for determining the prices of financial instruments. In this case, the Nelson-Siegel model is used to construct the yield curve, which is indicative one.

REFERENCES

1. Bringo, B., Mercurio, F. (2006). Interest rate models – Theory and Practice. *Springer Finance*.
2. Fabozzi, F.J., Drake P.P. (2009). *Finance: capital markets, financial management, and investment management*. New Jersey: John Wiley & Sons, Inc.
3. Hotărârea Comitetului Executiv al Băncii Naționale a Moldovei cu privire la aprobarea Regulamentului cu privire la plasarea, tranzacționarea și răscumpărarea valorilor mobiliare de stat în formă de înscrie în cont: nr. 170 din 19 iulie 2018. In: Monitorul Oficial al Republicii Moldova, 2018, nr.277-284, art. 1171.
4. Hotărârea Guvernului cu privire la aprobarea Programului Managementul datoriei de stat pe termen mediu (2022-2024): nr.81 din 16.02.2022. In: Monitorul Oficial al Republicii Moldova, 2022, nr.45-52, art. 111.
5. Melicher, R.W, Norton, E.A. (2017). *Introduction to Finance*. USA: John Wiley & Sons, Inc.
6. Ministry of Finance. (2022). *Monthly statistical bulletins*. <https://mf.gov.md/sites/default/files/Buletin%20Statistic%2012.2021.pdf>
7. National Bank of Moldova. (2022). *Results of Government securities auctions*. <https://www.bnm.md/bdi/pages/reports/dop/DOP10.xhtml>
8. Nelson, C.R, Siegel, A.F. (1987). Parsimonious Modelling of Yield Curves. *The Journal of Business* (60(4)), 473-489.
9. Prameswaran, S.K. (2020). *Fixed Income Securities: Concepts and Applications*. Berlin: Walter de Gruyter Inc. p. 109 ISBN 978-1-5474-1673-8
10. Radziwiłł, A., Șcerbațchi, O., & Zaman, C. (1999). Financial Crisis in Moldova - Causes and Consequences. *Studies & Analyses CASE*, 192. 11 p.
11. Speian, O. (2021). The historical evolution of the Government Securities market in the Republic of Moldova. *International Scientific and Practical Conference „Sustainable development and socio-economic cohesion in the 21st century: trends and challenge”*. Bulgaria: Tsenov Academic Publishing House, pp. 378-385.

CZU: 339.73:[338.1:330.43](478)

DOI: <https://doi.org/10.53486/dri2022.18>

SOME ASPECTS OF ASSESSING THE EFFECTIVENESS OF INTERNATIONAL FINANCIAL ASSISTANCE TO THE REPUBLIC OF MOLDOVA

STUPACHEV SERGEY²⁵

Abstract: *The problem of assessing the effectiveness of financial assistance by international financial institutions (the International Monetary Fund and the World Bank) to the Republic of Moldova is considered. It is shown that the effectiveness of financial assistance should be determined on the basis of assessing the degree of its impact on the economic stability and economic development of the Republic of Moldova. The author's definition of the economic stability of the economic system is given, as well as the concept of its optimal structure. It is proposed to assess the sustainable economic development of the country using an indicator obtained on the basis of the rank parametric distribution of the economic census. This indicator characterizes the stability and change in the structure of its economy. The parameters and structural changes in the rank parametric distribution of the economic census make it possible to assess economic stability and economic development, as well as to identify problem areas in the country's economy.*

Key words: *International financial institutions, international financial assistance, emerging markets, economic crisis, economic stability, economic census.*

JEL CLASSIFICATION: B26, F35, E22, F65.

INTRODUCTION

Currently, in the conditions of the recession of the world economy after the global financial and economic crisis of 2008 and the consequences of the COVID-19 pandemic, the problem of assessing the effectiveness of international financial assistance used to increase economic stability and economic development of the country is relevant. The demand for solving this problem is especially evident for countries with developing economies, which include the Republic of Moldova. The economies of these countries have been negatively impacted to a greater extent by the impact of the recent financial and economic crises. In this regard, the largest amount of financial assistance for these countries comes from the International Monetary Fund (IMF) and the World Bank Group (WB), which are key organizations of the International Financial Institutions (IFIs). Financial assistance provided by IFIs during times of crisis is generally the only available source of funding for such countries.

Practice shows that financial assistance provided by IFIs to countries with small volumes of economy (such countries include most countries with developing economies, including the Republic of Moldova), has a rather significant impact on their economic system. Such an impact is directly reflected in the key indicators of the economic development of countries. In this regard, the effectiveness of IFI financial assistance should be assessed by the degree of its impact on the

²⁵ Ph.D Student, email: stypschev@mail.ru
ORCID: 0000-0002-3831-8132

economic stability and development of such countries. The more significant the increase in the economic stability of the country over a certain period of time after financial assistance from IFIs, the greater its effectiveness. As a rule, for the economic system considered within the framework of the country, this time period is taken equal to one year. Accordingly, in order to determine the effectiveness of IFI financial assistance, it is necessary to carry out a comparative analysis of the assessment of the sustainability of the economic system under consideration before receiving financial assistance and after using it for this period of time.

The assessment of the economic stability and economic development of a country is usually carried out on the basis of a system of indicators characterizing the main (key) parameters of its economy. Obviously, economic development is not feasible without economic sustainability. It should be noted that there is still no generally accepted definition of the concept of "economic sustainability". There are also no uniform methodological developments and methods for measuring and evaluating it. Usually the term "economic sustainability" is used in relation to any economic systems.

In modern economic literature, economic stability is understood as the ability of an economic system to return to its state of equilibrium with the external environment after the action of disturbing factors on it [3–6, 9]. At the same time, some definitions of economic stability also assume that the parameters and indicators of the economic systems under consideration are also preserved within certain limits [1, 7]. It does not specify the composition of these indicators, as well as their quantitative and qualitative characteristics.

In this article, the economic stability of the economic system is understood as the ability, after the influence of disturbing factors on it, to preserve the values of the main (key) economic indicators characterizing economic stability and progressive development due to the achieved economic potential and the realized structure of the economy, as well as the corresponding state regulation.

OPTIMAL STRUCTURE OF ECONOMY

To assess the economic stability of a country, it is necessary to develop an indicator that will characterize the optimal structure of its economy. The optimal structure of the economy is understood as an economic system that functions with maximum economic stability. It is advisable to assess the optimality and change in the structure of the economic system on the basis of the concept of economic cenosis — a model of the economic system within the framework of the concept of evolutionary economics and the evolutionary theory of economic changes [11]. The analysis of structural changes in the economic system based on the cenological theory makes it possible to assess its stability and identify problem areas in its economic development [2, 9].

For the cenological analysis of the stability of the country's economic system, all its organizations, companies and manufacturing enterprises (hereinafter referred to as companies) are considered that develop in a competitive environment for access to resources and markets. As a result of such evolutionary development and self-organization, an open non-equilibrium economic system is formed with predominantly weak, intersectoral ties between enterprises along the corresponding technological chains — an economic cenosis [9]. It should be noted that it is advisable not to study the entire economic system of the country as a whole, which is a rather difficult task, but to consider individual key sectors of its economy and the evolution of their economic cenoses. In the Republic of Moldova, such sectors include agriculture and the banking sector.

ANALYSIS OF THE STABILITY OF ECONOMIC CENOSSES

Analysis of the stability of economic cenoses is carried out on the basis of its rank parametric distributions [2]. These distributions are formed on the basis of empirical data of key economic indicators (revenue, free cash flow, net profit, etc.) of all companies in the economic system under consideration. First, a distribution parameter is selected — one of the main financial and economic indicators of companies for a certain time period (usually for a financial year), and then the companies are numbered in descending order of the value of this indicator (ranking). The first rank corresponds to the company with the highest economic indicator.

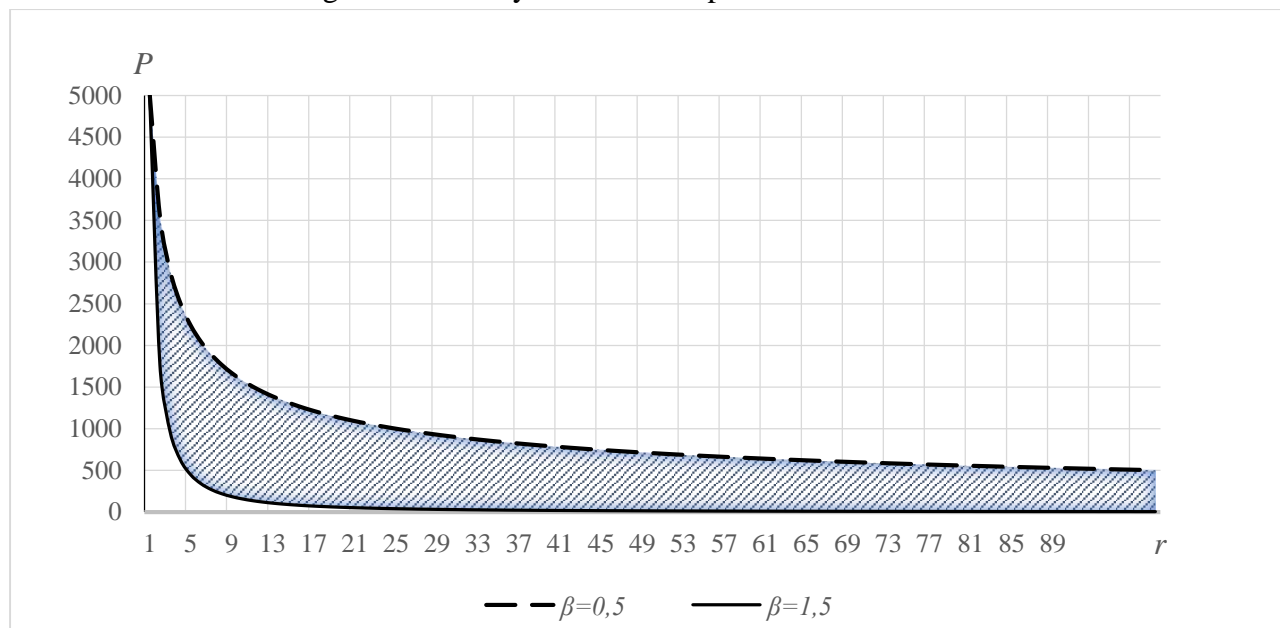
The assessment of the stability of the considered economic system is carried out by comparing the constructed rank parametric distribution and the optimal, so-called classical hyperbolic H -distribution [2]:

$$P(r) = P_1 / r^\beta, \quad (1)$$

where: $P(r)$ is the economic indicator of a company with rank r ; P_1 is a constant value equal to the maximum value of this indicator (company with rank 1); β is the rank coefficient that determines the degree of steepness of the H -distribution hyperbola.

As the long-term practice of statistical observations shows, economic cenoses in the process of their self-organization and evolution in conditions of free market competition over time tend to a stable hyperbolic H -distribution with a rank coefficient $\beta \in [0.5; 1.5]$ [2] (Figure 1).

Figure 1. Stability area for rank parametric distributions of economic cenoses.



Source: developed by the author based on [2]

The area between the curves with $\beta=1.5$ and $\beta=0.5$ is considered stable for the rank parametric distributions of economic cenoses. At the same time, economic cenoses reach the most stable states in the case of the so-called “decile ratio” — the ratio of the sum of the highest economic indicators for 10% of companies to the sum of the lowest economic indicators for 10% of companies does not exceed 10 [2]. The parameters and structure of the constructed rank parametric distributions of the selected economic cenoses of the country and individual economic sectors can serve as an indicator of their structural changes and an assessment of their stability.

The proximity of the obtained empirical values of the rank parametric distribution of companies to the hyperbolic H -distribution function approximating it is determined using well-known approximation methods (for example, the method of least modules and least squares) [10].

For the least squares method, the parameters P_I and β of the approximating function of the hyperbolic H -distributions (1) are determined from the condition:

$$\min \sum_{r=1}^N [P_f(r) - P_1/r^\beta]^2, \quad (2)$$

где P_f — фактические данные экономических показателей компаний за финансовый год. Показатель близости (отклонения) от оптимальной структуры рассматриваемой экономической системы страны определяется из выражения:

where P_f is the actual data on the economic performance of companies for the financial year. The indicator of proximity (deviation) from the optimal structure of the considered economic system of the country is determined from the expression:

$$\Pi = \sum_{r=1}^N [P_f(r) - P_1^*/r^{\beta^*}]^2. \quad (3)$$

Здесь P_1^* и β^* есть решение (2), а P_1^*/r^{β^*} является гиперболическим H -распределением с ранговым коэффициентом в интервале $\beta \in [0,5; 1,5]$.

Here P_1^* and β^* is a solution to (2), and P_1^*/r^{β^*} is a hyperbolic H -distribution with a rank coefficient in the interval $\beta \in [0.5; 1.5]$.

Meanwhile, the assessment of the deviation of the economic cenosis from the optimal structure of the considered economic system (3) is not entirely correct. This estimate is not dimensionless and depends on the absolute values of the selected parameters of the rank parametric distribution, which can vary significantly from year to year. Therefore, the author proposes to introduce a normalized assessment of the deviation of the actual economic cenosis from its optimal structure in the form of a stability indicator [8]:

$$\Pi_n = \sum_{r=1}^N [P_f(r) - P_1^*/r^{\beta^*}]^2 / (\sum_{r=1}^N P_f(r))^2. \quad (4)$$

In formula (4), the denominator is the square of the sum of the actual financial parameter of the considered economic system for the corresponding year.

CONCLUSIONS

Analysis of the impact of financial assistance provided by the International Financial Institutions to the Republic of Moldova showed that its effectiveness should be assessed by the degree of its impact on the economic stability of the country. The more significant the increase in the country's economic stability over a certain period of time after the implementation of financial assistance, the greater its effectiveness. It is proposed to assess the economic stability of the country and its sectors of the economy using the indicator proposed by the author on the basis of the concept of the rank parametric distribution of the economic cenosis — a model of the economic system within the framework of the concept of evolutionary economics.

The developed indicator of economic stability characterizes the deviation of the economic cenosis from its optimal structure and thus allows assessing the stability of the economic system in the process of its evolution. Such an assessment makes it possible to determine the degree of influence of external factors acting at different time periods on the economic stability of individual economic sectors and on the country's economy as a whole. This indicator can serve as an indicator of the economic stability of a country or selected key sectors of its economy. The smaller this indicator, the closer the structure of the cenosis is to the optimal one, that is, to the structure of the economic system

that has maximum economic stability. At the same time, the analysis of changes in this indicator over a certain time period of international financial assistance to the Republic of Moldova makes it possible to assess the effectiveness of its impact on certain economic sectors and on the country's economy as a whole.

BIBLIOGRAPHY

1. Гапоненко А.Л. Стратегическое планирование социально-экономического развития региона. *Пространственная экономика*, 2005, № 4, с. 40-53.
2. Кудрин Б. И. Два открытия: явление инвариантности структуры техноценозов и закон информационного отбора, М.: Технетика, 2009, 82 с. ISBN 978-5-902-926177.
3. Кудрин Б. И. Семнадцать лекций по общей и прикладной ценологии. — 3-е изд, Москва: Технетика, 2014, 226 с. ISBN 978-5-902926-29-0.
4. Ланге О. Введение в экономическую кибернетику: пер. с польск, М.: Прогресс, 1968, 208 с.
5. Леонтьев В.В. Экономические эссе. Теории, исследования, факты и политика: пер. с англ, М.: Политиздат, 1990, 415 с. ISBN 5-250-01257-4.
6. Моисеев Н.Н. Универсум. Информация. Общество / Никита Николаевич Моисеев, М.: Устойчивый мир, 2001, 198 с. ISBN 5-93177-016-X.
7. Порохин А.В., Урбан Н.А. Современные научные подходы к определению сущности экономической устойчивости. *Фундаментальные исследования*, 2015, № 11-3, с. 600-604.
8. Ступачев С.А. Оценка устойчивости экономических систем, описываемых экономическими ценозами, на примере банковского сектора Республики Молдова, *Экономические науки*, 2019, № 12 (181), с. 418–422.
9. Фуфаев В.В. Экономические ценозы организаций, М.-Абакан: Центр системных исследований, 2006, 86 с. ISBN 5-901271-25-4.
10. Dougherty С. *Introduction to Econometrics* 4th edition. Oxford: Oxford University Press, 2011, 573 p. ISBN 0-19-504346-4.
11. Richard R. Nelson and Sidney G. Winter. *An Evolutionary Theory of Economic Change*. Harvard University Press, 1985, 482 p. ISBN 9780674272286.

CZU: 336.266.322(478):[336.02:061.1EU]

DOI: <https://doi.org/10.53486/dri2022.19>

DEFICIENCIES OF THE VALUE ADDED TAX SYSTEM IN THE REPUBLIC OF MOLDOVA FROM THE PERSPECTIVE OF EU DIRECTIVES

NOROC DOREL²⁶

Abstract: *Public revenues collected from the value added tax (hereinafter - VAT) ensure the financing of 47% of the total state budget expenditures in the Republic of Moldova, which demonstrates the main function of this type of indirect tax to contribute to the formation of budget financial resources. At the same time, VAT can be used by public decision-makers to stimulate or make the consumption of certain types of products more affordable, especially those of social importance (food, medicines, etc.).*

From the perspective of economic processes, it is essential to ensure the principle of VAT neutrality, which materializes in the economic value chain of goods and services through the right to deduct VAT amounts.

This principle must ensure that companies operating under similar conditions must be subject to the payment of the same amount of VAT.

The compliance with this principle should be analyzed in a comprehensive manner, on the entire value chain of production of goods and provision of services. A priori, we can mention that tax systems that are characterized by a host of exemptions and reduced quotas are more likely to create dysfunctions of the principle of neutrality and, respectively, of economic processes. The principle of neutrality is the basis of EU Directives, but also of the caselaw of the European Union in the field of VAT. This article proposes an analysis of the VAT system in the Republic of Moldova and the identification of elements that do not correspond to the principle of neutrality, creating impediments in the development of the national economy.

Key words: *VAT, exemptions, reduced rate, neutrality, harmonization.*

JEL CLASIFICATION: H21, H22.

INTRODUCTION

VAT in most countries, including the Republic of Moldova, represents one of the critical instruments for the collection of budget revenues and financing of public expenditures. The capacity of VAT to raise revenue in a neutral and transparent manner is the main topic that should of relevance to political decision-makers in the process of reforming tax systems. This can be achieved if the current legislation or the proposed measures are analyzed by respecting the VAT system's fundamental operating principles. Next, we propose to analyze the importance of VAT, the principles of operation, how VAT can be used to achieve development objectives, the existence of deficiencies in the VAT system, and recommendations for overcoming them.

²⁶ Ph.D Student, email:norocdorel@gmail.com
ORCID: 0000-0002-3919-176x

THE NEED TO RESPECT THE PRINCIPLES OF THE VAT SYSTEM IN ORDER TO ACHIEVE THE OBJECTIVES OF PUBLIC POLICIES

The principles of operation of VAT in the EU

The VAT system in the EU is regulated in particular by Directive 2006/112/EC – the common value added tax system of the European Union (hereafter Directive 2006/112/EC), and is based on two fundamental principles:

- General Consumption Tax;
- Neutral tax (the right to deduct).

These two principles emerge from the provisions of Article 2 of Directive 2006/112/EC „The principle of the common system of VAT entails the application to goods and services of a general tax on consumption exactly proportional to the price of the goods and services, however many transactions take place in the production and distribution process before the stage at which the tax is charged. On each transaction, VAT, calculated on the price of the goods or services at the rate applicable to such goods or services, shall be chargeable after deduction of the amount of VAT borne directly by the various cost components.”

The first principle ensures the VAT function of mobilizing the budget revenues necessary to finance budget expenses following the collection of a part of the value of the general consumption of goods and services. The second principle ensures that the collection of VAT to the budget is carried out without distorting the economic activity, the same tax being applied regardless of the number of value chains of production and sale to the final consumer.

Compliance with the first principle presupposes the existence of a limited number of VAT exemptions or reduced rates, and the second is manifested by the right to deduction or refund of VAT, as the case may be.

Yet, whilst as general tax on consumption VAT should apply to all consumption, the decision was made in the 1960s by the EU legislator to exclude certain consumption from the tax base. The rationale for excluding consumption from the tax base in 1960s/1970s was essentially two-fold, namely, to replicate exclusions from the tax base that was applicable under previous cumulative taxes, and to reflect the existence of technical obstacles to the application of VAT to some services, the so-called difficult-to-tax services. Over time, three additional explanations were given for the use of (merit) exemptions, and reduced rates, namely:

1. Vertical equity: idea that these concessions limit the natural regressivity of VAT, i.e. that the tax weights more heavily on poorer income households; therefore, so applying exemptions to key products (e.g., food, healthcare, and education) would limit the impact of the tax on those households;
2. Positive externalities: idea that these concessions increased consumption of so-called merit goods (e.g., books, cultural events, and sport activities);
3. Increase employment: idea that application of reduced rates will ultimately lead to increased employment in labor-intensive industries (e.g., hairdressing), or areas where price is particularly elastic (e.g., electronics), or both (e.g., restaurants) (de la Feria, 2016).

Thus, to ensure the maximum efficiency of the VAT system, it is essential to respect the above principles, namely a limited number of exemptions and reduced rates applied to goods and services intended for final consumption and the right to deduction (IFS, 2011).

Taxing only final consumption means that no net tax is levied on intermediate inputs (purchases made by firms for their business). This is crucial for preserving production efficiency: in other words, for ensuring that there is no unutilized scope for the economy to produce more of one good without having to produce less of others, which would clearly be wasteful.

To comply with the above principles the European Union’s common system of value added tax is based on the following key points:

(1) VAT is applied to all transactions carried out in the EU for payment by a taxable person. Imports by any person are also subject to VAT.

(2) Taxable transactions include supplies of goods or services within the EU, acquisitions of goods between EU Member States (goods supplied in and dispatched or transported by a business from one Member State to a business in another) and imports of goods into the EU from non-EU countries.

(3) VAT is charged when the goods or services are supplied, according to the nature of the transaction.

(4) The taxable amount for supply of goods and services and the acquisition of goods between Member States includes all payments to the supplier.

(5) The standard rate of VAT to be applied by all Member States to goods and services is at least 15%. Member States may apply one or two reduced rates of at least 5% to specific goods or services listed in the directive.

(6) The directive allows for exemptions from VAT. Most of these are exemptions without the right to deduct (e.g. medical care, social services or financial and insurance services). Exemptions with the right to deduct also exist (e.g. supplies of goods between Member States or exports of goods to a non-EU country).

(7) A taxable person may deduct the amount of VAT paid on acquired goods or services used for taxed transactions in the Member State where these goods or services are acquired. This input VAT can be deducted from VAT payable on taxed transactions (e.g. domestic supplies of goods or services).

The role of VAT in ensuring the achievement of sustainable development objectives

Taxation and effective revenue mobilization are crucial in implementing sustainable development goals. The taxation system can influence the achievement of development objectives in two ways:

1. The structure and level of taxation (stimulation of activities, work, changing behavior, fair redistribution of income through progressive taxation, etc.);
2. Financing of public expenditures, especially those related to development objectives.

When we talk about VAT, the primary role should be to mobilize budget revenues necessary to finance public policies undertaken for the development objectives. The importance of the taxation system is determined, in essence, by its finality, namely the achievement of budget expenditures. However, the primary purpose of the taxation system should be to generate sufficient revenues to ensure the financing of budget expenditures, which are meant to implement the state's priorities in various fields like social, economic, educational, etc.

Besides financing public expenses, VAT should be analyzed from the perspective of its elements and way of operation. Thus, in part related to economic activities, the VAT system should correspond to the principle of neutrality mentioned above. In terms of people and the social aspect, many countries, including the Republic of Moldova, apply VAT exemptions or reduced rates to increase the population's access to specific categories of socially important products (food products, medicines, etc.).

However, empirical studies (Warwick R, Harris T, Phillips D, Goldman M, Jellema J, Inchauste G, Goraus-Tańska K., 2022) demonstrate that the use of VAT exemptions or reduced rate to support the poorer population is not the most effective measure, therefore direct interventions

through social spending policies are proposed. Social spending policies are much better targeted. Also, the government in developing countries is more constrained by administrative capacity and overall resources in terms of available policy options (Goñi, E., López, J. H., & Servén, L., 2011).

In developing countries, VAT exemptions and special rates should also be minimized as they erode the revenue base and reduce the opportunity to finance redistributive spending. Indeed, even poorly targeted public spending is better for the poor than reduced VAT rates. However, where capacity constraints prevent spending programs from reaching the poor, the case for some differentiation in VAT rates, for example, for basic foodstuffs, can be strong.

In conclusion, we can mention that VAT system can be used to achieve development objectives based on the following:

- mobilize the revenue to finance public spending regarding sustainable development objectives (infrastructure, education, etc.)
- maintaining a short list of goods on which VAT exemptions or reduced rates apply;
- ensuring VAT neutrality.

VAT DEFICIENCIES IN THE REPUBLIC OF MOLDOVA FROM THE PERSPECTIVE OF EU STANDARDS AND ECONOMIC GROWTH

VAT revenues represent an essential component of the accumulation of revenues to the budget, constantly increasing both in nominal values and as a share in GDP. Thus, during 2016-2021, VAT revenues increased from 14.6 billion lei to 25.5 billion lei, and as a share of GDP, from 9.06% to 10.55%.

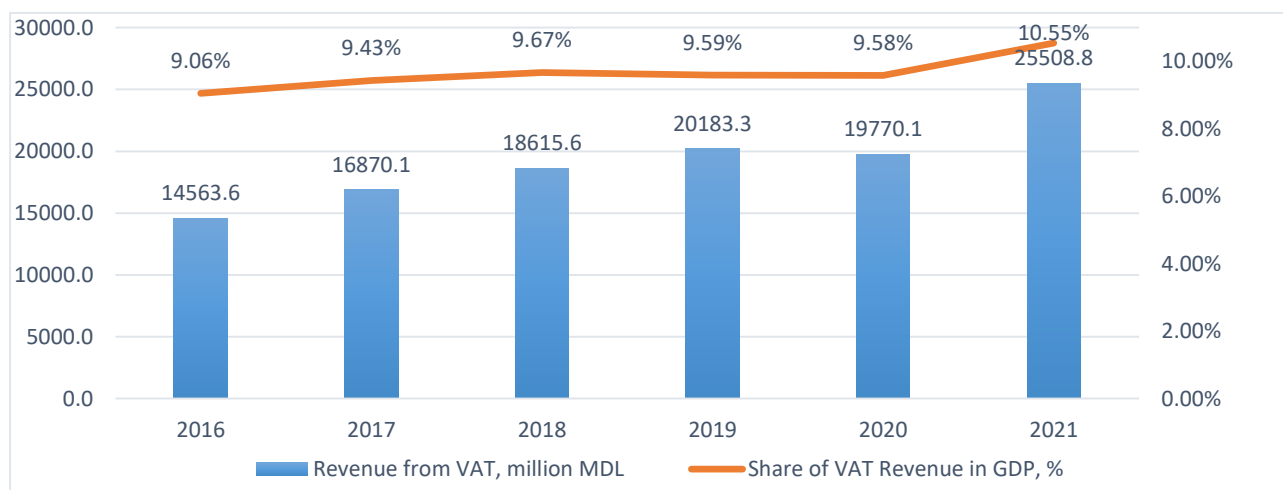


Figure 1. Evolution of VAT revenues and share in GDP, Moldova

Source: developed by the author based on Ministry of Finance of RM data

The Republic of Moldova has a high indicator of VAT revenues in GDP of 9.6% compared to the 6.9% average of the European Union countries. However, the high indicator does not reflect an increased efficiency of VAT but the result of the structure of the national economy, namely a consumption base, where imports significantly outweigh exports. In developed countries with a high level of exports that contribute significantly to the formation of GDP, the level of VAT revenues in GDP is lower because exports do not have a VAT component, being exempt from VAT with the right to deduct, and respectively the right to refund VAT, paid for inputs.

The ones described above demonstrate the critical role of VAT in the formation of budget revenues and, respectively, the financing of budget expenses, including those related to development objectives.

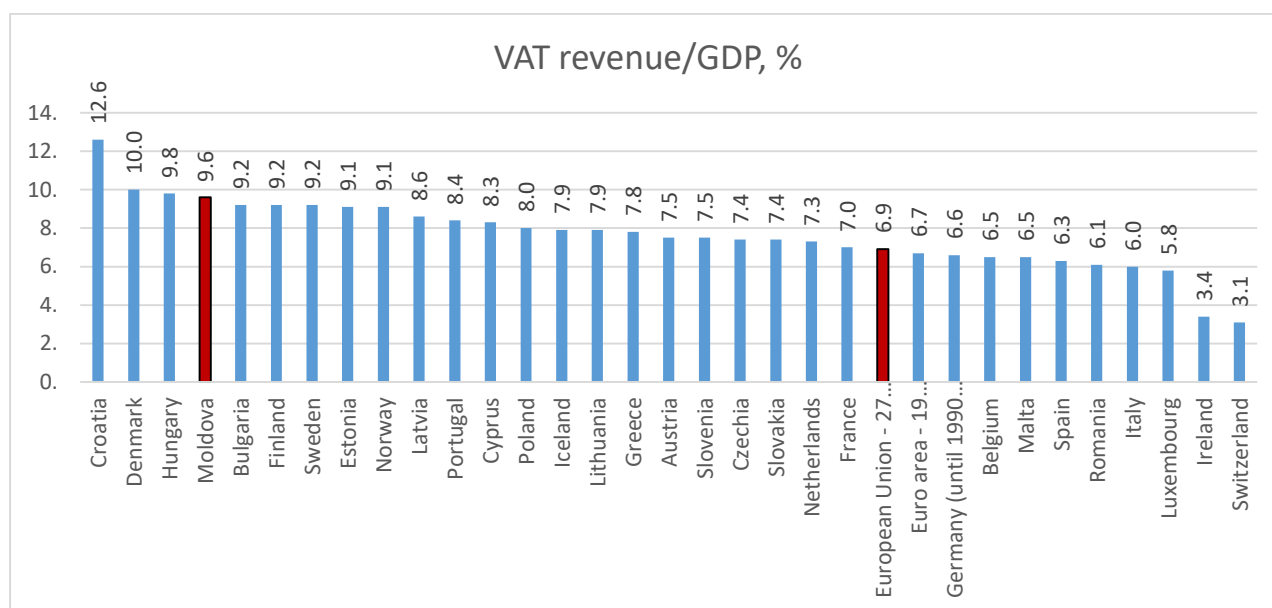


Figure 2. Share of VAT revenue in GDP in UE countris and Moldova, 2020

Source: developed by the author based on European statistics and Ministry of Finance of RM data

On June 23, 2022, the Republic of Moldova was granted the status of candidate for accession to the European Union. In this context, achieving the objective of european integration requires harmonizing the national legislation with the Community one so that the tax legislation is not an exception to this process.

Specifically, the Republic of Moldova has undertaken to gradually harmonize the national legislation with the EU legislation, namely with the provisions of Directive 2006/112/EC of the Council of November 28, 2006, regarding the common system of the value added tax in the terms stipulated in the Association Agreement.

The main challenges of the process of harmonization of national VAT legislation are:

- the system of exemptions and reduced rate that exceeds the provisions of the Directive;
- the right to VAT refund.

The subject related to exemptions and reduced rate is a socially sensitive one, especially in the context of inflation following the pandemic and the regional conflict, but it creates some inefficiencies related to:

1. erosion of the tax base, respectively, of the budget revenues. In this regard, to increase the access of vulnerable population to socially important products, the VAT system of reduced rates and exemptions is the most expensive since it benefits all people, including those with high incomes;

2. creates economic distortions on two dimensions:

- the application of exemptions without the right of deduction within the value chain and not on final consumption. VAT represents a percentage of consumption, and the amount of VAT to reach the budget must be equal to the price of the final product multiplied by the VAT rate. This is ensured as a result of the right to deduct VAT, and each participant in the value chain have to pay a tax on their added value, which is determined as VAT output minus VAT input. If a VAT exemption without the right to deduct is applied in the production value chain of a product, the input VAT is not

recovered, it is included in the costs, and later the VAT is calculated from the VAT. This fact is demonstrated in Figure 3.

The above example shows that due to the fact that agricultural equipment is exempt from VAT without the right to deduct, the amount of VAT (20 m.u.) is included in the costs, and in addition, VAT is calculated from the VAT (20% from 20 m.u.), a fact that ultimately leads to a price increase by this amount (24 m.u.).

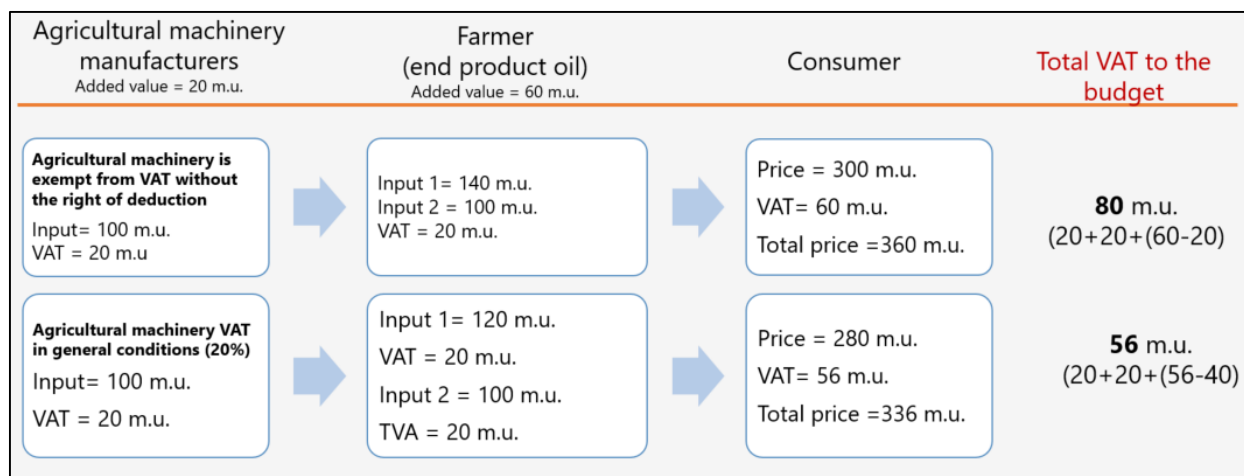


Figure 3. Example of the effect of applying the VAT exemption within the value chain.

- the application of reduce rate without the right to refund VAT if the amount of VAT related to inputs exceeds the amount of VAT related to outputs. This is particularly the case in the agricultural sector, where a reduced VAT rate of 8% applies without the right to a VAT refund. Consequently, farmers pay a higher VAT amount than the delivered agricultural production multiplied by the reduced rate.

It should be mentioned that these two problems described above are not present in the case of imported goods which makes domestic production uncompetitive, respectively economic distortions occur.

CONCLUSION

Following the research and analysis carried out, the following conclusions and recommendations result:

1. Achieving the development objectives from the perspective of VAT should be done by taking into account the primary function of VAT, namely the financing of budget expenditures;

2. There are deficiencies in the VAT system in Moldova, which create economic distortions, the following measures are being proposed:

- optimizing tax exemptions in part related to value added tax in accordance with EU Directives;

- increasing the VAT rate in agriculture up to 12% while reducing the VAT rate from 20% to 12% for fertilizers;

- refund of the VAT amounts accumulated in the account in the amount of salary taxes paid;

- transition from monthly reporting and payment of the VAT amount to quarterly for micro-enterprises.

REFERENCES

1. DE LA FERIA, R. (2015), EU VAT PRINCIPLES AS INTERPRETATIVE AIDS TO EU VAT RULES: THE INHERENT PARADOX (DECEMBER 18, 2015). IN M. LANG ET AL (EDS), RECENT VAT CASE LAW OF THE CJEU (LINDE, 2016), AVAILABLE AT SSRN: [HTTPS://SSRN.COM/ABSTRACT=2718107](https://ssrn.com/abstract=2718107) OR [HTTP://DX.DOI.ORG/10.2139/SSRN.2718107](http://dx.doi.org/10.2139/ssrn.2718107)
2. IFS (2011). QUANTITATIVE ANALYSIS OF VAT RATE STRUCTURES. IN ADAM ET AL., A RETROSPECTIVE EVALUATION OF ELEMENTS OF THE EU VAT SYSTEM: FINAL REPORT, TAXUD/2010/DE/328.
3. WARWICK R, HARRIS T, PHILLIPS D, GOLDMAN M, JELLEMA J, INCHAUSTE G, GORAUS-TAŃSKA K., (2022), THE REDISTRIBUTIVE POWER OF CASH TRANSFERS VS VAT EXEMPTIONS: A MULTI-COUNTRY STUDY, WORLD DEVELOPMENT, VOLUME 151, 2022, 105742, ISSN 0305-750X, [HTTPS://DOI.ORG/10.1016/J.WORLDDEV.2021.105742](https://doi.org/10.1016/j.worlddev.2021.105742).
4. GOÑI, E., LÓPEZ, J. H., & SERVÉN, L. (2011). FISCAL REDISTRIBUTION AND INCOME INEQUALITY IN LATIN AMERICA. WORLD DEVELOPMENT, 39(9), 1558–1569. [HTTPS://DOI.ORG/10.1016/J.WORLDDEV.2011.04.025](https://doi.org/10.1016/j.worlddev.2011.04.025).

CZU: 336.02+[336.71.078.3:336.711.6](100+478)

DOI: <https://doi.org/10.53486/dri2022.20>

REGULATION OF THE BANKING SECTOR – BETWEEN THE NEEDS OF THE MARKET AND THE RISKS OF OVER-REGULATION

DERMENGI DANIELA ²⁷

Abstract: *The crises of the 21st century have imposed to rethink the international regulatory and supervisory framework of the banking sector, in order to strengthen the banking risk management and restore trust in the banking system. Basel III came as a response to the global financial crisis of 2008. The compliance to the new international prudential regulatory standards it is considered necessary and beneficial. This ensures the international coherence of regulations, aspect that is so necessary in the age of globalization. Likewise, by complying with the minimum prudential requirements, the temptation to relax certain regulations in "good times" is avoided and thus the costs of a possible crisis is reduced. In the process of complying with international regulations, the authorities must evaluate the costs and benefits of each decision, in order to evaluate the needs of the market, the impact and the potential risks. Likewise, it is important that each regulatory initiative to be clearly communicated to the financial institutions, but also to the general public, in order to achieve the intended effects.*

Key words: *regulation, over-regulation, de-regulation, Basel III, cost-benefit*

JEL CLASSIFICATION: G28 GOVERNMENT POLICY AND REGULATION

INTRODUCTION

The global financial crisis of 2008, followed by the sovereign debt crisis in the European Union in 2012, highlighted the weaknesses of the financial sector, implicitly of the banking system. This required the rethinking of the international regulatory and supervisory framework of the banking sector, in order to strengthen the management of the banking risks and financial crises. (Nucu, 2011)

The crises of the 21st century dismantled the concept of the "invisible hand" enunciated by the economist Adam Smith in the 18th century. According to Smith, the markets have the ability to self-regulate and state's intervention should be limited. Many economists have realized that the society we live in is no longer characterized by that strong moral spirit specific to the 18th century. In our days the bank management has a high risk appetite and letting financial sector to self-regulate is a mistake.

Thus, the concept of the guardian state or the theory of state interventionism supported by the economist John Maynard Keynes is becoming more and more current. Keynes "considers that spontaneous market mechanisms are not sufficient to achieve basic objectives" and that "the state must play a corrective role". (Angelescu, 2012)

The legitimacy of regulation as an act of authority is itself a controversial subject. The question is how far the regulation should intervene, and how the state should intervene.

²⁷ Ph.D Student, email: danieladermengi@gmail.com
ORCID: 0000-0003-2318-9208

BANKING REGULATION – DEFINITION AND OBJECTIVES

We will start by defining some theoretical aspects regarding the banking regulation.

"Banking regulation is defined by the set of laws and norms applicable to banks in their activity". Depending on the reasons underlying their application, three classes of banking regulations can be distinguished:

a) economic regulation - aims to ensure that banks mobilize resources and grant loans under conditions of economic efficiency;

b) prudential regulation - it aims to guarantee the efficient allocation of resources, to minimize the risks that banks assume and to ensure the stability and financial health of each bank and of the banking system as a whole. In other words, the purpose of prudential regulation is to reduce economic regulation (economic deregulation).

c) monetary regulation - aims to maintain the stability of the external and internal value of the national currency, through the control exercised over the total liquidity of the banking system.

THE EFFICIENCY OF THE BANKING REGULATIONS

To demonstrate the necessity and benefits of imposing a new regulation, it is important to calculate the efficiency of the regulation. It must be analyzed the costs of establishing and administering the regulation, its benefits, but also the systemic coherence of the regulation. Regarding the costs of the regulation, they must be lower than the benefit brought by the implementation of the regulation. Estimating the effectiveness of regulation it is necessary to take into account not only the financial dimension, but also the social impact. (NBR, 2012)

Coherence refers to the situation when the decision to regulate the banking system imposes (de)regulations in other related areas as well, such as financial and capital markets, consumer protection, etc. Coherence is ensured not only when new regulations appear, but also in case of deregulations. Thus, it is necessary to identify not only the impact of the regulation that will be removed, but also the consequences of the regulations that remain in force. (NBR, 2012)

The internationalization of financial services also requires another type of coherence, between national regulatory regimes. This coherence ensures efficient and coherent management of systemic risks and of regional/global financial crises.

BASEL III – NEW BANKING REGULATORY FRAMEWORK

In response to the crisis that started in 2007 and lasted until 2009, the new Basel III standards appeared. These imposed a more rigorous prudential regulatory framework, new capital and liquidity requirements and new corporate governance standards, being seen by most economists as a re-regulation of the banking sector. Gradually, most countries have modified their national legislative framework according to the requirements imposed by Basel III. They promise to restore confidence in the banking system.

Next, it will be analyzed the main regulatory lines imposed by the Basel III Agreement and the necessity for their implementation.

Capital and liquidity requirements

The stability and safety of the banks and of the entire banking system starts from the capital of financial institutions. A high level of capital adequacy demonstrates the ability of the banks to manage and redistribute available cash flows. (Jora, 2010)

Thus, Basel III was oriented towards raising the capitalization and liquidity requirements of the banks, in order to increase their solidity and to reduce the risk to not be able to honor their obligations.

What must be emphasized by the regulators is the double effect of these regulations. More equity means more security, but it also means lower rates of return. But, once the function of financial intermediation is essential for the markets functioning, the increase in profitability requires the increase in income; it means the increase in banking services rates. In other words, when society wants more security of financial services, it must also assume a higher cost of them.

Likewise, imposing higher liquidity thresholds means less financial intermediation activity. Institutionally speaking, it is a reduction of the social function of banks. Economically speaking, it's a reduction in the financing of the real economy, therefore a reduction in economic growth, thus making it more difficult to get out of the recession. In other words, if we want more liquid banks, we will have lower risks of not being able to withdraw our deposits whenever we ask for them, but we will bear the cost of a reduced economic growth. (NBR, 2012)

- **Lending regulations**

The re-regulation of the banking lending refers to the introduction of limits and conditions in lending. The purpose of such regulations is to ensure economic growth, or this is the public interest purpose of financial intermediation. Lending means, or at least should mean, the full cycle completed with the repayment of money. That lending is likely to support the recovery of the economy. It is in the public benefit and in the private benefit of the parties not to stimulate the granting of unsustainable credits, because this deepens the recession, by wasting resources.

The criteria are usually established at the national level, and can aim at limiting a person's total indebtedness, introducing more drastic criteria regarding the advance and duration of a loan, respectively stressing the ability to pay installments depending on income risk, interest rate risk and foreign currency risk. (NBR, 2012)

- **Regulations regarding business ethics and remuneration mechanisms**

If previously business ethics was considered an individual, religious or secular cultural dimension of the trader, and that the remuneration mechanisms belong to the self-regulation of the market, the abuses of bank managers and the imbalances induced on the market by these abuses have changed the vision of the regulators. The classical vision according to which the trader's activity on the market will usually be ethical because otherwise the market would reject him has proven to be an erroneous one.

Bonuses established according to such a criterion as the volume of loans granted, regardless of their risk of default, can generate serious crises. Thus, it was necessary to introduce regulations by which bankers' incentives and bonuses to be linked to the long-term interests of the institution, by relating them to the bank's longer-term performance. (NBR, 2012)

- **Regulations regarding the macrostability**

The National Bank of Moldova defines financial stability as "the state of the economy characterized by the absence of major imbalances, which could lead to systemic crises, to the inability of the financial institutions to carry out uniform operations or to the collapse of financial markets. This condition is essential for the functioning of the national economy. Financial stability is maintained by regulating current and potential risks, implementing macro prudential instruments to prevent the accumulation of systemic risks and by ensuring the population's trust in the financial system." (NBM, 2019)

The retrospect of the crises from different countries and different times shows that, of all economic crises, banking crises leave behind the highest levels of public debt. Thus, it is considered that the prevention of financial instability is less expensive option in the medium term than leaving the evolution to the rules of the market. This involves the application of various preventive intervention tools on banks whose situation risks is unsustainable, such as last-resort financing, capitalization, takeover on the market or transfer of assets and/or liabilities, creation of bridge banks, temporary nationalization. All this presupposes important decisions regarding the source of financing - shareholders and obligors, the banking industry or the public budget, as well as the establishment of better corporate governance mechanisms - the rescue is done to re-launch the business, and not to lead it to another bankruptcy. (NBR, 2012)

In conclusion, the new Basel III Agreement aims to strengthen the stability of the banking system, by applying demanding standards aimed to improve the capacity of the banking system to absorb shocks from the economic and financial sector, as well as to reduce the risk of contagion from the financial sector to the real economy. (Walnut, 2011)

"The new standards are aimed to improve risk management, increasing the transparency and publication requirements for the banks, as well as solving the problems of the systemic banks. The measures impose, first of all, more demanding standards for banks regarding capital adequacy, liquidity requirements and leverage, the main aim being to reduce the negative effects of financial crises." (Walnut, 2011)

The major difference compared to the previous agreements is represented by the much expanded scope, the measures being both micro-prudential (targeting the individual risks of the banks) and macro-prudential (targeting the entire banking system). (Walnut, 2011)

Alignment with the requirements of European Union regulations requires the Moldovan banking system to move from compliance-based supervision to risk-based supervision. The domestic banking sector requires a systemic coherence of NBM regulations and a strengthening of its intervention capacities. Licensed banks must strive to reduce the risks of non-compliance and be prudent in their business decisions and strategies.

BUSINESS CYCLES AND REGULATORY DECISIONS

Economists K. Rogoff and C. Reinhart made a statistic of numerous economic cycles that took place throughout the world over the last centuries. It is noted that "the prudential regulation-deregulation cycle overlapped with long economic cycles worldwide. After the Great Depression of 1933, there followed a long period of regulation until the early 1970s, the main landmarks being fixed exchange rates, the Glass-Steagall Act in the United States, which provided for the separation of the activity of commercial banks from that of investment banks and the establishment of guarantee schemes of deposits." (NBR, 2015)

In 1971, amid the gold crisis, the international monetary system switches to floating exchange rates. Thus, a phase of deregulation is entered, by applying the principle of free markets. The main landmarks of this period are given by the liberalization of the London financial market and the repeal of the Glass-Steagall Act in the USA, along with the adoption of legislation that allowed the formation of financial conglomerates in America. The end point of this period was the Great Recession of 2007. (NBR, 2015)

In 2009, the Korean economist Joshua Aizenman presented an interesting approach to the regulation of the financial sector, considering both over-regulation and de-regulation as paradoxes of financial regulation. Because de-regulation is usually done in "good times" and over-regulation comes after crisis situations, it turns out that de-regulation can very often turn into over-regulation. In Aizenman's view, excessive, rapid de-regulation, or increasingly relaxed regulations over a long period of time, can increase the costs of a potential crisis. "Enforcement of minimum standards of prudential regulation and disclosure will lead national regulators to refrain from excessive de-regulation in good times" argues Joshua Aizenman in his paper. (Aizenman, 2009)

Thus, it is important that the banking regulation to be analyzed not only in the context of actual financial circumstances or in an extreme financial circumstances. The regulatory process must be aimed at obtaining an improved legislative framework, aimed at increasing confidence in the sector, orienting financial intermediation, strengthening the stability of the financial system by reducing systemic risks, protecting consumers and reducing financial crimes.

CONCLUSION

Although we are in an era of the market economy and private property, and the lack of state interference in the economy is an important value of democracy, the economic crises of the past years have led supervisors to intervene. The current crisis raised, against the financial environment, a whole series of ethical accusations, and claimed the authority to regulate what had been considered the founding value of capitalism, but seemed to have been lost.

However, because over-regulation often slows down the financial intermediation, the bankers see it as a risk for their activity. Thus, although de-regulation trends are attested in the financial sector, it is important that all decisions are passed through the cost-benefit analysis and examined from the perspective of different scenarios.

To avoid over-regulation, regulators analyze European directives from the perspective of needs and relevance for the local market. But it is important to respect the minimum prudential requirements imposed by the international framework, otherwise there is a risk that the relaxation of regulations in the "good times" will lead to a crisis with a possibly much higher cost.

It is important for regulators to determine the cost of new regulations and to communicate the need and long-term benefit of these regulations to the society and to the targeted financial actors. Likewise, the consistency is required when it is decided to impose new regulations or to de-regulate the sector.

REFERENCES

1. Aizenman, J. (2009). Financial crisis and the paradox of under and overregulation: *National Bureau of Economic Research Working Paper 15018*.
2. Angelescu, C., Dinu, M., Ghiță, P.T., Popescu, C. Dicționar de economie (ediția a doua), *Editura Economică*.
3. Jora, O-D., Butiseaca, A. (2010). The political philosophy and the political economy of public regulation. An apropos on the ultimate cause of the current crisis: *Romanian Economic and Business Review*.
4. Nucu, A.E. (2011). Provocările Basel III pentru sistemul bancar românesc: *Economie teoretică și aplicată*, 57-68.
5. National Bank of Moldova (2019). *Informație privind stabilitate financiară în Republica Moldova*, <https://www.bnm.md>
6. National Bank of Romania (2012). *Reglementare și dereglementare. De la teoria juridică la cazul practic al sectorului financiar astăzi*, <https://www.bnr.ro>
7. National Bank of Romania (2015). *Reglementarea și supravegherea bancară: principii, rol și provocări*, <https://www.bnr.ro>

Texts are published in authors edition

Civen into print on 1.12.2022
Editorial 13,40. Author's sheets 13,50.
Order No 45.

The Editorial-Polygraphic Service of
Academy of Economic Studies of Moldova
Chisinau, 59 Banulescu-Bodoni Str., MD-2005