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ECONOMY

EXCHANGE MARKET PRESSURE INDEX
AS A MACROECONOMIC RISK MEASURING INSTRUMENT

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ABSTRACT

The financial sector of the Republic of Moldova belongs to the developing ones and is characterized by a higher level of risk and, therefore, a higher likelihood of a systemic crisis. Globalization and development of advanced information technologies not only create great opportunities for rapid economic development, but also pose serious security threats to the economic development of states, especially in a developing economy. In these conditions, the issue of ensuring the financial stability of the state is becoming increasingly relevant. The state of the financial and foreign exchange market represents one of the most important aspects of the financial security of the state. This study has been developed as part of the scientific project 15.817.06.02A "Development of tools for measuring the financial stability of the state". The study analyzes various macro-financial risk management tools. The purpose of this study was to calculate the pressure index on the foreign exchange market of both the Republic of Moldova and the main partner countries in terms of international trade. The results of related studies conducted by the authors of this work, which revealed that stability indicators in the foreign exchange market are associated with foreign trade risks served as an argument for the authors of the work to calculate the pressure index on the currency market of Romania and the Russian Federation for comparison with the indicators of the Republic of Moldova. Methods used in research include theoretical and comparative approaches, descriptive statistics and econometric models. The results of the research showed that international trade and the foreign exchange market are interdependent. The first can be considered a channel for transmitting the currency crisis, since demand increases with increasing imports, and this leads to increased pressure on the foreign exchange market. Increased exports reduce pressure on the foreign exchange market. But the greatest impact on the foreign exchange market in the Republic of Moldova is made by remittances from abroad, which are directly correlated with the dynamics of labor exports. At the same time, it was concluded that at present, due to macroprudential regulation, there are no linear dependencies in financial markets and, therefore, there are no correlations, but only the interdependence of variables.

Keywords: macroeconomic risk, financial instability, currency crisis, pressure index on the foreign exchange market, countercyclical macroeconomic policies, macroprudential regulation.

Sectorul financiar al Republicii Moldova aparţine celor emergente şi se caracterizează printr-un nivel de risc mai ridicat şi, prin urmare, cu o probabilitate mai mare de apariţie a crizei sistemice. Globalizarea şi dezvoltarea tehnologiilor informaţionale avansate generează nu doar mari oportunităţi pentru o dezvoltare economică rapidă, dar creează şi grave ameninţări pentru securitatea, dezvoltarea economică a statelor, mai ales cu o economie emergentă. În aceste condiţii, problema asigurării stabilităţii financiare a statului capătă o amploare tot mai semnificativă. Unul dintre cele mai importante aspecte ale securităţii financiare

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a unui stat este starea pieţei financiar-valutare. Prezentul studiul a fost elaborat în cadrul proiectului 15.817.06.02A „Elaborarea instrumentarului de măsurare a stabilităţii financiare a statului" şi analizează diferite instrumente de gestionare a riscurilor macrofinanciare. Scopul prezentei cercetări a constat în calcularea indicelui de presiune al pieţei valutare atât a Republicii Moldova, cât şi a principalelor ţări partenere din punct de vedere al comerţului internaţional. Drept argument al deciziei autorilor de a calcula indicele presiunii valutare a României şi a Federaţiei Ruse în coraport cu cel al Republicii Moldova pot servi rezultatele altor studii efectuate de autori, care demonstrează faptul că indicatorii de stabilitate pe piaţa valutară sunt asociaţi riscurilor comerciale externe. Metodele utilizate includ abordări teoretice şi comparative, statistica descriptivă şi modele econometrice. Rezultatele studiului au arătat că comerţul internaţional şi piaţa valutară sunt interdependente primul poate fi considerat un canal de transmitere a crizei valutare, deoarece odată cu majorarea importurilor creşte cererea, iar aceasta duce la majorarea presiunii asupra pieţei valutare. Iar majorarea exporturilor reduce presiunea asupra pieţei valutare, dar cel mai mare impact asupra pieţei valutare în condiţiile Republicii Moldova il au remitenţele din străinătate care sunt într-o corelaţie directă cu dinamica exporturilor de muncă. Totodată, s-a ajuns la concluzia că, în prezent, datorită reglementărilor macroprudenţiale, pe pieţele financiare nu există dependenţe liniare şi, în consecinţă, nu există corelaţii, doar interdependenţă variabilă.

Cuvinte-cheie: *risc macroeconomic, instabilitate financiară, criză valutară, indicele presiunii asupra pieţei valutare, politici macroeconomice contraciclice, reglementare macroprudenţială.*

Финансовый сектор Республики Молдова относится к развивающимся и характеризуется более высоким уровнем риска и, следовательно, более высокой вероятностью возникновения системного кризиса. Глобализация и развитие передовых информационных технологий не только открывают большие возможности для быстрого экономического развития, но и создают серьезные угрозы безопасности экономическому развитию государств, особенно в условиях развивающейся экономики. В этих условиях вопрос обеспечения финансовой устойчивости государства становится все более актуальным. Одним из важнейших аспектов финансовой безопасности государства является состояние финансово-валютного рынка. Данное исследование было разработано в рамках научного проекта 15.817.06.02A «Разработка инструментов для измерения финансовой устойчивости государства». В исследовании анализируются различные инструменты управления макро-финансовыми рисками. Целью данного исследования явилось вычисление индекса давления на валютный рынок как Республики Молдова, так и основных стран-партнеров с точки зрения международной торговли. Результаты предыдущих исследований авторов выявили, что показатели стабильности на валютном рынке связаны с внешнеторговыми рисками. Это послужило аргументом для решения авторов работы рассчитать индекс давления на валютный рынок Румынии и Российской Федерации для сравнения с показателями Республики Молдова. Используемые методы включают теоретический и сравнительный подходы, описательную статистику и эконометрические модели. Результаты исследования показали, что международная торговля и валютный рынок взаимозависимы. Первый можно считать каналом передачи валютного кризиса, поскольку с ростом импорта увеличивается спрос, а это приводит к усилению давления на валютный рынок. Увеличение экспорта снижает давление на валютный рынок. Но наибольшее влияние на валютный рынок в Республике Молдова оказывают денежные переводы из-за рубежа, которые находятся в прямой корреляции с динамикой экспорта рабочей силы. В то же время, был сделан вывод о том, что в настоящее время из-за макропруденциального регулирования не существует линейных зависимостей на финансовых рынках и, следовательно, нет корреляций, а только взаимозависимость переменных.

Ключевые слова*: макроэкономический риск, финансовая нестабильность, валютный кризис, индекс давления на валютный рынок, антициклическая макроэкономическая политика, макропруденциальное регулирование.*

INTRODUCTION

During the transformation stage, the role of national regulation of the financial market of the Republic of Moldova increases with the goal of preventing crisis development. Given that the financial sector of the

Republic of Moldova belongs to emerging markets, it is characterized by higher levels of risk, and, therefore, a higher likelihood of a systemic crisis. Financial crisis represents an essential element of the systemic economic crisis. The overlapping of two crises makes it difficult to follow the path of sustainable growth and makes structural and institutional reforms a necessity.

Periods of financial instability are accompanied by significant socio-economic losses. Macroeconomic shocks can affect the financial sector through two main channels: first of all, they affect the value and quality of assets that are held in their portfolios by financial institutions; secondly, in terms of general economic instability, the banking sector indicators are deteriorating. An up to date study of systemic risk, the relationship of its indicators with the main macroeconomic indicators, the quantitative assessment of accumulated risk and the development of macroeconomic policies to prevent the buildup of systemic imbalances presents relevance.

The following systemic risks present a potentially greater negative effect for the national economy:
– bankruptcy of certain financial institutions;
– recession in the real sector, negatively affecting the stability of most financial institutions;
– hidden accumulation of imbalances in the financial sector during the cycle (in particular, the rapid growth of unsecured lending, massive investments of revalued assets).

Systemic risks arising in one of the segments extend to other segments of the financial sector and lead to a deterioration in the overall macroeconomic dynamic. Features of the financial market of the Republic of Moldova are associated with the presence of many macroeconomic risks of a systemic crisis (systemic crises are associated with the passage of the country and the world through deep institutional and technological changes, with a change in the technological base, which brings the economy to a whole new level of systemic efficiency), such as:
• weak national currency;
• high level of dollarization of the economy;
• growing external debt;
• budget deficit;
• low GDP growth rate;
• sustainable current account deficit;
• weak banking regulation;
• underdevelopment of the stock market and specialized credit and financial institutions.

A significant channel for the emergence and spread of a crisis in the Republic of Moldova is the foreign economic sector (which comes in the form of an increase in remittances and a growth rate of imports). Crises spread between countries as the key macroeconomic indicators change. The World economic and financial systems are becoming more integrated due to the rapid expansion of international trade in goods, services and financial assets. Along with the intensification of economic integration processes, there is an increase in the level and pace of financial integration. Two systemic crises in the Republic of Moldova (in 1998 and 2008-2009) were induced by shocks in the balance of payments.

However, the ways in which a crisis spreads can vary. Thus, in accordance with the scientific characteristics, the crisis of 2015 in the Republic of Moldova has the features of both a currency and a banking crisis, which in its turn is defined as a complex crisis. During the crisis period, there was a significant financial and macroeconomic imbalance ("overheating" of the domestic debt market, a breakdown in the economic agents' expense dynamics from the dynamics of their income, etc.).

DEGREE OF SCIENTIFIC APPROACH AND ITS REFLECTIONS IN THE SPECIALIZED LITERATURE

Existing methods and tools for assessing the financial sector are developed by the World Bank and the IMF (Financial Sector Assessment Program – FSAP); Committee attached to the Bank for International Settlements (Basel Committee on Banking Supervision); OECD, International Securities Regulatory Organization (IOSCO), International Association of Insurance Supervisors (IAIS), International Accounting Standards Board (IASB); The Financial Stability Board (Coordinator of the Plenipotentiary Representatives of the National Central Banks, the Ministries of Finance and Financial Market Regulation of the World's Most Developed Countries, and the Major G-20 International Financial Organizations) and others (Perciun 2014; Colesnicova 2015; Perciun, Colesnicova et al. 2018).

It should be noted that the most commonly used crisis prevention instrument is the Early Warning Systems, which allow rapid identification of problems in the economy, based on indicators that emit signals, which facilitates the prompt taking of crisis prevention measures. These early warning systems can be

defined as a set of processes, models, indicators, which summarize the information and data needed to identify the risks faced by financial institutions, generally the financial system, allowing the forecast of a crisis in a certain period of time in the future (Perciun 2014).

The most updated, developed and applied in practice methods for assessing the risks of the financial sector are the following:

1) the signal, or nonparametric method;

2) probit and logit modeling;

3) building leading indices of crisis.

In contemporary research, the methodology of the "signal" approach has become quite widespread. The "signal" approach using by Graciela Kaminsky, Saul Lizondo and Carmen Reinhartin in 1998 (Kaminsky, Lizondo, Reinhart 1998), is based on an analysis of the behavior of a specific set of macroeconomic and financial indicators, which, in crisis-free periods, refer to the pre-crisis periods and periods of crisis implementation as private. A signal of an approaching crisis, given by one or another private indicator, is considered to be going beyond the range of acceptable (threshold) values. If a private indicator gives out a signal for the predetermined period of time before the crisis (called a "signal window"), then such a signal is referred to as "good". On the contrary, if a private indicator gives a signal, but the crisis does not occur during the signal window, then such a signal is considered "bad" ("noise"). The length of the "signal window" is set expertly.

Thus, based on the analysis of several works, the information on the capacity of indicators to predict the crisis is presented (table 1).

Table 1

Trends of indicators that predict financial instability

Group of indicators	Indicator	Trend before the crisis
Internal macroeconomic policy	The growth rate of GDP in constant prices	decrease
	The growth rate of outflows in constant prices	decrease
	The budget deficit relative to GDP	increase
	Unemployment	increase
External context (external economic conditions)	Current account balance of payments	decrease
	Export	decrease
	Import	increase
	The balance of payments	decrease
	Gold and foreign exchange reserves	decrease
	Capital outflow	increase
	External debt	increase
	Net outflow of capital	increase
	Public budget deficit	increase
Fundamental indicators	Money supply	increase
	Sufficient reserves	increase
	M2 relative to gold and currency reserves	increase
	The multiplier	increase
	The monetization of economy	increase
Financial system health indicators	Internal credit	increase
	Deposits	decrease
Shocks affecting the financial sector	Inflation	increase
	Actual effective exchange rate	increase
	Real domestic credit interest rate on the interbank market	increase
	Ratio between credit rate and deposit rate (margin)	increase
	The spread between the internal credit rate and the LIBOR rate	increase
	Trade conditions	decrease
Pressure on the foreign exchange market	**The Exchange Market Pressure Index**	increase

Source: Elaborated by the authors based on their previous researches (Perciun 2014; Colesnicova 2015; Perciun, Colesnicova et al. 2018).

We note that one of the indicators to be monitored is the pressure on the foreign exchange market.

The main signs of a currency crisis are a sharp drop in the exchange rate and the exhaustion of the foreign exchange reserves. In scientific literature, a currency crisis, as a rule, refers to the depreciation of the

national currency by 25-30% or more over several months and the same sharp reduction in foreign exchange reserves. Paul Krugman described this type of crisis in the framework of "Balance of Payment Crises and Capital Flight" model (Krugman 1979).

The situation of financial instability of the banking sector is characterized as a full-blown banking crisis if at least one of the following conditions is met:

– the share of bad loans in the total assets of the banking sector exceeds 10%;

– the cost of measures to improve the situation in the industry exceeds 2% of GDP;

– the result of problems in the banking sector became the nationalization of a significant share of banks;

– there were massive deposit withdrawals from banks (depositor "raids"), emergency measures were applied (freezing deposits, announcing long "bank holidays"), or introduction of mechanisms for state deposit guarantee (Demirguc-Kunt, Detragiache 1998) [2].

Complex crisis – a crisis situation characterized by the simultaneous or sequential manifestation of several types of crises, due to the similarity or interconnectedness of the causes that gave rise to them (World Bank 2012).

The relationships between a systemic risk of the financial sector and a major macroeconomic risk should be taken into account when developing countercyclical macroeconomic policies and macroprudential regulation. Currently, the following risk management tools are applied:

1. *macroeconomic instruments* are aimed at creating macroeconomic balance, in particular at the achievement of financial stability, overcoming budget deficit, stabilizing inflation, ensuring a positive balance of payments and maintaining a stable national currency rate. Among these tools, we can distinguish the mechanisms of monetary, fiscal policy;

2. *institutional instruments* are aimed at the formation and regulation of the legal and organizational-economic environment, the approval of a single operating procedure for all market entities. Institutional quality plays a significant role in the reduction of the likelihood of both the crisis itself and its continuation. Among these tools we can distinguish the legislative, regulatory, technical regulations;

3. *infrastructural support* presumes the participation of government agencies in shaping markets for the factors of production (construction of transport infrastructure, transmission mechanisms; financing fundamental science and co-financing applied developments, testing facilities, training, etc.);

4. *information tools* aimed at creating a single information space, providing economic agents with economic, legal, statistical and other useful information, in its turn resulting in an effective and informed management decision making process. The lack of proper attention to an effective financial monitoring of the Republic of Moldova's economy does not allow timely planning and control of the necessary measures for strategic crisis prevention, as a result of which the state responds to an escalating financial crisis.

An important role in the policy of financial stability should be played by the regulatory policy aimed at sustainable growth achievement. Tinbergian assignment in which, under normal circumstances at least, price stability is assured by interest rate policy while financial stability is assured by macro-financial policies, be they capital requirements or credit restrictions, general or sector-specific. During the crisis, "it is important to ensure an adequate balance between the macroprudential and microprudential regulation of risk control, as well as the development of necessary tools to monitor and evaluate the accumulation of macroprudential risks within the financial system" (Himino 2010). A special role in the achievement of financial stability should be given to the National Bank of Moldova. Problems that arose during the crisis remain relevant for the Republic of Moldova:

– Does the central bank have the necessary tools? Are they outdated due to non-use, or is it necessary to create an administrative or legal basis for the creation of new ones?

– Is the concept of central bank independence adequate and effective enough for new responsibilities? Does it need to expand its legal immunity or make changes in the sphere of legislative supervision in order to fulfill its responsibilities of financial stability?

– Are the loss allocation mechanisms reliable enough to take on the balance sheet risks associated with the policies, such as the recent measures of restoring financial stability?

– Does the central bank require changes in its administrational governance arrangements? (Caruana 2010).

METHODOLOGY OF SYSTEMIC RISK MEASUREMENT

The systemic risk quantitative assessment of the financial sector can be carried out by different methods. Table 2 represents the following instruments and methods measuring macroeconomic risk.

Table 2

Approaches of quantifying systemic risk of the financial sector

Target	Assessment of the financial system and potential threats			Crisis forecasting	
Approach	Stress testing	Network methods	Value-at-Risk based Indicators (CoVaR, MES, SRISK)	Indicators of early detection	Synthetic Indexes
Approach essence	Testing financial institution's vulnerabilities / the system integrally to shock scenarios.	Perception of the financial sector as a set of players connected by contracts.	Evaluation of each participant's contribution to the systemic risk.	Defining the onset of a crisis as an exceeding indicator of the threshold value.	Identification of "mode switching effect" from the stable development of economy to crisis.
Benefits	Identification of financial institution's vulnerabilities Estimated information for the risk level supervision	Tracking the relationships between system elements	Identification of institutions the surveillance and regulation of which should be more scrupulous	Capacity of early crisis tendencies detection	Aggregation of high-frequency market data to monitor the situation online
Shortcomings	Uncertainty of scenario selection Errors in the collection of statistical information Nonlinear relationships between the system elements	High complexity of models due to the numerous possible scenarios of interaction between the players. The necessity of specifying the conditions that simplify the actual situation	Existing indicators giving conflicting results.	Sensitivity to the selection of the research period - retrospective functioning	Sensitivity to the selection of the research period - retrospective functioning

Source: Elaborated by the authors using (Щепелева 2016).

Stress-test is a more often used tool and allows the assessment of the financial situation of credit institutions and their ability to resist the challenges based on identifying weaknesses in their work. Therefore, stress-tests are a group of methods for financial assessment of an institution in situation of the crisis and the tools for managing economic risks (Perciun 2014; Perciun et al. 2014; Colesnicova 2015; Perciun, Colesnicova et al. 2018).

Calculations of leading crisis indexes

Contemporary literature offers an analytical review of the existing methods for prevention, diagnosis, and intervention to solve crisis situations. In foreign practice, integrated and local "crisis" indicators are being calculated:

‒ financial stress indexes (St. Louis Fed FSI; ECB Composite Indicator of Systemic Stress; Kansas City Fed FSI; IMF Advanced Economies FSI; AKRA FSI and others);

‒ financial condition indexes (Chicago Red FCI; Bloomberg FCI);

‒ composite leading indicators (SOI TsMAKP);

‒ pressure index on the foreign exchange market;

‒ monetary index;

‒ credit gap and debt burden indicators; etc.

The following conclusions were drawn in this study on the use of the crisis indicators data based on international experience:

1. There is a lack of a clear ideology for building crisis indicators: As a rule, they are randomly "assembled" from various particular indicators, without the presence of internal logic.

2. In modeling of the central monetary institutions' activities, there is a deviation from the existing institutional theory.

3. Difficulties in using certain key indicators (for example, GDP) due to the lack of official monthly data.

4. The multifactorial nature of the process of economic growth, which makes it difficult to choose the correct monetary indicators that should act as real growth drivers.

5. Nonlinearity between some important monetary indicators of parameters for economic growth, which complicates the construction of a simple anticipatory indicator.

6. Identification of future collisions - ignoring minor changes in the monetary climate.

7. Short lags of anticipatory indicators.

8. The absence of a "recognized leader" (Екимова 2018).

The Exchange Market Pressure Index (EMPI)

EMPI is often used as the simplest anticipatory indicator. In 2009, the IMF proposed the use of the IMF financial stress index for the emerging economies, and the EMPI as one of five indicators. This indicator is practically used in different countries.

Firstly, the EMPI is used as a crisis indicator for assessing financial instability, for example, applying the signal approach by using this index by P. Trunin and E. Inozemtsev in 2012 (Trunin, Inozemtsev 2012).

Secondly, the currency pressure index was used to identify the period of financial crisis in the binary choice models, probit and logit models - using by Matthieu Bussiere and Marcel Fratzscher in 2006 (Bussiere, Fratzscher 2006) and also by Graciela Kaminsky and Carmen Reinhart in 2000 (Kaminsky, Reinhart 2000).

Thirdly, the currency pressure index is used to assess the monetary policy within the framework of exchange rate management and to assess the adequacy of the foreign exchange regimes.

Also, the currency pressure index is used to assess the features of regional crises (Mody, Taylor 2007) and integration processes.

The exchange market pressure index, as a rule, is the weighted average of the rate of depreciation of the national currency (usually compared to the US dollar, in nominal or real terms), monthly changes in foreign currency reserves (in percentage terms) and the monthly changes in interest rates.

A financial crisis occurs when pressure in the financial market is abnormally high. The main problem of this methodology is to determine the coefficient value. Various studies suggest using a value ranging from 1.2 to 3.

$$Crisis = \begin{cases} 1, & \text{if} \quad EMP_{it} > \beta\sigma_{EMP} + \mu_{EMP}; \\ 0 - & \text{in other cases;} \end{cases}$$

(1)

The group of countries significantly affected by the crisis includes countries for which the deviation of the EMP index from its average value adds up to over two standard deviations calculated on the basis of historical values of the EMP index for the analyzed country (Lukianenko et al. 2013).

DATA SOURCES, METHOD UTILIZED AND EMPI CALCULATIONS

In the numerous researches there are different methods which used to identify the currency pressure index. Each author proposes his own methodology regarding the calculation of the currency pressure index. The methodology developed by G. Kaminsky and K. Reinhart (Kaminsky, Reinhart 1999) will be applied in the present research. Their approach to identifying the EMP index can be viewed by the following formula (2):

$$\text{EMPI}_{i,t} = \frac{\Delta e_{i,t}}{e_{i,t}} - \frac{\sigma_e}{\sigma_r} \times \frac{\Delta r_{i,t}}{r_{i,t}} \tag{2}$$

where, $\text{EMPI}_{i,t}$ – the pressure index of the foreign exchange market for the country i during the period t;

$e_{i,t}$ – the currency exchange rate of the country i in relation to the currency of the base country during the period t;

σ_e – the standard exchange rate gap ($\Delta e_{i,t}/e_{i,t}$);

$r_{i,t}$ – the international reserves of the country i during the period t;

σ_r – represents a standard aberration in foreign international reserves ($\Delta r_{i,t}/r_{i,t}$).

Table 3

EMPI calculations, 1995-2018

	EMPI	mean deviation
1995	0.146833	0.004492
1996	0.2427	0.004492
1997	-1.79915	0.004492
1998	-4.91071	0.004492
1999	-1.73474	0.004492
2000	-0.47287	0.004492
2001	-0.51884	0.004492
2002	-0.14992	0.004492
2003	2.354603	0.004492
2004	0.271331	0.004492
2005	0.299702	0.004492
2006	3.507408	0.004492
2007	3.221559	0.004492
2008	-1.56308	0.004492
2009	-0.23352	0.004492
2010	1.812387	0.004492
2011	2.069182	0.004492
2012	0.872831	0.004492
2013	-4.38248	0.004492
2014	-6.59638	0.004492
2015	0.917606	0.004492
2016	4.083223	0.004492
2017	2.56232	0.004492
2018	2.00000	0.004492

Source: Authors' calculations based on the NBM data.

The growth of the EMPI represents an increase of tension in the foreign exchange market. The crisis is evidenced by values that increase from their average value by more than three standard deviations. A constant increase in the index may indicate a worsening of the economic situation, a decrease of the index may demonstrate the effectiveness of anti-crisis measures, etc.

Based on the theory of currency crises, the instability indicators within the foreign exchange market are associated with the risks of international trade. Given the foreign economic dependence

of the Republic of Moldova on the export of raw materials and imports of energy resources, it is important to monitor the dynamics of the foreign exchange market in the countries which are the main trading partners of the Republic of Moldova.
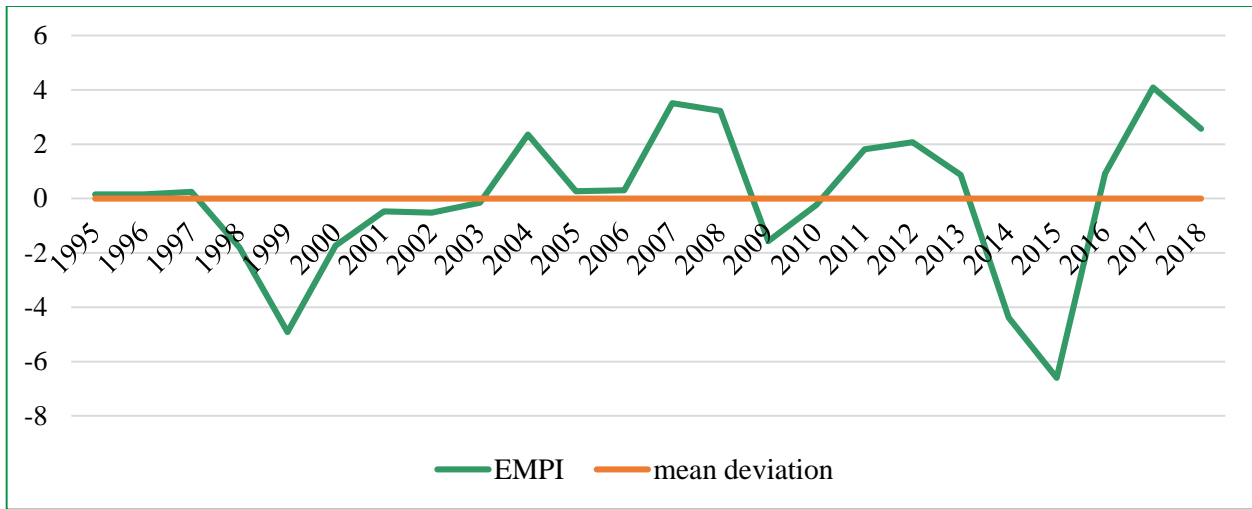
Figure 1. EMPI for the Republic of Moldova, 1995-2018
Source: Elaborated based on authors' calculations.

EMPI increases with the depreciation of the national currency or with the decline of international reserves. The crisis situation is highlighted by values that increase from the average value by more than three standard deviation points. Therefore, in the period 2008-2009, before the crisis, the EMP index exceeded the threshold level 3 times, thus, there was a significant increase of the index two years before the banking crisis in 2014-2015, but the most significant index growth was recorded in 2017, which indicates an increase in the market currency during this period. The consequences of the stressful situations during the crisis periods 98-99, 2009, 2014-2015 began to amortize the national currency against the base currencies and reduce international reserves, especially in 2014 (with an increase of 24.6 p.p.).
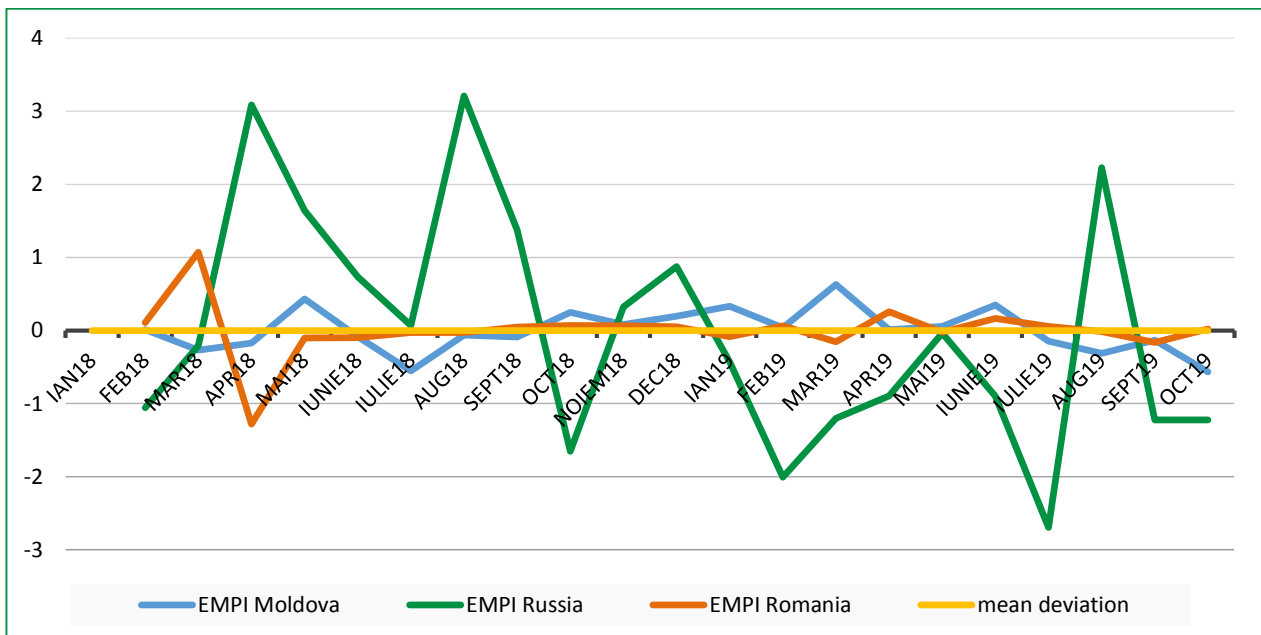
Figure 2. EMPI for the Republic of Moldova, Russian Federation, Romania
Source: Elaborated based on authors' calculations.

The channels of commercial and financial transactions, the impact of the crisis, may interact with each other, as the availability of commercial credit is related to the volume of trade. Increased imports increase demand and pressure on the foreign exchange market. The increase in exports reduces the pressure on the foreign exchange market, but the biggest impact under the conditions of the Republic of Moldova on the foreign exchange market is due to the dynamics of remittances from abroad. Thus, the highest values of the EMPI indicator for the last two years have been associated with the increase in remittances abroad in spring 2018 and early 2019. However, modern financial markets are so complex and interconnected that there can be no linear dependencies, thus, only variable interdependence.

MAIN CONCLUSIONS

Trade and financial channels for transferring the impact of the crisis can interact with each other, since the availability of trade credit is related to the volume of trade. Import growth increases demand, and pressure on the foreign exchange market increases. Export growth reduces pressure on the foreign exchange market, but the greatest impact in the conditions of the Republic of Moldova on the foreign exchange market is associated with the dynamics of labor exports, or remittances from abroad. Thus, the highest values of EMPI over the past two years were associated with an increase in remittances from abroad in the spring of 2018 and at the beginning of 2019. However, modern financial markets are so complex and interconnected that there can be no linear dependencies, and therefore no correlations, only variable interdependence.

Thus, country-specific sources of vulnerability to external shocks include solvency and liquidity problems, weak domestic balances, and factors associated with an open economy. These factors increase the vulnerability to crises related to the balance of payments, to the capital account, and to the foreign exchange market, and also potentially increase the degree of stress transfer originating from investing countries.

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PERFORMANCE DETERMINANTS OF THE INSURANCE COMPANY'S ACTIVITY

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ABSTRACT

Considering the growing role of the insurance protection function in a dynamic business environment, the issue of efficient management and solvency of insurance companies is becoming a priority. The purpose of this study is to identify the performance determinants of the insurance business. To achieve this goal, the authors researched methodological aspects of assessing the financial performance of the insurance company in terms of absolute and relative indicators of financial results. The authors consider that profit and profitability indicators are important to give a quantitative and qualitative assessment to the financial management of companies. The monographic method and the causal explanation were applied to concretize the model for forming the overall financial result of the insurance company. The methodological approach in order to test the hypothesis was made by adapting the factorial model for analysing the profitability of sales revenues to the specifics of the insurance company's activity. Profit and profitability indicators play an important role in the process of qualitative and quantitative evaluation of the company's financial management. The analyses performed by the authors based on the public financial statements of the insurance company "Acord Grup" SA, the reports of the National Financial Market Commission (NCFM) and the reports of the Romanian Financial Supervisory Authority (FSA) highlighted the decreasing trend of profitability indicators of insurance companies. In order to react as quickly as possible and manage the given situation, the authors recommend to the managers of the insurance companies to apply the factorial analysis models, in order to capture the determinants of the profitability indicators of the insurance activity, which require an increased attention.

Keywords: insurance, profit, profitability, performance, factorial model, insurance portfolio.

Având în vedere rolul crescând al funcției de protecție a asigurărilor într-un mediu de afaceri dinamic, problema gestionării eficiente și solvabilității societăților de asigurare devine o prioritate. Scopul acestui studiu constă în identificarea factorilor determinanți ai performanței activității de asigurări. Pentru realizarea acestui scop autorii au cercetat aspectele metodologice ale evaluării performanței financiare a societății de asigurări prin prisma indicatorilor absoluți și relativi ai rezultatelor financiare. Autorii consideră că indicatorii de profit și rentabilitate sunt importanți pentru a da o apreciere cantitativă și calitativă gestiunii financiare a societăților. Metoda monografică și explicația cauzală au fost aplicate pentru concretizarea modelului de formare a rezultatului financiar global al societății de asigurări. Demersul metodologic în vederea testării ipotezei s-a realizat prin adaptarea modelului factorial de analiză a rentabilității veniturilor din vânzări la specificul activității societății de asigurări. Indicatorilor de profit și rentabilitate le revine un rol important în procesul de evaluare calitativă și cantitativă a gestiunii financiare a companiei. Analizele efectuate de autori în baza Situațiilor financiare publice ale societății de asigurări „Acord Grup" S.A., a rapoartelor Comisiei Naționale a Pieței Financiare (CNPF) și a rapoartelor Autorității de Supraveghere Financiară din România (ASF) au scos în evidență tendința de descreștere a indicatorilor de profitabilitate a societăților de asigurări. Pentru a reacționa cât mai promt și gestiona situația dată, autorii recomandă managerilor societăților de asigurări să aplice modele de analiză factorială, pentru a surprinde factorii determinanți ai indicatorilor de rentabilitate ai activității de asigurare, care necesită o atenție sporită.

Cuvinte-cheie: asigurări, profit, rentabilitate, performanță, model factorial, portofoliu de asigurări.

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Учитывая растущую роль функции страховой защиты в динамичной бизнес-среде, проблема эффективного управления и платежеспособности страховых компаний становится приоритетной. Целью данного исследования является выявление факторов, определяющих эффективность страхового бизнеса. Для достижения этой цели авторы исследовали методологические аспекты оценки финансовых показателей страховой компании по абсолютным и относительным показателям финансовых результатов. Показатели прибыли и рентабельности важны для количественной и качественной оценки финансового менеджмента компаний. Монографический метод и причинно-следственная связь были применены для конкретизации модели формирования общего финансового результата страховой компании. Для проверки гипотезы факторная модель анализа доходности выручки от продаж была адаптирована к специфике деятельности страховой компании. Аналитические данные по компаниям и по отрасли были обработаны с использованием сравнительного анализа, табличного и графического метода. Показатели прибыли и рентабельности важны для количественной и качественной оценки финансового менеджмента компаний. Анализ, выполненный авторами на основе публичной финансовой отчетности страховой компании "Acord Grup" SA, а также отчетов Национальной комиссии по финансовому рынку и Органом по финансовому надзору Румынии (FSA) выявил тенденцию к снижению показателей эффективности страховых компаний. Чтобы вовремя реагировать и управлять ситуацией, авторы рекомендуют менеджерам страховых компаний применять модель факторного анализа, чтобы охватить факторы, определяющие показатели эффективности страховой деятельности компании, которые требуют особого внимания.

Ключевые слова: страхование, прибыль, рентабельность, эффективность, факторная модель, страховой портфель.

INTRODUCTION

Insurance is considered one of the most important components of the financial market, thus contributing towards the increasing of the efficiency of all areas of activity. The current conditions of economic development and society determine special conditions with regard to the financial stability of insurance companies as a strategic factor in the economic security of social reproduction, increasing business activity and improving the investment climate.
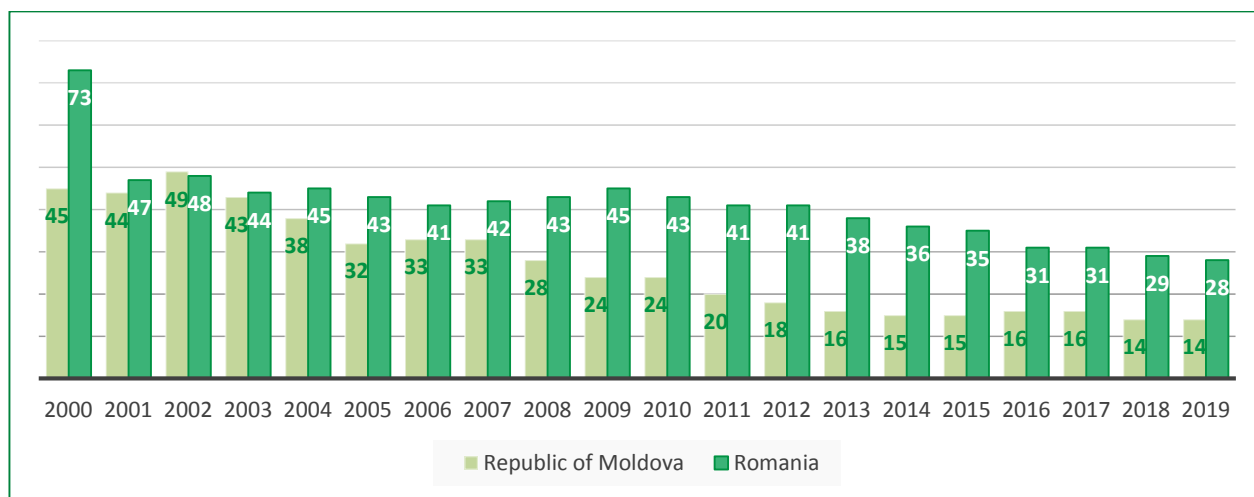
Figure 1. Dynamics of the number of insurance companies in RM and Romania, 2000-2019
Source: Elaborated by authors based on the reports of the National Commission for Financial Markets of the Republic of Moldova and of the Romanian Financial Supervisory Authority [1]
https://asfromania.ro/publicatii/rapoarte-anuale/rapoarte-asf
https://www.cnpf.md/ro/rapoarte-anuale-6315.html

Recently, we are witnessing an involution of the insurance market in the Republic of Moldova, given that the management of companies has made changes in their development strategy. For example, Aliance Insurance Grup JSC and Asito JSC together with other companies went through reorganizations, which resulted in the restructuring of business processes, changes in shareholding and the name of the company, but failed to overcome the financial difficulties. Therefore, in 2018, the NCFM withdrew the activity licenses of these two companies.

We are witnessing a shrinking of the insurance market in the last two decades. Both in the Republic of Moldova and in Romania the number of insurance companies decreased significantly (figure 1).

Such a conclusion also results from the dynamics of the main performance indicators specific to the insurance field: the insurance degree of penetration and density. If the insurance density registered a modest increase, then the downward dynamics of the degree of penetration in the last 6 years clearly reflects the involution of this field with negative macroeconomic implications (figure 2).
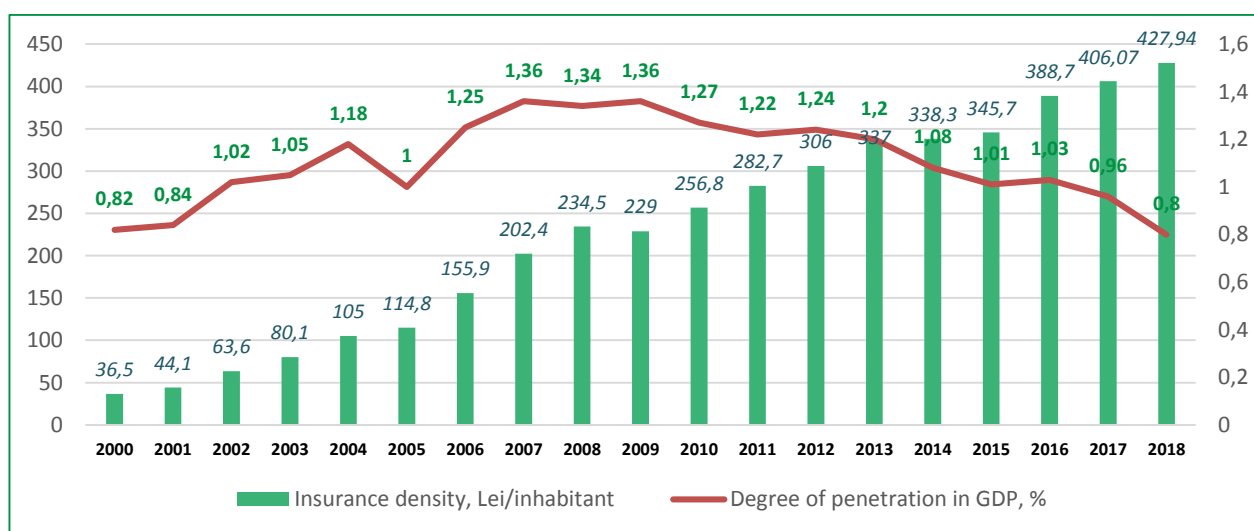
**Figure 2. The evolution of the main performance indicators of the insurance field
in the Republic of Moldova (2000-2018)**
Source: Elaborated by authors based on NCFM reports [2].

At the base of the performance indicators of the insurance field are the insurance premiums, which, viewed individually at the level of the insurance company, represent a determining factor of its performance. Insurance premiums determine the level of solvency, as by collecting premiums the company supplies itself with liquidity. At the same time, insurance premiums represent a factor that influences the size and quality of performance indicators (profit or loss).

In the context of the above mentioned, the research hypothesis was formulated: *the financial performance of the insurance company depends on the size of the premiums collected from the insurance contracts and the compensation expenses.*

This problem' solving requires an appropriate methodological approach for the financial performance indicators, which ensures an in-depth analysis of the profit-generating activities specific to the insurance field.

LITERATURE REVIEW

In the authors' opinion, at the present stage, both the analysts and managers of the insurance companies in the Republic of Moldova, as well as in Romania pay a great attention to solvency and liquidity indicators, considering the fact that management must be oriented towards sustainable growth, which requires a periodical monitoring of the economic and financial situation. Such an audit is performed with the methodological tools of the financial analysis specific to the insurance field. In the specialized literature different methodological approaches to the financial analysis of the insurance companies' activity are described [3, Văcărel, I., BERCEA, F, 2006]. Most often they address

the issue of financial solvency, the sufficiency of assets that form the reserves of the insurance company. A complex analysis of the financial situation of the insurance company is recommended by the National Association of Insurance Companies (NAIC). [GHINZURG A. 2006].

At the same time, to be considered rational, economic activities must generate profit. Profit is perceived as a force that directs the market economy and is the raison d'être of any economic entity, being considered a gain that remunerates the basic, classic factors of production: capital, land and labour.

According to the modern theory of financial management, the fundamental goal of any company is to maximize the market value. The value of the company is perceived as an indicator of future opportunities to increase its revenues. Given this aspect, in the strategic vision, the profitability indicator can be considered an indicator that characterizes the degree of growth of the market value of the insurance organization.

The methodological tools for assessing the market value of companies are largely based on indicators of economic profit, free cash flow and their changes. Economic profit is interpreted as the added value obtained by the company's owners over the value, they could achieve from optional investment alternatives. Thus, a positive economic profit reflects the value creation and the efficient use of capital. The positive net cash flow reflects the result of cash flows over a given period of time, reflecting the excess when cash inflows exceed payments. The expected cash flows, discounted at a discount rate that takes into account the risks of the organization, determine the market value of the insurance company.

Each of the methods of estimating the market value has its advantages and disadvantages, following which it is usually recommended to use a combination of them (for example, EVA, SVA and CFROI) followed by a comparative analysis of the financial results [Tabără, Vasiliu 2006; Copeland et al. 2000]. When selecting an appropriate model for analysing the financial performance of the insurance company, their growth strategy, current status and estimates of the evolution of the business environment must be taken into account.

Many opinions emphasize the importance of the goal of profit maximization, but mention that it should not be an end in itself, because the insurance company participates in the redistribution of national income, not in its creation. The largest contribution to the financial result must come from the investment activity. In addition, the established insurance reserves, being temporarily free resources, are also becoming an important source of investment. The profit from the investment and financial operations must have the largest share in the total amount of the profit. The investment profit allows the insurance company to pay on time the indemnities, the extension of the activity, the reduction of the insurance tariffs, etc. [Văduva 2010]. Thus, the profit obtained from the investments made on account of the reserves can be used to extend the insurance liability; reducing tariffs on insurance products, and this contributes to increasing the competitiveness of the insurance company.

Profit as an indicator that fully expresses the efficiency of the insurance company's activities is important, but only in base of profit indicators it is impossible to give an objective assessment of success or decline in performance during that period, because the same amount of profit can be the result of different activities of the insurer.

Some general conclusions on profitability derived from the analysis of the financial results' indicators expressed in absolute terms lead to the idea that the efficiency of insurance companies in the Republic of Moldova has a downward trend, confirmed by data on financial results in insurance presented by the NCFM [NCFM] in the quarterly and annual reports. Thus, according to the cumulative profit before tax indicator in the field at the situation from the end of 2019, the sector recorded losses in the amount of 10,33 million lei. Out of 14 insurance companies in the Republic of Moldova, 6 insurers ended the financial year with losses. In the context of the above mentioned, we consider of great actuality the approach to the issue of profitability management within insurance companies.

RESEARCH METHODOLOGY

Insurers, as subjects of entrepreneurship, manage a potential of resources, whose capitalization has as main objective profit generation. We can speak of profit when the total income of the activity of a company exceeds the total expenses, the profit representing the surplus of income over the expenses made by the enterprise. Profit is often used as a measure of performance or as a basis for

other indicators, such as profitability (activity, investment) or earnings per share. Profitability reflects the company's ability to produce profit (positive result), reflecting in a synthetic form the efficiency of its entire economic activity and is one of the expression forms of economic efficiency.

The financial result of the operational activity of the insurer obtained during the reporting period, expressed in profit or loss, characterizes the success or failure/unsuccess of the activity in terms of quality and quantity.

The general model of the formation of the insurance company's financial result can be represented in the following way:
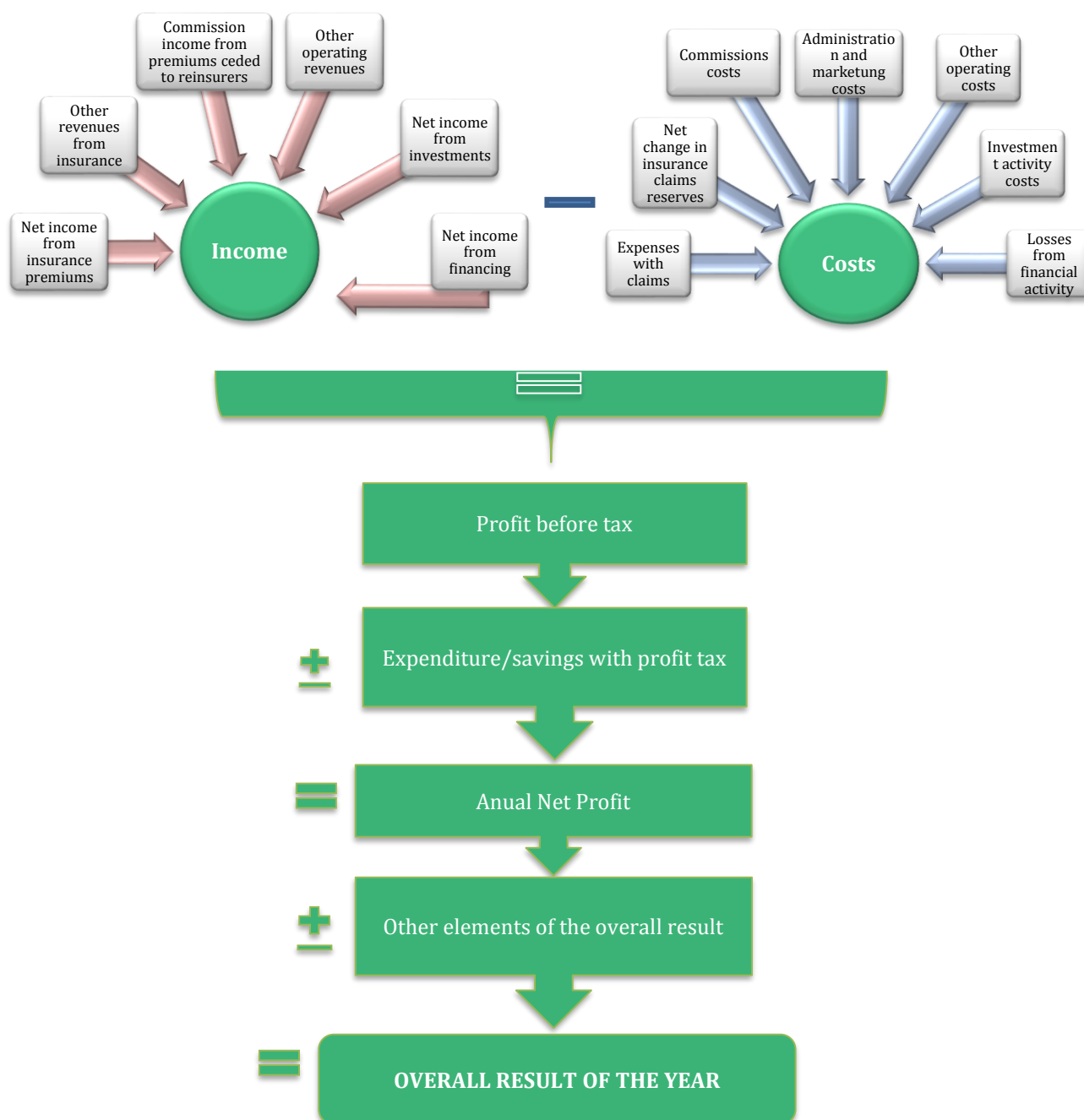
Figure 3. The general model of formation of the insurance company's financial result
Source: Elaborated by authors based on the Financial Statements of the Board of Directors "Donaris Vienna Insurance Group JSC and "Klassika Asigurări" JSC; "Acord Grup" JSC, „Euroins Romania Asigurare-Reasigurare" JSC [8; 9; 10; 11].

The above mentioned in figure 3 allow us to find that the interim financial results and the overall result (the absolute indicators of financial performance) are formed progressively, based on a "cascading succession" mechanism due to the continuous chain of operations (receipts of premiums, payments of compensations, interest receivables from securities' investment fees, payments of commissions to brokers, etc.), that characterize the activity of the insurance company. The analysis of the financial results of the insurance company is performed based on the elements included in the Profit or Loss Statement or the Statement of the global result that summarizes the economic flows, respectively the expenses and revenues of the management period, resulting from insurance, investment, financing and other activities.

If we refer to the efficiency of the financial management of the joint stock company, we consider that the managerial performance indicator of the insurance company is nevertheless the net profit, which can be presented in the following way:

$$\textit{Net result = Total revenues – Total expenditure} \tag{1}$$

$$\textit{Revenues = Net income from insurance / reinsurance activities + net income / investment gains + net income / gains from financing} \tag{2}$$

$$\textit{Expenditure = Operating / operational expenses + net financing costs} \tag{3}$$

The formalized model (1) highlights that the positive financial result of the insurer's activities largely depends on 2 basic components:

1) Net income from underwriting insurance contracts;
2) Net investment income.

These, in turn, determine the size of other performance indicator of the insurance company - the profit before tax.

The application in analytical practice of profitability indicators eliminates this disadvantage, a fact confirmed by the studies conducted by Moskaleva E. [Moskaleva 2013]. Profitability indicators reflect the efficiency of the establishment, distribution and capitalization of the financial resources of the insurance company, i.e. the optimum of its financial result. Profitability is a synthetic form of expressing economic efficiency, which reflects the ability of a company to obtain a profit or a benefit from the activity it carries out. Profitability is measured by the ratio between the results (a profit indicator (gross, net, etc.) and the means (resources or capital) used to obtain them [NBS]. In the process of analysing the efficiency indicators, it is necessary to determine correctly from a methodological point of view the total amount of income and expenses realized from the insurance, investment and other activities.

Thus, Moskaleva E. highlights the role of profitability indicators viewed through the prism of their analysis by stakeholders [Moskaleva 2013]:

• A high level of profitability contributes to increasing the financial stability of the insurance company (the risks associated with the possible non-fulfilment of obligations to pay damages are reduced); the company is able to face a fierce competition in the insurance market;

• Profitability is of particular importance for owners (shareholders), because, when it increases, the interest for investments in this insurance company increases, the share price increases, respectively the objective of maximizing the market value of the capital invested by them is achieved;

• For entrepreneurs, a profitability indicator characterizes the attractiveness of a business in this field, showing how insurance justifies investment expectations compared to alternative areas of capital investment.

In order to correspond to the rigors imposed by the financial environment, the modern financial management comes to the aid with specific management methods, tools and levers, oriented towards the achievement of the object of activity in normal conditions of profitability. Normal conditions of profitability are considered when the entity obtains a sufficient gain to continue operating under normal conditions and corresponding to the degree of risk to which it is exposed. The main indicators of profitability, calculated on the basis of the data of the public financial statements of insurers, can be systematized in the following three categories:

1) indicators that characterize the efficiency of insurance activities and insurance operations;
2) indicators that characterize the efficiency of the insurer's investment activities;
3) indicators that characterize the return on invested capital (figure 4).

Indicators of the insurance activity profitability	Indicators of the investment activity profitability	Indicators of the return of the advanced capital
•Profitability of insurance operations •Profitability of the insurance/ operating activity	•Return of investment •Return of investment of insurance reserves	•Return of assets •Return of equity •Profitability of permanent capital •Profitability of net assets

Figure 4. Categories of profitability indicators of insurance companies
Source: Elaborated by authors.

One solution to capture several aspects of profitability is to apply a complex indicator of profitability. An example suggested by Moskaleva E. is based on an additive model (4), which reflects the results of different activities on the basis of reporting – *gross insurance premiums*, which allows us to estimate their contribution to the overall profitability of the insurance company of all subsystems, its functions: insurance, investment and reinsurance [Moskaleva 2013]:

$$K_R = \frac{R_{op.as}}{PBS} + \frac{Rnet_{INV}}{PBS} + \frac{R_{CR}}{PBS} \tag{4}$$

Where:
K_R – the complex / integral coefficient of the profitability of the insurance company;
$R_{op.as}$ – the net result of insurance operations;
$Rnet_{INV}$ – the net result of investment activity;
R_{CR} – benefits or damages related to reinsurance contracts;
PBS – gross insurance premiums written during the period.

One of the performance indicators of the insurance company is the Return on Assets (ROA), calculated according to relation (5) and shows the contribution of a Leu invested in assets to the formation of profit. Along with the indicator "Return on Capital (ROE)", it is considered one of the most important indicators of the activity of an insurance company, because it "...highlights the way in which managers of society use the total resources of society (financial and real) to get profit".

$$ROA = \frac{Pnet}{\overline{A}} \times 100, \tag{5}$$

Where:
ROA – assets rentability (*Return on Assets*);
Pnet – net profit;
$\overline{A}$ – the average annual value of the assets.

The assessments of the rate of return on assets allow comparisons with other insurance companies. According to this profitability indicator, stakeholders are informed about the capacity of economic capital to ensure its renewal and remuneration as a factor.

Relevant assessments regarding the level of profitability rate are given by correlating their value with the existing averages in the branch or sector of activity. The average profitability of assets in the field of activity "Financial and insurance activities" in 2016 was 3,9%, and in 2017 – 6,2%. In 2016, only 5 companies out of the 9 analyzed exceeded the average level of ROA in the given field of activity. In 2017, only 3 insurance companies exceeded the level of 6,2% of the return on assets.

The rate of return on assets, in some situations is assessed in correlation with the evolution of the inflation rate. A rate of return on assets above the inflation rate will be able to ensure the preservation of the "economic substance" of the enterprise and even the renewal and growth of its economic assets, in the shortest possible period.

An important qualitative indicator of the insurer's activity is considered the *Profitability of the insurance activity* (6) which is of interest not only to the owners and administrators of the insurance company, but primarily to external users: consultants, financial analysts, potential investors and shareholders. External users have the opportunity to assess the profitability of the insurance company

only on the basis of the public financial statements of the insurer, which they are required by law to publish, in their capacity as public interest entities, one of the indicators being profit before tax. However, considering that the profit before tax is an indicator expressed in absolute terms, the result obtained "...does not always give the possibility to objectively assess the effectiveness of the operational activity without resorting to profitability indicators." [Balanuța 2010]. The interpretation of this hypothesis with reference to the insurance activity, allows us to conclude that the profitability of the insurance activity (R_A) is an indicator that reflects the performance of the management team, calculated as the ratio between profit before tax and total income.

$$R_A = \frac{PI}{VS} \times 100,$$
(6)

Where: R_A – profitability of the insurance activity, %;
PI – profit before tax;
VS – income from underwriting insurance contracts;
$$PI = VS – ChE \ (Operating \ expenses)$$
(7)

The change in dynamics of the profitability indicator of the insurance activity is important for different categories of users, because it highlights a series of factors, which influence the resultant indicator. Moreover, taking into account the free access to the financial statements of companies, we can compare with other insurance companies operating in the market and their dynamic evolution.

RESULTS AND DISCUSSIONS

The factor analysis can determine the influence of a number of factors. In the present study we will refer to the analysis of the profitability of the insurance company's activity through the prism of the analysis of three factors:

- Changing the structure of the insurance portfolio;
- Modification of expenses related to the insurance activity;
- Changing the amount of insurance rates.

We will apply the factorial model (7) to analyse the profitability of the insurance activity based on the Profit or Loss Account of the insurance company "Acord Grup" JSC for the period 2017-2018. The initial data are presented in table 1.

Table 1

Initial data for the factorial analysis of the insurance activity profitability in dynamics of the insurance company „Acord Grup" JSC

Indicator	Conventional signs	2017	The year 2018 recalculated in the conditions of 2017	2018
Income from underwriting insurance contracts, thousand lei	VS	58245,19	53754,0	55769,34
Operating expenses, thousand lei	ChE	45852,92	51543,37	47571,18
Profit before tax, thousand lei	PI	8930,94	2210,63	10239,31
Profitability of the insurance activity, %	R_{AS}	15,33	4,11	18,36

Source: Authors' calculations based on the Financial Statements of the Insurance Company " Acord Grup " for the years 2017-2018.

The recalculation of the indicators of 2018 in the conditions of 2017 was made based on the calculation methodology of the scientist Vl. Balanuță [Balanuța 2010]. The following calculations were performed to determine the influencing factors:

Recalculated profitability of the insurance activity I (R_{ASrecI}):

$$R_{ASrecI} = \frac{VS_{rec} - ChE_{rec}}{VS_{rec}} \times 100 = \frac{53754,0 - 51543,27}{53754,0} = 4,11\%$$

Recalculated profitability of the insurance activity II ($R_{ASrecII}$):

$$R_{ASrecII} = \frac{VS_{rec} - ChE_{2018}}{VS_{rec}} \times 100 = \frac{53754,0 - 47571,18}{53754,0} = 11,50\%$$

In 2018, the profitability of the insurance activity of the insurance company "Acord Grup" JSC increased by 3.03 p.p. The influence of the factors stated above is as follows:

Changing the structure of the insurance portfolio:

$$\Delta R_{AS}(f_1) = 4,11 - 15,33 = -11,22 \, p.p.$$

Modification of the expenses related to the insurance activity:

$$\Delta R_{AS}(f_2) = 11,50 - 4,11 = +7,39 \, p.p.$$

Changing the amount of insurance rates:

$$\Delta R_{AS}(f_3) = 18,36 - 11,50 = +6,86 \, p.p.$$

Verification: -11,2 +7,39 + 6,86 = +3,03

From the three factors stated above, we conclude that the change in the structure of the insurance portfolio mitigated the increase in the profitability of the insurance business of the insurance company "Acord Grup" JSC in 2018 compared to the previous year. Its negative impact determined a decrease of the resultant factor by 11.22 p.p., and the other two factors had a positive influence.

In order to establish the influence of other indicators on the performance indicators of this company, the authors deepened the analytical approach by determining the influence of changing the structure of the insurance portfolio on another important indicator, which determines the company's solvency – net premiums and represents the company's turnover.

Creating a sustainable portfolio is an important goal of the organization. The insurance portfolio characterizes the financial reliability of the company. This is a set of contracts concluded for certain amounts of insurance. In fact, it is a reflection of the company's obligations to customers. The degree of responsibility of the structure within the adopted contracts depends on its size. In order to ensure the sustainability of activities, it is reasonable to create an insurance portfolio with a large number of low-liability transactions. The payment of compensation should not affect the company's financial situation. The insurance portfolio is the main source of cash, and if the structure is poorly managed, it can cause the organization to go bankrupt. Therefore, it is important to form and correctly distribute the risks and liability in contracts. However, reinsurance services are not free. It is therefore necessary to assess the economic efficiency of the transaction before it is concluded.

As it results from the Profit or Loss Account and the statement of other elements of the overall result of the Insurance Company "Acord Grup" JSC, for the financial year ended December 31, 2018 the written gross insurance premiums increased compared to the previous year by 7521,77 thousand lei. This deviation was formed under the influence of the change of the following two factors:

1) number of insurance contracts;
2) the average premium received per contract.

The influence of each factor was analysed based on table 2.

Table 2

Initial data and calculations related to the evaluation of the factors' influence on the net premium subscribed by the Insurance Company "Acord Grup" (2017-2018)

Indicator	Actual data		Absolute deviation (+,-)
	2017	2018	
Number of insurance contracts concluded	71246	81095	+9849
The average premium received per one contract, lei	797,1	798,21	+1,1
Written net premiums, thousand lei	56789,92	64730,67	+7940,75
including, based on:			
Increase in number of concluded contracts: 9849 x 797,1			+7850,65
Increase in average net written premium per one contract: +1,1 x 81095			+89,21

Source: Authors' calculations based on the Financial Statements of the Insurance Company " Acord Grup " for the years 2017-2018.

The calculations show that the amount of net written premiums increased only due to the growth in the number of concluded contracts, the increase being 7850 thousand lei. The amount of the average premium received practically remained at the same level, respectively did not have a significant influence on the change of the net amount of the subscribed premiums.

CONCLUSIONS

Given the conditions imposed by the competitive environment, but also by the supervisory bodies of the non-banking financial market, the insurance company must have as basic objectives the assurance of the profitability and liquidity necessary for a continuous activity. Respecting these fundamental objectives, the insurance company will make enough profit to remunerate the owners and to compensate the insured if necessary. Failure to meet the objectives of profitability and liquidity may condition a state of financial imbalance, insolvency and non-compensation of policyholders in case of insured risks.

From the systematization of the methodological approaches for analysing the efficiency of the insurance activity, we considered that an efficient financial management requires an integrated approach to the profitability indicators, which can be achieved through factor analysis. This will allow managers to determine the causes, the influencing factors and to make managerial decisions regarding the increase of the efficiency of the activity and the financial performance of the insurance company.

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SPECIAL NEEDS OF ENTREPRENEURS WITH DISABILITIES IN THE CONDITION OF THE REPUBLIC OF MOLDOVA

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ABSTRACT

People with disabilities experience significant difficulties in the process of finding a job, which is caused not only by their health status, difficulty in getting education, but also by the reluctance of entrepreneurs to hire disabled people. In this situation, people with disabilities, who can provide self-employment or create their own business, get an additional chance to have a constant source of income, develop themselves and, in general, integrate more successfully into social life. The aim of the research was to identify the basic needs of support of entrepreneurs with disabilities; for this purpose, in 2017, a survey of 75 individuals was conducted. The results of the survey implemented within the project of the National Institute for Economic Research (NIER) showed that for people with disabilities (unlike other groups of small entrepreneurs) is not enough to create a favorable business environment. No less important is the improvement of general living conditions of persons with disabilities, especially the improvement of their access to social infrastructure, education and the labor market. The main directions of the state support of people with disabilities aimed at the business development and self-employment, are proposed to be following: improvement of legislation on supporting social entrepreneurship to increase the ability of persons with disabilities to be employed; improvement of access to education for people with disabilities through building and modernization of social infrastructure objects; use of direct economic and financial forms of support for this group of people, including through state target programs; support for the establishment of business associations uniting entrepreneurs with disabilities, etc.

Keywords: small and medium-sized enterprises, people with disabilities, entrepreneurs with disabilities, need for support of entrepreneurs, state support for entrepreneurs with disabilities.

Persoanele cu dizabilități întâmpină dificultăți semnificative în procesul de găsire a unui loc de muncă, ceea ce este cauzat nu doar de starea lor de sănătate și dificultățile întâmpinate în procesul educațional, dar și de reticența antreprenorilor de a angaja persoane cu dizabilități. În această situație, persoanele cu dizabilități, care se pot asigura cu muncă independentă sau își pot crea propria afacere, au șansa suplimentară de a avea o sursă constantă de venit, de a se realiza și, în general, de a se integra cu succes în viața socială. Scopul cercetării a fost identificarea necesităților de bază de sprijin ale antreprenorilor cu dizabilități, în acest scop în a.2017 a fost realizat un sondaj care a cuprins 75 de persoane. Rezultatele sondajului realizat în cadrul unui proiect implementat de Institutul Național de Cercetări Economice (INCE) au arătat că pentru persoanele cu dizabilități (spre deosebire de alte grupuri de întreprinzători mici), crearea unui mediu de afaceri favorabil nu este suficientă. La fel de importantă este și îmbunătățirea condițiilor generale de viață, printre care prioritate a fost acordată îmbunătățirii accesului persoanelor cu dizabilități la infrastructura socială, educație și piața muncii. Principalele direcții ale sprijinului de stat pentru persoanele cu dizabilități ce au drept scop dezvoltarea antreprenoriatului și a activității independente, includ: îmbunătățirea legislației și sprijinirea

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antreprenoriatului social pentru creşterea capacităţii persoanelor cu dizabilităţi de a se angaja; îmbunătăţirea accesului la educaţie pentru persoanele cu dizabilităţi, inclusiv prin construirea şi modernizarea obiectelor de infrastructură socială; utilizarea unor forme economice şi financiare directe de sprijin pentru acest grup de persoane, inclusiv prin programe vizate de stat; sprijin pentru formarea asociaţiilor de afaceri care unesc antreprenorii cu dizabilităţi etc.

Cuvinte-cheie: întreprinderi mici şi mijlocii, persoane cu dizabilităţi, antreprenori cu dizabilităţi, necesităţi de sprijin ale antreprenorilor, sprijin de stat pentru antreprenori cu dizabilităţi.

Лица с инвалидностью испытывают существенные сложности в процессе поиска работы, что обусловлено не только состоянием их здоровья, сложностью получения образования, но и нежеланием предпринимателей брать на работу инвалидов. В сложившейся ситуации люди с инвалидностью, которые могут обеспечить самозанятость или создать собственный бизнес, получают дополнительный шанс иметь постоянный источник дохода, реализовать себя и, в целом, более успешно интегрироваться в социальную жизнь. Целью исследования являлось выявление основных потребностей предпринимателей с инвалидностью в поддержке, для чего в 2017г. был проведен опрос 75 респондентов. Результаты опроса, реализованного в рамках проекта Национального института экономических исследований (НИЭИ), продемонстрировали, что для лиц с инвалидностью (в отличие от других групп мелких предпринимателей), недостаточно создание благоприятной бизнес-среды. Не менее важным является улучшение общих условий жизни, приоритетными среди которых оказалось улучшение доступам инвалидов к объектам социальной инфраструктуры, образованию и рынку труда. К основным направлениям государственной поддержки лиц с инвалидностью., направленным на развитие предпринимательства и самозанятости, предлагается отнести: совершенствование законодательства и поддержка социального предпринимательства для повышение возможности лиц с инвалидностью получить занятость; улучшение доступа лиц с инвалидностью к системе образования, в том числе путем строительства и модернизации объектов социальной инфраструктуры; использование прямых экономических и финансовых форм поддержки указанной группы лиц, в том числе посредством государственных целевых программ; поддержка формирования бизнес-ассоциаций, объединяющих предпринимателей с инвалидностью и др.

Ключевые слова: малые и средние предприятия, лица с инвалидностью, предприниматели с инвалидностью, потребности предпринимателей в поддержке, государственная поддержка предпринимателей с инвалидностью.

INTRODUCTION

Today, social and economic integration of people with disabilities represents one of the international priorities, especially after the adoption of the Convention on the Rights of Persons with Disabilities in 2006. The Convention was signed by all EU Member States and more than 100 other countries of the world, including the Republic of Moldova. The Convention obliges the states that have ratified this document to ensure that persons with disabilities have the opportunity, on an equal basis with other citizens, to fully enjoy their rights, including access to education, employment, transport, infrastructure and buildings opened for public access, increase participation in political life, etc.

In the economic developed countries, people with disabilities are involved in the labor field and work in all the types of activities, but, however in other countries they often remain inactive on the labor market. So, statistics of the European Union testify that, for example, in Austria only 22% of the identified population with disabilities are not active on the labor market, while in Poland this indicator reaches 78%. This variation can be explained by several factors, including the extent to which persons with disabilities are included or excluded from education, discrimination of employers, demographic factors, etc. [OECD 2014].

In the Republic of Moldova, 180.6 thousand people (i.e. more than 5% of the total population of the country) are persons with disabilities, many of whom cannot find employment on the labor market; one of the reasons of this is that employers are not interested in employing them. In this

situation, development of their own business provides an additional opportunity for people with disabilities to ensure a decent standard of living and social integration. However, for the active involvement of persons with disabilities in the business, the support from the government is needed more than for other small entrepreneurs. The scientific hypothesis of the study is that it is not enough for people with disabilities, unlike for other groups of small entrepreneurs, to provide favorable conditions for business development: the improvement of their general living conditions is equally important as well.

In order to identify the basic needs of entrepreneurs with disabilities, a survey has been carried out with the active participation of authors. The survey included not only entrepreneurs/self-employed, but also individuals, who intend to set up their own businesses in the next 1-2 years. The survey was conducted by NIER in the framework of the applied research project 15.817.06.05A "Harmonizing the SMEs development policy in the Republic of Moldova with the principles of the "Small Business Act" for Europe"; stage of 2017: "Improving the SMEs Support Policy in the Republic of Moldova: Improving the Opportunities for Development of Entrepreneurs from the Socially Vulnerable Categories of the Population", with the support of the Association of Entrepreneurs with Disabilities of the Republic of Moldova [Aculai 2017].

REVIEW OF THE SCIENTIFIC LITERATURE ON THE BUSINESS ACTIVITIES OF PERSONS WITH DISABILITIES

In the last decades, the lives of people with disabilities are studied by institutions aimed at developing and promoting inclusive policies and eliminate stereotypes present in the society. To a large extent, the research deals with the involvement of disabled people in active work. Labor activity is considered as necessary not just for having a decent living, but it also fulfills a number of basic human needs including those with a social purpose, status and professional activity, which help to support mental health and well-being. For people with disabilities, work is a matter of special importance because having a disability often means being socially isolated. The work represents an opportunity to reduce this isolation [UN 2007].

To date, not many studies regarding the problems and needs of entrepreneurs with disabilities have been published. Nevertheless, self-employment and entrepreneurship can be used as a potential means of professional rehabilitation, in order to achieve a faster and better integration into the labor market and, eventually, social inclusion [8]. Data on the activities of persons with disabilities are limited. Available information suggests that among this group, people are more often unemployed or inactive. At the same time, employed people are often hired on low qualification working places with low salaries [Meager, Higgins 2011].

According to one of the leading researchers of entrepreneurs with disabilities J. Kitching, people with a disability face many specific obstacles in the process of initiating and sustaining entrepreneurship, partly because of poor education, low employment rates and concentration of employees with disabilities in low-paid activities [Kitching 2014]. Scientific papers include, among the barriers faced by people with disabilities, the following: limited access to the start-up capital and lack of knowledge and skills specific to the business; [Foster 2010]; lack of adequate support [Boylan, Burchardt 2002] etc. However, in the modern specialized literature, disability is not regarded as an insurmountable obstacle in carrying out entrepreneurial activity or barrier to participation on the labor market. On the contrary, it is assumed that the advantages of entrepreneurship for people with disabilities can far outweigh any risk involved. Being a disabled entrepreneur allows achieving professional and personal goals and could lead to a higher level of job satisfaction [Győri1 et al. 2019].

Often, entrepreneurial activity is a forced one for persons with disabilities, which affects its content. The reason for becoming an entrepreneur or self-employed person is mostly an incentive that results from a constraint or fear of something (e.g. unemployment or discrimination) that creates a completely different situation than if entrepreneurship is based on an independent decision [8]. However, in other cases, the motivation of people with disabilities to pursue independent activities results from the positive reasons, such as the desire for independence, passion for entrepreneurship and the innovative pursuit of opportunities [Drakopoulou, Keles 2015].

Successful stories are significant enough to motivate people with disabilities, especially if they describe the own experiences of people who have achieved great results. In particular, professor

Stephen W. Hawking believes that: "Disability should not represent an obstacle to success. I have suffered virtually all my adult life from motor neuron disease. However, this has not prevented me from having a wonderful career in astrophysics and having a happy family life" [OMS 2012].

Support policies for persons with disabilities are implemented both nationally and internationally. Thus, the World Report on Disability suggests measures for all stakeholders – governments, civil society organizations and organizations of persons with disabilities – to create enabling environments, develop recovery and support services, provide adequate social protection, create programs and inclusive policies and the implementation of new and existing standards and legislation for the benefit of people with disabilities. People with disabilities should be in the center of these concerns [OMS 2012].

Brief quantitative characteristics of persons with disabilities in the Republic of Moldova

In the Republic of Moldova, according to statistical data of 2017, the total number of persons with disabilities amounted to 180.6 thousand people. However, access to the labor market is limited, as the participation rate of persons with disabilities constituted 19.7% compared to 49.2% for persons without disabilities. Among the men with disabilities, the activity rate was 20.3%, and for women – 19.0%. In the urban area, the participation rate accounted for 16.8% and in the rural area – 21.5%. Unemployment rate (as defined by the International Labor Office) of persons with disabilities was 2.9% compared to 4.1% among unemployed people without disabilities.

The employment rate of persons with disabilities is lower compared to that of persons without disabilities: while the employment rate of persons without disabilities is 47.2%, among persons with disabilities this constitutes only 19.1%. In men, this indicator registered 19.7%, in women, respectively, 18.5%. The employment rate of people with disabilities in rural areas was higher (21.1%) compared to that in urban areas (16.0%).

Of the total number of employed persons with disabilities, the employees make up 46.8% (compared to 65.7% for persons without disabilities). The share of self-employed persons constitutes 44.0% (in agriculture 38.7% and in non-agricultural activities 5.3%), involved in the family activities as unpaid worker are integrated 8.6% and only 0.6% have the status of business owner.
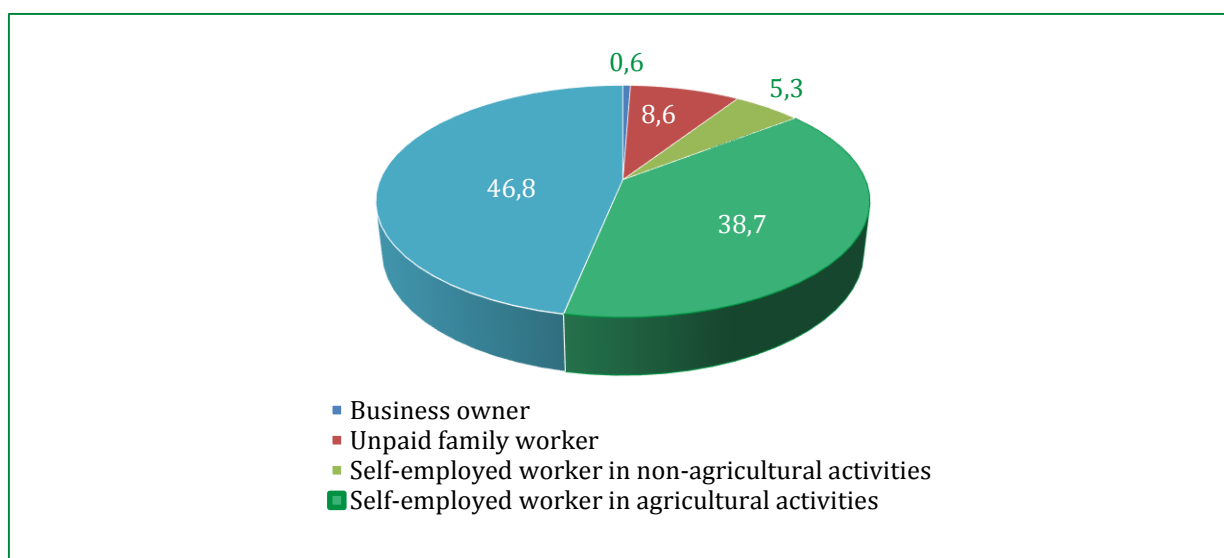
Figure 1. Structure of occupied persons with disabilities by professional status, 2017, %
Source: National Bureau of Statistics [NBS 2018].

According to the Activity report of the National Agency for Employment in 2018, about 623 persons with disabilities were registered with unemployment status. Out of the total number of unemployed people with disabilities, 260 people (42%) are women. According to the age categories of persons with disabilities with unemployed status, 22% persons are aged between 16-29 years, 37% – between 50-62 years and 41% – between 30-49 years.
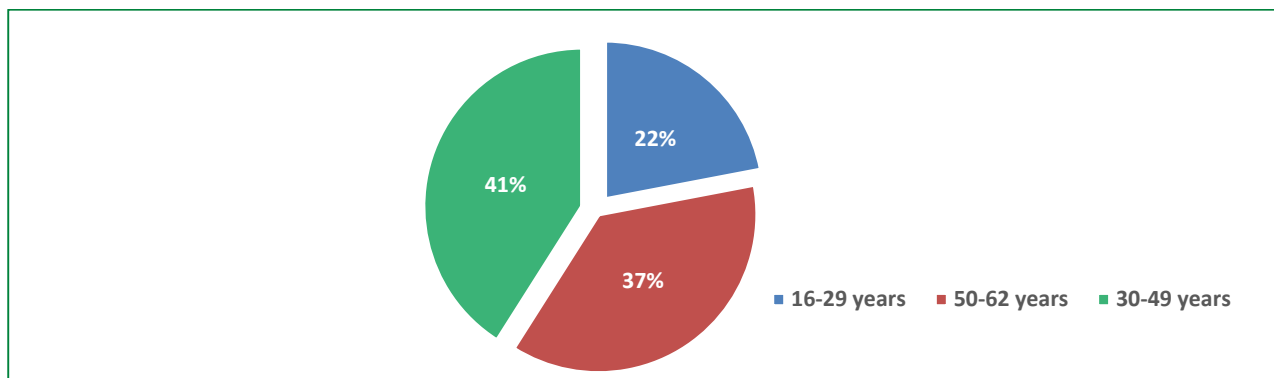
Figure 2. Age category of persons with disabilities registered with unemployed status, 2018, %
Source: NAE activity report 2018 [NBS 2018].

Qualifications of the personnel with disabilities recorded by NAE are the following:
• 51% persons with primary/secondary / high school education;
• 25% persons with secondary-professional education;
• 24% persons with college/university studies;

Thus, it can be mentioned that the highest share is made up by people with average qualifications, mainly primary / secondary / high school studies, which makes access to the labor market difficult and makes them more susceptible to unskilled and poorly paid work.

During 2018, 356 persons with disabilities benefited from work intermediation services, at the same time 58 people were integrated in vocational training courses, and 65 persons were involved in public works. 275 persons were successfully placed in the field of work, while 44% of the total number of persons with disabilities were registered with unemployed status.

It is important to emphasize on the small number of persons in the records of the National Agency for Employment; if statistically the number of persons with disabilities is of the order of tens of thousands, then the number of the persons in the register as unemployed are of the order of hundreds. This gap between the persons in the NAE records and the real one results in a low degree of employment and lack of training, as well as vocational reorientation courses.

In the Republic of Moldova, the substantiation of the policies for inclusion of persons with disabilities on the labor market are regulated by the provisions of the Law on the social inclusion of persons with disabilities. Thus, art. 34 paragraph (4) assumes that "employers, regardless of the form of legal organization, which according to the scheme of hiring staff have 20 or more employees, create or reserve jobs and employ persons with disabilities in a percentage of at least 5% of the total number of employees" [LEGIS 2012].

Although the present law indicates that in case of failure to comply with these provisions during a financial year the employers are sanctioned according to the Contraventional Code, these sanctions are missing in the legislation and are not applied. Gaps in the legislation allow employers to take advantage of and not implement the legislative provisions.

In regard to entrepreneurial activity, it is not formalized in any way for people with disabilities, although at the legislative level, there are no restrictions or barriers that could slow down the process of developing the entrepreneurial activities carried out by people with disabilities. At the same time, the law on entrepreneurship and enterprises does not provide measures to support entrepreneurs with disabilities, because it favors stagnation of the current state of economic and social exclusion of persons with disabilities [LEGIS 1992].

The business environment as well as the civil society show a reluctance in the process of inclusion of persons with disabilities. This low receptivity prevails because the employment of persons with disabilities is mainly performed in specialized companies that are in a very small number, and are located in a restricted area, satisfying the need for jobs, thus creating barriers for both entrepreneurs and people with special needs. Therefore, the most pressing problem remains not the lack of means of integration in the economic activities, but the fact that the society and entrepreneurs have set certain unwritten limits, so very few people have overcome these barriers.

The main factor hindering the process of integrating people with disabilities into economic activities,

at the same time as entrepreneurship, is the lack of statistical data on the number, structure of entrepreneurs and self-employed workers, which accentuates the inefficiency of some economic integration programs, because the lack of data on the number of beneficiaries and their needs cannot be estimated without their actual knowledge.

Special needs of entrepreneurs with disabilities in the conditions of the Republic of Moldova (based on survey results)

Methods and sources of information used. Sample feature

For a more detailed identification of the needs of persons with disabilities involved in entrepreneurial activities or intending to create their own business in the next 2 years, a survey was conducted as part of the NIER project [7] with the support of the Association of Entrepreneurs with Disabilities from the Republic of Moldova during May – September 2017. This study of entrepreneurs with disabilities is the first one in the Republic of Moldova, based on original primary information.

The sample consisted of 75 persons. The main characteristics of the sample are as follows:

• Out of the total number of respondents, 49.3% of people have the entrepreneur status, respectively 50.7% of people are potential entrepreneurs.

• Respondents refer to age categories of 25-35 years (50.7%) and 36-50 years (49.3%).

• Respondents domiciled in the urban area make 67.6% of the total number of people surveyed, in the rural area - 32.4%.

• The main areas of activity chosen by entrepreneurs with disabilities are: services area - 70.3% of enterprises, trade - 16.2% of enterprises and agriculture - 5.4% of enterprises.
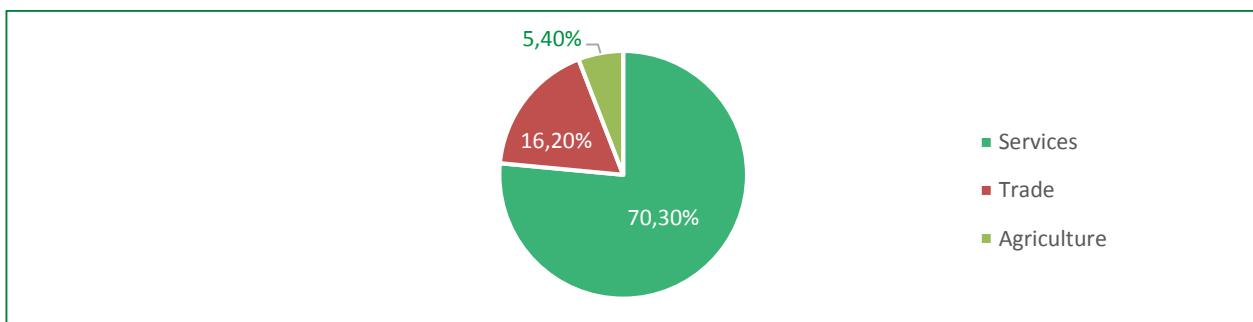
Figure 3. Areas of activity of entrepreneurs with disabilities
Source: Outcomes of the survey [Aculai 2017].

Respondents are characterized by different degrees of disability. Out of the total number of surveyed persons, 72% have the degree of severe disability (1st degree), 24% – pronounced degree of disability (group II) and 4% – the average degree of disability (group III). Thus, we can conclude that the degree of severe or pronounced disability does not represent an invincible impediment in order to the conduct an entrepreneurial activity.
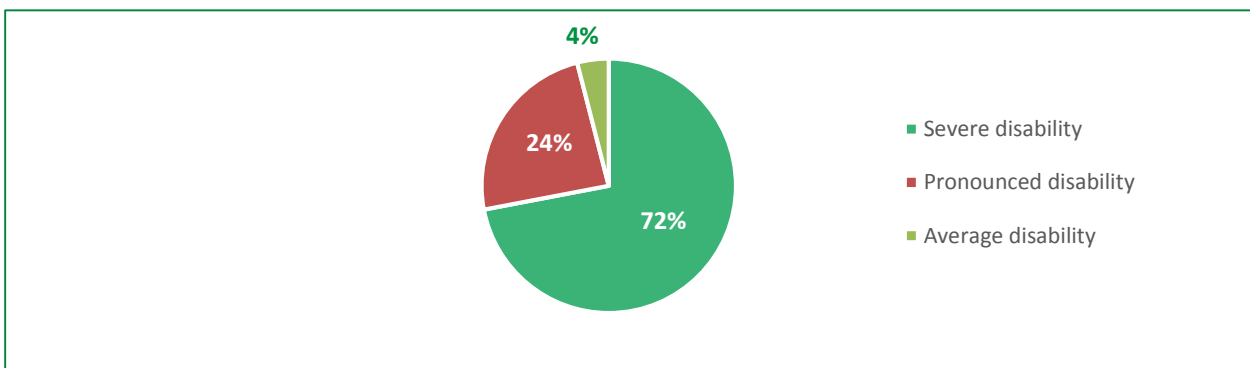
Figure 4. Disability degree of the surveyed persons
Source: Outcomes of the survey [Aculai 2017].

To carry out any activity, it is necessary to have a certain level of professional training. Although success in business is not directly related to the availability of special education, but in the conditions of the Republic Moldova (as well as a number of other countries with emerging market economies), most entrepreneurs have higher or secondary specialized education. This characteristic fully applies to the surveyed group of people: 61.3% of the respondents have a higher level of education, 18.7% have professional and secondary education, 20.0% – have high school and gymnasium education.
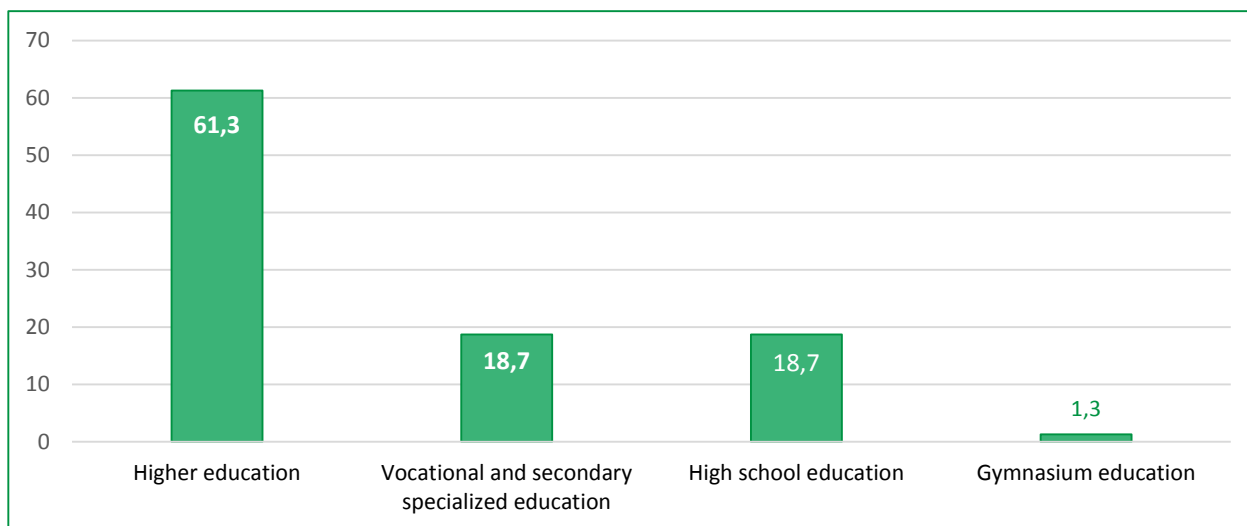
Figure 5. Professional training of questioned persons with disabilities
Source: Outcomes of the survey [Aculai 2017].

Despite the fact that 80% of respondents have specialized education, many of them have a business profile not related to acquired knowledge. Thus, only for 38.9% of the respondents the professional education corresponds to the profile of the held business, and for 61.1% of them the owned business does not correspond with the obtained studies.

The success of a business depends not only on education, but also on previous experience. More than 2/3 of those surveyed have previous work experience, but this is mainly experience as an employee, not an entrepreneur. So, 2.7% of the respondents have experience as a business owner, 68.0% – have the employee status and 29.3% of the respondents have no previous work experience.

Most of the respondents had no business experience and management experience as well. In particular, of the total number of respondents, who at the time of completing the questionnaire were carrying out entrepreneurial activities, only 2.7% indicated that they previously had management experience, respectively 97.3% did not have such experience when they decided to set up their own business.

Needs of entrepreneurs with disabilities for state support

In order to develop the entrepreneurial activity carried out by people with disabilities, according to the respondents, it is necessary to support their businesses by the state. In this purpose it is advisable to use various directions and measures for improving the business environment.

Respondents identified the following main paths, which would increase the chances of setting up and developing the business: use of direct methods of economic / financial state support; improve training opportunities for entrepreneurs and potential entrepreneurs; support for the establishment and development of business associations; improve the attitude of entrepreneurs with disabilities to business support organizations, including public authorities. As the survey showed, all of the above mentioned areas and measures have a very high priority for respondents. In particular, 100.0% of respondents indicated the importance of such measures as: development of a state target program, which will provide for preferential financing of the entrepreneurial activity of people with disabilities;

providing tax and payment facilities for this group of entrepreneurs; improving the possibilities of acquiring knowledge in the field of entrepreneurship; supporting the activity of business associations and improving the attitude of state officials, other business support organizations.

The set of answers reflecting the need for state support with regard to improving the conditions for the development of business among persons with disabilities is presented in the table 1.

Table 1
The need for support from the state with regard to improving the conditions for the development of businesses among persons with disabilities*

Types of support	%
Direct economic and financial forms of support	
Development of a state target program, which provides for preferential financing of the entrepreneurial activity of persons with disabilities at the stage of starting the business	100,0
Provision of tax and payment facilities for this group of entrepreneurs (for example, exemption from payment of insurance rates or facilities for payment of communal services for business)	100,0
Improving learning opportunity	
Improving the possibilities for acquiring knowledge in the field of entrepreneurship, taking into account the different degrees of work capacity and the limitations on types of activities	100,0
Developing a mentoring system at the start-up stage	98,6
Support for the establishment and development of business associations	
Supporting the activity of business associations, which mainly meet or include entrepreneurs from persons with disabilities (including, involving their leaders in the activity of the Advisory Councils near the public administration bodies)	100,0
Strengthening the partnership with other business associations, in order to jointly promote the interests of different groups of entrepreneurs	98,6
Improving relations to entrepreneurs with disabilities	
Improving the attitude of state officials, employees of commercial banks, other business support organizations towards entrepreneurs among people with disabilities	100,0

* Respondents had the opportunity to give multiple answers.
Source: Outcomes of the survey [Aculai 2017].

At the same time, the results of the survey clearly demonstrated that in order to increase the possibilities of developing the businesses set up and managed by people with disabilities, it is not enough to create a general favorable business environment. It is necessary to improve the general living conditions for this group of entrepreneurs. In particular, respondents believe that they need diverse forms of support, associated primarily with the solution of medical and domestic problems, education, employment on the labor market, adaptation of social infrastructure and socio-psychological factors.

The highest priority is given to such forms of support as:

• design, construction and modernization of social infrastructure objects (100.0% of respondents);

• improving the possibilities for obtaining general and professional studies (100%);

• supporting social entrepreneurship oriented towards increasing the employment of people with disabilities and production of goods / services necessary for them (98.6);

• changing the attitude of the society towards people with disabilities (95.9%), etc.

It is significant that, according to respondents, government assistance in solving medical and domestic problems is slightly less significant than problems associated with access of persons with disabilities to social infrastructure, education and the labor market.

The need for state support, with reference to improving
the general living conditions of people with disabilities*

Types of support	%
Related to the adaptation of social infrastructure objects	
Design, construction and modernization of social infrastructure objects (housing and social objects, etc.), in order to make them more accessible (existence of ramps, etc.)	100,0
Related to receiving of education	
Improving the possibilities for obtaining general and professional studies (home education and training, internet training possibilities, etc.)	100,0
Related to the provision of employment on the labor market	
Supporting social entrepreneurship oriented towards increasing the employment of people with disabilities and production of goods / services necessary for them	98,6
Creation of job places and special conditions for employment	90,5
Improving professional rehabilitation, as well as social integration	82,4
Associated with socio-psychological factors	
Changing society's attitude towards people with disabilities (more confidence, a welcoming environment, etc.)	95,9
Promoting the positive image, disseminating success stories of entrepreneurs among people with disabilities	87,8
Related to the solution of medical and domestic problems	
Provision with articles and specialized means of rehabilitation, which allow people with disabilities to be involved in work and social activity (ocular prostheses, hearing aids, typhotechnical means, optical means, etc.).	91,9
Improvement of the system of expertise and determination of the degree of invalidity	55,4
Improving health care, rehabilitation and home treatment	16,2
Improving the system of providing social care and personal assistance in solving problems at home	12,2

* Respondents had the opportunity to give multiple answers
Source: Outcomes of the survey [Aculai 2017].

Needs of entrepreneurs with disabilities for suport from business associations

Another form of support for entrepreneurs with disabilities may be business associations. Survey results demonstrated that cooperation, exchange of practices and other forms of collaboration between entrepreneurs (without taking into account sales relations) are characteristic for the majority of respondents: out of the total number of respondents engaged in entrepreneurship, 70.3% cooperate with other entrepreneurs and 29.7% entrepreneurs do not have any cooperative relations.
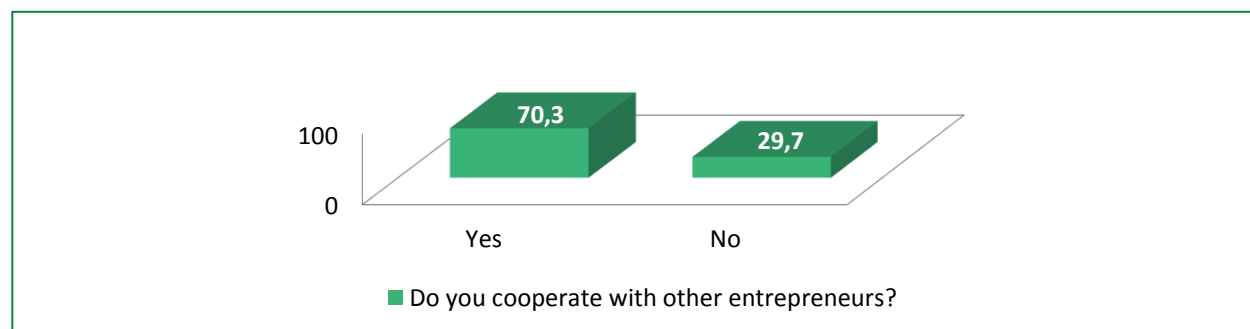
Figure 6.   Cooperation relations of entrepreneurs with disabilities, %
Source: Outcomes of the survey [Aculai 2017].

Entrepreneurs with special needs are looking for different ways to become more efficient in the business environment through their own powers and initiatives, while through business associations is aimed at creating opportunities for collaboration for these members with other third parties. Out of the surveyed entrepreneurs with disabilities, 45.9% people are members of business association, 37.8% – not members, and 16.3% people plan to join a business association starting next year.
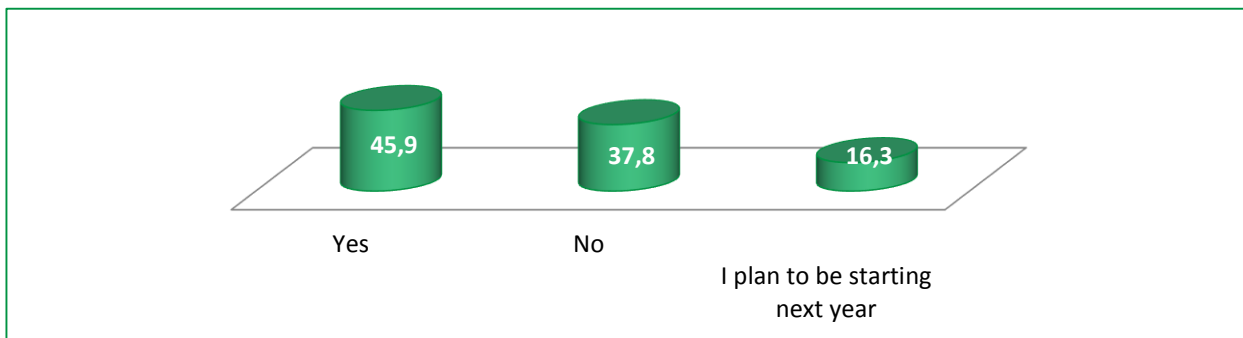
Figure 7. Membership of entrepreneurs with disabilities in business associations, %
Source: Outcomes of the survey [Aculai 2017].

Almost all 100% of respondents who are members of business associations indicated that they benefited from within business associations with:
- useful information;
- possibility to participate in training courses;
- support in establishing contacts with other companies;
- possibility to get involved in the implementation of joint projects;
- support in protection and promotion of their interests in public administration bodies.

A significant share of members of business associations received consultancy services (94,1%), as well as psychological and emotional support (88,2%).
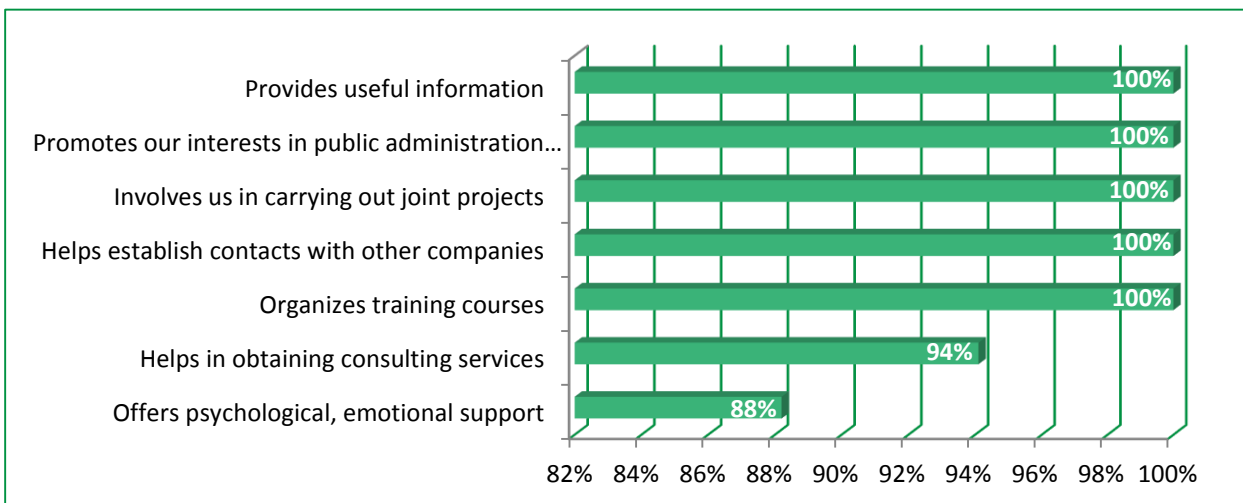
Figure 8. Services offered by the business association*
* Respondents had the opportunity to give multiple answers
Source: Outcomes of the survey [Aculai 2017].

In order to improve the activity of business associations 100% of respondents consider that it is necessary to promote the successes of the associations more actively and the state should improve the financial possibilities of the associations. For 78.4% of respondents it is important to improve the quality of the services offered by the business associations.
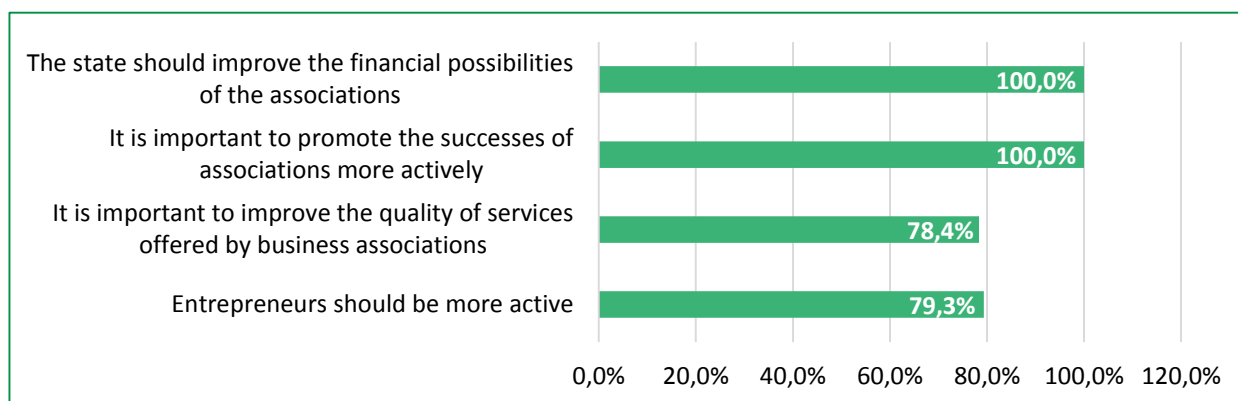
Figure 9. Ways to improve the activity of business associations*

* *Respondents had the opportunity to give multiple answers*
Source: Outcomes of the survey [Aculai 2017].

MAIN CONCLUSIONS

The support policy of entrepreneurs from underprivileged groups and those underrepresented in business should take into account the specifics of their activities, special problems and needs for support. In the Republic of Moldova, the entrepreneurial activity of persons with disabilities has not been investigated yet. This study is the first one, based on primary information, i.e. the results of surveys.

The analysis of the results made it possible to establish areas of the state support for people with disabilities.

First of all, it is necessary to provide a differentiated entrepreneurship support system, which varies significantly with respect to certain groups of disadvantaged population and those underrepresented in business, including entrepreneurs with disabilities.

One of the important tasks is to increase the opportunity of persons with disabilities to obtain employment on the labor market by improving legislation, monitoring its implementation and supporting social entrepreneurship.

Equally significant is improvement of the access of people with disabilities to the education system, including through construction and modernization of social infrastructure objects, to make them more convenient for people with special needs.

Other expected measures include use of direct economic and financial forms of support for this group of people, including through state targeted programs; improvement of the system of assistance to persons with disabilities in solving domestic and medical (including psychological) problems; support the establishment and consolidation of business associations that unite entrepreneurs with disabilities or are aimed, inter alia, at working with them.

Finally, it is advisable to actively promote in society the idea of real opportunities for people with disabilities to create their own business, as an alternative to finding a job on the labor market. This represents an additional chance to increase their material level and self-accomplishment.

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RISK-BASED APPROACH IN THE EUROPEAN UNION LEGISLATION
TO PREVENT MONEY LAUNDERING AND FINANCING OF TERRORISM

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ABSTRACT

Money laundering and terrorism financing are serious and internationally emerging issues that must be approached and confronted at European Union level. The latest terrorist attacks and periodic banking scandals highlight the necessity for additional attention in this particular direction. In regard to the internal EU market, financial flows are integrated and trans-border by nature, thus funds can circulate rapidly, from one country to another, offering the possibility to perpetrators and terrorists to transfer money across Member State avoiding detection by authorities. This specific situation generates the necessity to identify and understand the particular ML/TF risks generated by services and products offered within the EU economic and financial ecosystem. In order to ensure an efficient mechanism for identifying the ML/TF risks associated with the products and services provided on the territory of European Union, the 4AMLD provides the obligation of the EU Commission to perform once in two years the so-called European Union Money Laundering and Terrorist Financing Supranational Risk Assessment. Since 2017 two supra-national risk assessments were carried out and the final results are used by Member States to monitor the evolution of risks at Union level and to implement the necessary recommendation for ensuring a proper minimization of threats and vulnerabilities at the national level. This paper aims to analyze, understand and compare the main outcomes of the two assessments, namely the identified risks and their links with vulnerable sectors, as well as the evolution or devolution of certain risks as a result of mitigation measures applied by EU Member States. Another task of this article is to provide additional recommendations in terms of mitigating measures and efforts, which must be taken into account by Member States.

Keywords: risks, money laundering, financial services, threats and vulnerabilities, customer due diligence, beneficial owner.

Spălarea de bani şi finanţarea terorismului sunt probleme serioase, care apar la nivel internaţional, dar care trebuie abordate şi confruntate inclusiv la nivelul Uniunii Europene. Ultimele atacuri teroriste şi scandaluri bancare periodice evidenţiază necesitatea unei atenţii suplimentare în această direcţie. În ceea ce priveşte piaţa internă a UE, fluxurile financiare sunt integrate şi transfrontaliere, prin urmare, fondurile pot circula rapid, dintr-o ţară în alta, oferind posibilitatea autorilor şi teroriştilor de a transfera bani în statele membre, evitând detectarea de către autorităţi. Această situaţie specifică generează necesitatea identificării şi înţelegerii riscurilor specifice ML/TF generate de serviciile şi produsele oferite în cadrul ecosistemului financiar şi economic al UE. Pentru a asigura un mecanism eficient pentru identificarea riscurilor de ML/TF asociate cu produsele şi serviciile furnizate pe teritoriul Uniunii Europene, 4AMLD prevede obligaţia Comisiei UE de a efectua o dată în doi ani evaluările riscurilor supranaţionale pentru spălare şi finanţare a terorismului în conformitate cu criteriile UE. Din 2017 au fost efectuate două evaluări de risc supra-naţional, iar rezultatele finale sunt utilizate de statele membre pentru a monitoriza evoluţia riscurilor la nivelul Uniunii şi pentru a

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implementa recomandarea necesară pentru a asigura o minimizare adecvată a ameninţărilor şi a vulnerabilităţilor la nivel naţional. Acest articol îşi propune să analizeze, să înţeleagă şi să compare principalele rezultate ale celor două evaluări, respectiv riscurile identificate şi legăturile acestora cu sectoarele vulnerabile, precum şi evoluţia sau devoluţia anumitor riscuri ca urmare a măsurilor de atenuare aplicate de statele membre ale UE. O altă sarcină a acestui articol este de a oferi recomandări suplimentare în ceea ce priveşte măsurile şi eforturile de atenuare, care trebuie să fie luate în considerare de către statele membre.

Cuvinte-cheie: *riscuri, spălare a banilor, servicii financiare, ameninţări şi vulnerabilităţi de spălare a banilor, cunoaşterea clientului, beneficiarul final.*

Отмывание денег и финансирование терроризма – это серьезные и возникающие на международном уровне проблемы, которые необходимо выявлять и решать на уровне Европейского Союза. Последние террористические акты и периодические банковские скандалы подчеркивают необходимость дополнительного внимания в этом конкретном направлении. Что касается внутреннего рынка ЕС, финансовые потоки являются интегрированными и трансграничными по своей природе, таким образом, финансовые потоки могут быстро циркулировать из одной страны в другую, предоставляя возможность преступникам и террористам переводить деньги через государство-член, избегая обнаружения властями. Эта конкретная ситуация порождает необходимость выявления и понимания конкретных рисков ОД/ФТ, создаваемых услугами и продуктами, предлагаемыми в рамках экономической и финансовой экосистемы ЕС. Для обеспечения эффективного механизма выявления рисков ОД/ФТ, связанных с продуктами и услугами, предоставляемыми на территории Европейского Союза, 4AMLD предусматривает обязательство Комиссии ЕС раз в два года выполнять оценку наднационального риска отмывания денег и финансирования терроризма согласно установленным критериям. С 2017 года были проведены две наднациональные оценки рисков, и окончательные результаты используются государствами-членами для мониторинга эволюции рисков на уровне Союза и выполнения необходимых рекомендаций для обеспечения надлежащей минимизации угроз и уязвимостей на национальном уровне. Цель этой статьи - проанализировать, понять и сравнить основные результаты двух оценок, а именно выявленные риски и их связи с уязвимыми секторами, а также эволюцию или передачу определенных рисков в результате мер по смягчению, применяемых государствами-членами ЕС. Другая задача этой статьи состоит в том, чтобы предоставить дополнительные рекомендации в отношении смягчающих мер и усилий, которые должны быть приняты во внимание государствами-членами.

Ключевые слова: *риски, отмывание денег, финансовые услуги, угрозы и уязвимость к отмыванию денег, надлежащая проверка клиентов, конечный бенефициар.*

INTRODUCTION

The money laundering is a significant concern and a growing problem for European Union because of its enormous internal market and numerous services and products, which can be used by criminals to legalize illicit proceeds obtained from various illegal activities such as corruption, tax evasion, fraud, smuggling, etc. The European Union is an important trade player with a considerable share in the worldwide trade, which means that EURO is used by many participants and members of internal and external commercial and economic exchange, thus the European Union is an important target for those who want to hide the origin of their dirty money and to use the rights and freedoms of the EU common market for this purpose. In addition, the money laundering risk is highlighted by the fact that its Member States are using different legal and financial systems, which can be used by offenders to launder criminal funds or assets. Thereby, the issue of identifying and assessing money laundering risks at the EU level was and still is a major concern, in this regard the mechanisms for fighting with this phenomenon being updated and adapted. It is to mentioned that the first reference to the question of the weak transaction reporting and the problem of money laundering by drug traffickers could be traced to European Parliament Resolution of October 1986 [9]. Soon after, during the meetings of the Ministers, the Council proposed the Member States to consider mutual

recognition, as well as enhanced cooperation on freezing and confiscation of the drug traffickers' assets [8]. Next year, the European Community was engaged in the preliminary work on the United Nations Vienna Convention, which, among other things, covered the criminalisation of money laundering derived from drug-related offences [4], even if the term of money laundering is not directly mentioned in the document.

Today, the money laundering risk is seen as a menace for Union's security, financial integrity and stability, as well as a tool for encouraging the individual perpetrators, organized crime and terrorists to transfer their grey assets into the legal economy. In order to facilitate the fight against money laundering, as well as of terrorism financing and to strengthen the established AML/CFT ecosystem at the level of European Union and Member States, the European Parliament and Council approved on 20.05.2018 the Directive No. 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing. This specific document aims to enhance the Union's existent regime and introduces a new instrument tailored for assessing the money laundering and terrorist financing risk at the level of the European Union. This instrument known as the supranational risk assessment (SNRA) has the role to identify and evaluate the exposure of various sectors, products and services to the money laundering and terrorist financing risks and to propose a list of mitigating measures that can be used to harmonize and synchronize the general effort of Member States in addressing the above-mentioned risks. It is clear that the problems related with money laundering can be effectively approached by Member States only through introducing concrete legal and institutional barriers specifically adapted to each AML/CFT regime in part. However, there are several common shortcomings identified during the SNRA that can be used by Member States as a starting point for improving their local AML/CFT system. The purpose of this paper is to analyse the results of the existent SNRAs and to propose additional recommendations for minimizing the effect of money laundering phenomena in Member States and as a consequence to strengthen the European Union AML/CFT regime. The present article can be treated and viewed as a scientific opinion concerning the findings and outcomes of SNRAs.

LITERATURE REVIEW

The history of important global regulations related to AML can be traced since 1988, together with the entry into force of the United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances [Shehu 2005:222]. Although money laundering was not explicitly mentioned or defined in the Convention, it was the basis of subsequent regulations to prevent money laundering [Stessens 2000:133].

In 1989, the anti-money laundering rules were institutionalised by a group of 7 industrialized countries (G-7) by creating the Financial Action Task Force (FATF), with a specific mission to combat the money laundering threat. The next year FATF issues the 40 Recommendations as a comprehensive framework for fulfilling its mandate, and later, in 2001, has issued 9 additional Recommendations in order to address the growing concern for terrorism [Bergstrom, Helgesson & Morth 2011:1044].

The FATF members in accordance with the Recommendations had to adopt laws and regulations by specifying in details how the threat of money laundering in their respective jurisdictions shall be managed. These Recommendations gave rise to the rules-based approach [Ai, Broome and Yan 2010:394], in which the regulatory authorities established the principles and regulations that allow the identification and prevention of actions that involve money laundering.

Every member state was obliged to apply the necessary measures, which were later assessed during a mutual evaluation process. But this approach has not proven its effectiveness, because of being too prescriptive it didn't allow the regulated entities to individualize their own actions according to the existing threats [Ai, Broome and Yan, 2010:394]. Subsequently, this model was found to be expensive to implement and easy to manipulate by using in the money laundering process the amounts even below the regulated threshold in order to avoid sending a suspicious transaction report [Takats 2011:38]. The risk-based approach was introduced later in 2003 by FATF after reviewing the 40 Recommendations [Koker 2009:336]. The document which summed up the efforts of FATF, banking and securities sectors, includes the recognition of the existing risk (risks), by performing a risk assessment and developing the strategies for managing and mitigating the identified risks.

It follows that AML risk is not clearly defined [Koker 2009:336; Ross, Hannan 2007:110], and the risk-based approach raised more questions than it answered and revealed intrinsic and very real difficulties in managing the relationship between risk and AML [Demetis and Angell 2007:424].

While the adoption of risk-based approach could simply reflect the general move to such broader regulations of financial market, the fact that the risk itself is defined so differently mean that within the AML activities the obliged entities' inability to apply proper risk measurement techniques have led to an inability to distinguish what is really criminal and what is not, which leads to the generation of "a waste of unnecessary information about AML procedures" [Pellegrina and Masciandaro 2009:3]. Clearly, if obliged entities report everything as suspicious, they don't actually report anything [Takats 2011:39].

There is a modest number of researches in the field of efficiency of applying the risk-based model in the area of anti-money laundering, thus there are identified three approaches: the risk-based model as a phenomenon, game theory and agent theory.

Thus, some researchers examined the problems arising from the risk-based approach [Demetis and Angell 2007:424], others followed the application of game theory in identifying the risk of money laundering [Araujo 2010; Arnone, Borlini 2010:68], and a stronger group proposed examining the problem through agent theory [Masciandaro and Filotto 2001:133; Pellegrina and Masciandaro 2009:931; Takats 2011:39]. The problem that underlies the research is the possibility to apply the term of risk as a definition, which implies uncertainty about absolutely concrete phenomena, which can be classified more as crimes due to the certainty arising from the awareness of the final result of the actions carried out by the offenders in the money laundering process. However, in the AML literature and regulatory documents, the terms of risk and uncertainty are sometimes used as interchangeably notions [Guerron-Quintana 2012:10], despite the fact that they are defined differently, the distinction being in the degree of uncertainty of the consequences of a result associated with money laundering.

The discussion at the level of theory regarding the risk-based approach of the money-laundering process has been transposed into law since 2000 (Fig. 1).

1980-1990	2000s	2010s	2017-today
•Tick-box approach •Rules-Based	•Risk Assesment •Risk-Based	•Multidimensional Risk Assesment •Enhanced Risk-Based	•Trans-Border Risk Assesment •Enhanced Risk-Based
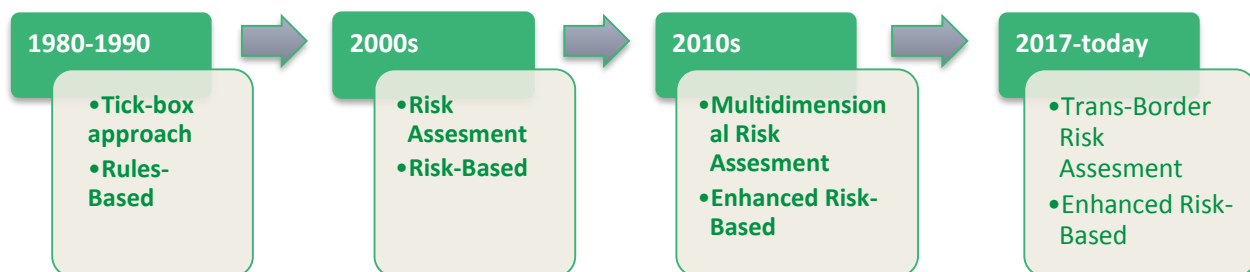
Figure 1. The evolution of the estimation concept of the money laundering phenomenon in the European legislation

Source: Elaborated by the authors based on the Harvey, J. (2008). Just How Effective is Money Laundering Legislation. Security Journal, *21(3), 189-211.*

The problem related with the identification of an efficient mechanism for preventing and combating the money laundering phenomenon has always existed and the basis for finding a solution was to identify the best selection criteria for assessing the phenomenon. Thereby, during the evolution of the legislation and practice in the field, the regulation aspect became more robust, by changing from the rule-based principle to the risk-based approach and finally to the enhanced risk-based approach. So, at the international level the Financial Action Task Force (FATF) [https://www.fatf-gafi.org/], which is the standard setter organization for combating money laundering and the financing of terrorism & proliferation promotes through Recommendation No. 1 [FATF 2012-2019] that:

„Countries should identify, assess, and understand the money laundering and terrorist financing risks for the country, and should take action, including designating an authority or

mechanism to coordinate actions to assess risks, and apply resources, aimed at ensuring the risks are mitigated effectively. Based on that assessment, countries should apply a risk-based approach (RBA) to ensure that measures to prevent or mitigate money laundering and terrorist financing are commensurate with the risks identified...".

The European Union Supranational Risk Assessments (SNRAs) use an established methodology in order to offer a multilateral analysis of the ML or TF risks associated with the activities and behavior of criminals and offenders. The main task is not to analyze a specific sector as a whole, but to highlight the situations when the products and/or services offered by this sector can be misused for ML or TF scopes. These SNRAs are oriented on vulnerabilities identified at EU level, both in terms of legal framework and in terms of effective application. It does not prejudge the mitigating measures that some Member States are applying or may decide to apply in response to their own national ML/TF *risks.*

DATA SOURCES AND USED METHODS

We will analyze European legislation to identify how it treats the money laundering and what forms of risk it assumes would be included in this operation, to demonstrate that in the European Union the ML and FT approach is risk based, but also extended to identify the types of risk per activity.

In order to achieve the stated purpose, a series of scientific research methods were used, among which: the dialectical method, the method of analyzing the literature in the researched field, the comparative method, the induction and the deduction, the scientific abstraction, etc. The use of these methods allowed for a thorough and detailed analysis of European legislation in order to regulate the ML and FT, making some conclusions, but also recommendations on the application but also its improvement. The methodological basis of the article is represented by comparative research in approaching the analysis of the regulatory components.

TRANS-BORDER RISK APPROACH IN EU LEGISLATION

The 1SNRA [6, 2017] and 2SNRA [7, 2019] state that the actions of ML and TF are complex risks affecting the internal market and relating to trans-border activities are the first two reports performed by the European Union (EU) Commission at a supranational level. The reports are considering the ML and TF risks that the EU could meet and recommend an extensive mechanism to minimize them. Both documents provide the most important risks for the internal market in a large number of sectors and the horizontal vulnerabilities, which can influence these sectors. In this respect, the reports include the mitigating actions that should be implemented at EU and national level in order to minimize these risks, as well as several recommendations for the different institutions implicated in processes of combating ML and TF.

Moreover – the risk-based approach expands with a new concept regarding the coverage area – trans-border risk (figure 1). To minimize these trans-border processes, the EU anti-money laundering and combating the financing of terrorism (AML/CFT) structure has introduced unified rules of controls and reporting obligations by the relevant entities and created a vigorous structure for EU Financial Intelligence Units (FIUs) to analyze suspicious transactions and collaborate with each other. Although considerable and durable evolution in this field was obtained, additional improvements and new provisions are necessary in order to strengthen the framework, which will ensure the activities in preventing and fighting ML and TF. The broad view and analysis of money laundering and terrorist financing risks is of paramount importance before any legal proposals or additional regulations will be approved and implemented. In this aspect, the risk assessment is very decisive for the internal market taking into consideration that in their essence the financial flows are integrated and trans-border.

On the other hand, at the European Union level, the Article 6 of the 4AMLD [1, 2015] provides specific requirements for the EU Commission to conduct an assessment of the risks of money laundering and terrorist financing affecting the internal market and relating to trans-border activities. As a result, the Commission shall draw up a report identifying, analyzing and evaluating those risks at Union level and shall update its report every two years, or more frequently if appropriate.

The report referred to in above shall cover at least the following:
a) the areas of the internal market that are at greatest risk;
b) the risks associated with each relevant sector;
c) the most widespread means used by criminals to launder illicit proceeds.

In addition, the Article 7 of the 4AMLD obliges the Member States to take appropriate steps to identify, assess, understand and mitigate the risks of money laundering and terrorist financing affecting the Member State, as well as any data protection concerns in that regard.

Also, it shall keep that risk assessment up to date and shall make use of the findings of the report referred to in Article 6.

After performing their own national risk assessment (NRA), the Member State shall use it to:

a) improve its AML/CFT regime, in particular by identifying any areas where obliged entities are to apply enhanced measures and, where appropriate, specifying the measures to be taken;

b) identify, where appropriate, sectors or areas of lower or greater risk of money laundering and terrorist financing;

c) assist it in the allocation and prioritization of resources to combat money laundering and terrorist financing;

d) ensure that appropriate rules are drawn up for each sector or area, in accordance with the risks of money laundering and terrorist financing;

e) make appropriate information available promptly to obliged entities to facilitate the carrying out of their own money laundering and terrorist financing risk assessments.

Moreover, the Article 8 of the 4AMLD obliges the Member States to ensure that the obliged entities take appropriate steps to identify and assess the risks of money laundering and terrorist financing, by taking into account risk factors including those relating to their customers, countries or geographic areas, products, services, transactions or delivery channels. Those steps shall be proportionate to the nature and size of the obliged entities. In other words, the 4AMLD require the obliged entities under the AML/CFT provisions to assess the money laundering and terrorist financing risk in their own field of activity. As a result, the 4AMLD establishes a three-level system for assessing the risks, threats and vulnerabilities of money laundering and terrorist financing.

Table 1

**The EU three-layer system for assessing
the money laundering and terrorist financing risk**

Layers of EU ML/TF risk assessment		Responsible institution
Layer 1	At the level of the European Union (Supranational)	EU Commission
Layer 2	At the level of each EU Member State (National)	The designated authority
Layer 3	At the level of each obliged entity (Sectorial)	The obliged entities

Source: Adapted by the author based on provisions of Art. 6, 7 and 8 of the 4AMLD.

The SNRAs show that all identified sectors are exposed to some additional vulnerabilities:

- infiltration by criminals – criminals can become owners of an obliged entity or find obliged entities willing to assist them in their money laundering activities.

- forgery – modern technology is making it easier to forge documents and all sectors are struggling to put in place robust detection mechanisms;

- insufficient information-sharing between the public and the private sectors –the need for improved mechanisms for feedback from Financial Intelligence Units to obliged entities remains;

- insufficient resources, risk-awareness and know-how to implement anti-money laundering/countering the financing of terrorism rules – while some obliged entities invest in sophisticated compliance tools, many have more limited awareness, tools and capacities in this field; and

- risks related with FinTech – the use of online services is expected to increase further in the digital economy, boosting demand for online identification. The use and reliability of electronic identification is crucial in this respect.

CONCLUSIONS

a) The EU internal market is still sensitive to money laundering and terrorist financing risks, namely because of a wide variety of products and services, different legal and financial systems of

Member States and new technologies, which can ensure a high level of anonymity. These conditions are creating advantages for perpetrators to launder criminal proceeds.

b) The financial system has a central role in fighting against money laundering. The timely identification of criminal behaviour and money laundering activities followed by the application of provisional measures can help to avoid the abuse of financial services and products.

c) Additional measures are necessary to be applied for strengthening the legal AML/CFT framework of Member States in order to create normative barriers and security layers to be able identify and reject the attempts of criminals to use the reporting entities for criminal purposes.

d) Supervision authorities and reporting entities are dealing with huge workloads on the part related with the application of AML/CFT measures, in some particular cases the capacities of supervision authorities and reporting entities are disproportional with the amounts and volumes of work that they have to perform.

e) Cash and cash like tools are the main ML/TF risk generating instruments.

f) Together with cash and cash like tools, the internet-based businesses such as online casinos, crowd funding platforms, e-money and virtual asset online exchangers are posing substantial levels of ML/TF risks.

RECOMMENDATIONS

a) In the author's opinion, the most strategic solution that can reduce the exposure of the EU internal market to ML/TF risks is a proper and qualitative transposition of the 4AMLD and 5AMLD into the local legislation of Member States. It is to be mentioned that a strong AML/CFT legal framework should cover a three-level regulation system:

- 1st level composed of Laws (Acts, Bills) approved by central state bodies such as Parliament, Government or Head of State, as the case may be, these regulations should include the general provisions for establishing the AML/CFT regime at a country level.

- 2nd level composed of rules, procedures, instructions, etc. issued by law enforcement agencies and supervision authorities which regulate their competences related with specific sectors and/or reporting entities, functions and attributions, rights and obligations according to the limits set up by the 1 level.

- 3rd level composed of internal policies and programs of reporting entities and other third-party institutions which included specific provisions associated with their own field of activity and with the business they are carrying out.

b) Member States should ensure that the virtual assets (crypto assets) and natural/legal persons that are carrying out business activities with virtual assets are duly regulated in accordance with the 5AMLD. The most problematic part is to identify the authority, which will play the role of the supervisor, it is necessary to designate the most appropriate institution, so as to, guarantee that it has enough human, financial and technical resources and institutional capacities to regulate and supervise the activity of virtual asset businesses. In this regard, the Member States can use not only the 5AMLD, but also the provisions of FATF Recommendation No. 15 (New technologies) in order to identify the activities, which can be qualified as virtual asset businesses. It is to be mentioned, that a very important aspect is to avoid as much as possible the anonymity in transactions with virtual assets. Thus, the Member States shall make sure that the virtual asset businesses operating on their territories are applying proper Customer Due Diligence measures.

c) The financial supervision authorities should have sufficient resources to fully carry out their functions in relation with obliged entities and work amount, which results from their attributions. The human resources must be adjusted i.e. it is necessary to have a sufficient number of staff in-charged with AML obligation. In addition, the education and training of staff should be a continuous priority in order to ensure the highest level of staff qualification. The AML/CFT divisions should be supplied with special equipment and software which will offer the possibility to detect in due time the potential illegal activities, as well as to generate certain operational or strategic reports regarding the trends of using the financial services or products. A very important aspect is the proper remuneration of AML/CFT personnel, this principle is necessary to be respected in order to avoid the unhealthy flow of staff and thus to preserve the institutional memory and experience gained during long periods of time. The supervision authorities should guarantee that they have the possibility to

freeze or block the suspicious transactions and operations, even if the reporting entity didn't apply the provisional measures for some reasons. The supervision authorities should reserve the right to apply the provisional measures on their own initiative in a rapid and efficient manner, until the transactions or operations are properly verified.

d) In order to ensure a good application of AML rules it is necessary to pay a special attention to persons who are qualified as founders or shareholders of reporting entities, as well as to persons which are holding senior management positions. The supervision authorities should apply enough fit and proper procedures, especially in relation with big obliged entities. The quality of persons, which are holding or managing the obliged entity can be essential when it comes to minimizing the ML/TF risks. In this regard, the supervision and regulation authorities should make sure that the obliged entity's structure of ownership and control is transparent and that the persons, which are exercising the control through different means have impeccable reputation.

e) The personnel of supervision authorities and reporting entities who are exercising functions in AML/CFT divisions should have legal guaranties and protection measures in order to avoid inappropriate influences because of the specificity of activity that they are performing, these measures should be organized in a manner that will minimize any pressing or improper influence over the employees.

f) An increased attention should be paid on the proper and correct application of due diligence measures in regard not only to new, but also to existing customers. The most common constantly repeated mistake is the fact that the employees of obliged entities are not collecting enough information and documents and are ignoring the necessity to verify the obtained data by using other relevant and trustworthy sources of information, which is paramount for preventing any abuse of criminals. The training of front office personnel is very important for ensuring that the reporting entities have sufficient information, so as to, understand the risk profile of customers. The front officers are those who are interacting directly with clients and they are the first defence line and the quality of their training and education is directly proportional with the integrity of a reporting entity.

g) From the AML perspective the exchange of information between the relevant institutions plays a central role for the protection of a certain jurisdiction from undue influence of criminal elements. The cooperation among authorities at the national level and at the level of Member States should be organized both vertically and horizontally between FIU, supervision authorities, law enforcement agencies and obliged entities. The participants of the AML/CFT chain should be encouraged to exchange information on a regular and spontaneous basis and should contain at least the typologies and ML trends, the list of proceeds generating criminal offences, the list of jurisdictions, products, services and customers profiles, which can posse potential ML/TF risks, as well as the black list of natural and legal persons which should be rejected because of high ML/TF threats. The exchange of information should be organized, so as to, ensure a high level of confidentiality and protection of personal data.

h) It is a good practice to arrange the gradually decrease of cash in the circulation, as well as to shrink the dissemination and use of high denomination banknotes, which are the favourite of money launderers and criminal organizations. Cash is the main instrument, which has the highest level of money laundering and terrorism financing risk because it offers the possibility to guarantee the anonymity, as well as to avoid to a certain degree the recording and tracing of transactions and operations, in this regard cash can be freely transported and exchanged. The Member States, which are traditionally oriented on a cash-based structure of economy are facing higher ML/TF risk. With little effort, the cash obtained through proceeds generating offences can be easily introduced in the circulation of the legal economy. On the other hand, the economies which are primarily using other payment instruments as credit/debit cards or wire transfers have lower ML/TF risks, this fact is possible due to different levels of security, such as registration of every transaction or operation and other relevant information, which offers the possibility to identify and prevent in a timely manner the suspicious and/or criminal activities.

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EFFICIENCY OF SUBSIDIES ALLOCATION
TO AGRICULTURAL ENTERPRISES IN THE REPUBLIC OF MOLDOVA

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ABSTRACT

As the Republic of Moldova has limited opportunities to provide generous financial support to farmers, it is extremely important to efficiently use subsidy means, so as to contribute to the development and modernization of agriculture and rural areas. The development of agriculture in a dynamic way can be achieved on the basis of an efficient subsidy system, administered, monitored and evaluated. The aim of the research is to analyse and evaluate the efficiency and impact of subsidization on the development of the agricultural sector and to ensure a stable increase in agricultural production, emphasizing main support measures in this direction. To carry out this study, various research methods were used, such as: observation method, table method, analysis and synthesis method, comparison method, monographic method, statistical data collection. This article presents an analysis of the evolution of the subsidy fund for agricultural producers, which has increased 2.25 times in the last 7 years. There has also been analysed the structure of beneficiaries of subsidies according to the legal organizational form, who received subsidies during the reference period. It has been found that households are in the top of beneficiaries of subsidies who had a share of 62.03% in 2018. The distribution of subsidies by development regions and per one hectare of agricultural land in the profile of development regions has been studied and it has been found that the predominant share is held by agricultural enterprises in the Centre region, about 38.9% of the means of the subsidy fund. The results of the research show an increase in the subsidy level, through support measures. In this context, we can mention that the support measures must ensure an efficient use of the subsidies.

Keywords: financial result, efficiency, subsidies, investments, subsidy fund, support measures, subsidy means.

În condiţiile în care Republica Moldova are posibilităţi limitate de a acorda un suport financiar generos agricultorilor, este extrem de important utilizarea eficientă a mijloacelor de subvenţionare, astfel, încât să contribuie la dezvoltarea şi modernizarea agriculturii şi spaţiului rural. Dezvoltarea agriculturii pe cale dinamică poate fi realizată în baza unui sistem eficient de subvenţionare, administrat, monitorizat şi evaluat. Scopul cercetării constă în analiza şi evaluarea eficienţei şi impactului subvenţionării asupra dezvoltării sectorului agricol şi asigurării unei creşteri stabile a producţiei agricole, accentuând în această direcţie principalele măsuri de sprijin. Pentru realizarea acestui studiu s-a apelat la diverse metode de cercetare precum: metoda observării, metoda tabelelor, metoda de analiză şi sinteză, metoda comparaţiilor, metoda monografică, preluarea statistică a datelor. În prezentul articol, se regăseşte o analiză a evoluţiei fondului de subvenţionare a producătorilor agricoli, care, în ultimii 7 ani, a înregistrat o creştere de 2,25 ori. De asemenea, s-a analizat structura beneficiarilor de subvenţii după forma organizatorică juridică, ce au accesat subvenţii în perioada de referinţă, se constată că gospodăriile ţărăneşti sunt în topul beneficiarilor de subvenţii care, în anul 2018 deţin o cotă de 62,03%. A fost studiată repartiţia subvenţiilor pe regiuni de dezvoltare şi la un hectar de teren agricol în profilul regiunilor de dezvoltare şi s-a constatat că cota preponderentă o deţin întreprinderile agricole din regiunea Centru, circa 38,9% din mijloacele fondului de subvenţionare. Rezultatele cercetării constată o creştere a nivelului de subvenţionare, prin intermediul măsurilor de sprijin. În acest context menţionăm, că măsurile de sprijin trebuie să asigure o utilizare eficientă a mijloacelor de subvenţionare.

Cuvinte-cheie: rezultat financiar, eficienţă, subvenţii, investiţii, fond de subvenţionare, măsuri de sprijin, mijloace de subvenţionare.

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В условиях, когда Республика Молдова имеет ограниченные возможности предоставления значительной финансовой помощи фермерам, очень важно использовать дотации эффективно, чтобы повлиять на развития и модернизацию сельского хозяйства и сельской местности. Развитие сельского хозяйства в динамике можно осуществить на основе эффективной системы дотаций, управляемой, наблюдаемой и оценённой. Цель исследования состоит в анализе и оценки эффективности и влиянии дотаций на развитие сельского хозяйства и обеспечения стабильного роста сельскохозяйственной продукции, акцентируя в этом направлении основные меры поддержки. В данном исследовании были использованы различные методы: наблюдение, метод таблиц, метод анализа и синтеза, метод сравнений, монографический метод, статистическая обработка данных. Был осуществлен анализ эволюции фонда дотаций сельскохозяйственных производителей, который в последние 7 лет зарегистрировал рост в 2,25 раза. Также, был сделан анализ структуры бенефициаров дотаций по организационно-юридической форме, где установлено что фермерские хозяйства в 2018 году удерживают 62,03%. Было исследовано распределение дотаций по регионам развития и на гектар сельскохозяйственных площадей в профиле регионов развития и установлено что наибольшую долю удерживают сельскохозяйственные предприятия из региона Центр (38,9% из средств фонда дотаций). Результаты исследования показывают рост уровня дотаций, как меры поддержки. Важно подчеркнуть, что меры поддержки должны обеспечить эффективное использование средств дотаций.

Ключевые слова: *финансовый результат, эффективность, дотации, инвестиции, фонд дотаций, меры поддержки, средства дотаций.*

INTRODUCTION

The major objective of agricultural enterprises is determined by the ever-increasing requirements of the population and of the processing industry for agricultural products, and also by the economic and financial results. The achievement of the objective in question is conditioned by the pursuit of a profitable activity based on a reasoned system of state support. This support system is manifested by the allocation of subsidies from the state budget to stimulate investment in the agricultural sector. Subsidies are a form of government support for agricultural enterprises and households to supplement their incomes, stimulate the production of agricultural products and influence the cost of these products, and subsidies are a considerable source of coverage for agricultural production costs.

The issue of subsidizing the agricultural sector has recently become relevant in the Republic of Moldova, being addressed in various scientific papers of local researchers. Among the local researchers who studied this subject we can mention Tomiţa P., Litvin A., Cimpoieş L. and others (Tomiţa 2013; Litvin 2013; Cimpoieş 2013). The mentioned authors referred to the issues related to the structure and role of the subsidy, to the targeting of support measures, as well as to the aspects of the subsidy in the Republic of Moldova in correlation with other European countries. But at the same time, we consider it necessary to argue the effectiveness of the means of subsidization in agricultural enterprises. Based on the above, the aim of the research is to analyze and evaluate the efficiency and impact of subsidization on the development of the agricultural sector and to ensure a stable increase in agricultural production, emphasizing the main support measures in this direction.

DATA SOURCES AND METHODS USED

The informational and statistical support of the investigations was provided by the legislative acts of the Republic of Moldova, generalizing data of the National Bureau of Statistics of the Republic of Moldova, Agency for Interventions and Payment for Agriculture, Ministry of Agriculture, Regional Development and Environment of Moldova, Agency for Land Relations and Cadastre. The concepts of economists from the country and abroad served as methodological support.

The following research methods were used in the stady: observation method, table method, analysis and synthesis method, comparison method, monographic method, statistical data collection.

RESULTS OF OWN RESEARCH AND DISCUSSIONS

Subsidies in agriculture are a widespread phenomenon that is used practically in all the countries. The highest level of subsidy among European countries was registered in Norway, Switzerland and Iceland, where subsidies make up 65-75% of the agricultural production value. The average rate of

subsidies in the European Union (EU) is 35% of the agricultural production value (Tomita 2013: 73).

Subsidizing the agricultural sector in the Republic of Moldova has become the most debatable topic, as the pace of growth of the national economy directly depends on the economic growth in agriculture, a branch that covers more than 30% of the republic's jobs.

In these conditions, in order to move agriculture and rural area on a more dynamic path of development, it is necessary to promote them through subsidies (AIPA 2018, 2019):

• Measures to stabilize agricultural production by protecting agricultural activities from unfavorable climatic factors such as prolonged drought, which is a common phenomenon;

• Measures to stimulate agricultural activities to replace imports with competitive domestic products that can compete with imported products;

• Measures to change the structure of agriculture that should focus on high value-added products which means there should be made a list of products and activities that are considered to provide high added value and to allocate special resources in this direction;

• Measures to protect the rural environment, first of all the soil in all activities in the rural area, not only the agricultural ones;

• Subsidy measures should focus on agricultural production with export potential, and especially on those high value-added products that do not cover domestic consumption needs such as potatoes, vegetables, fruits, meat and milk;

• Measures to develop and support complex businesses with the involvement of several activities of the value chain.

The implementation of subsidy measures will have an impact on increasing incomes of agricultural producers, will create favorable conditions for households. At the same time, these subsidy measures will help increase opportunities for business development in rural tourism.

A high level of mobilization of financial resources to subsidize the agricultural sector has been registered during the last 7 years. Thus, in the period 2012-2018, the subsidy fund with the contribution of external development partners registered a high increase from 400 million lei in 2012 to 900 million lei in 2018 (figure 1).
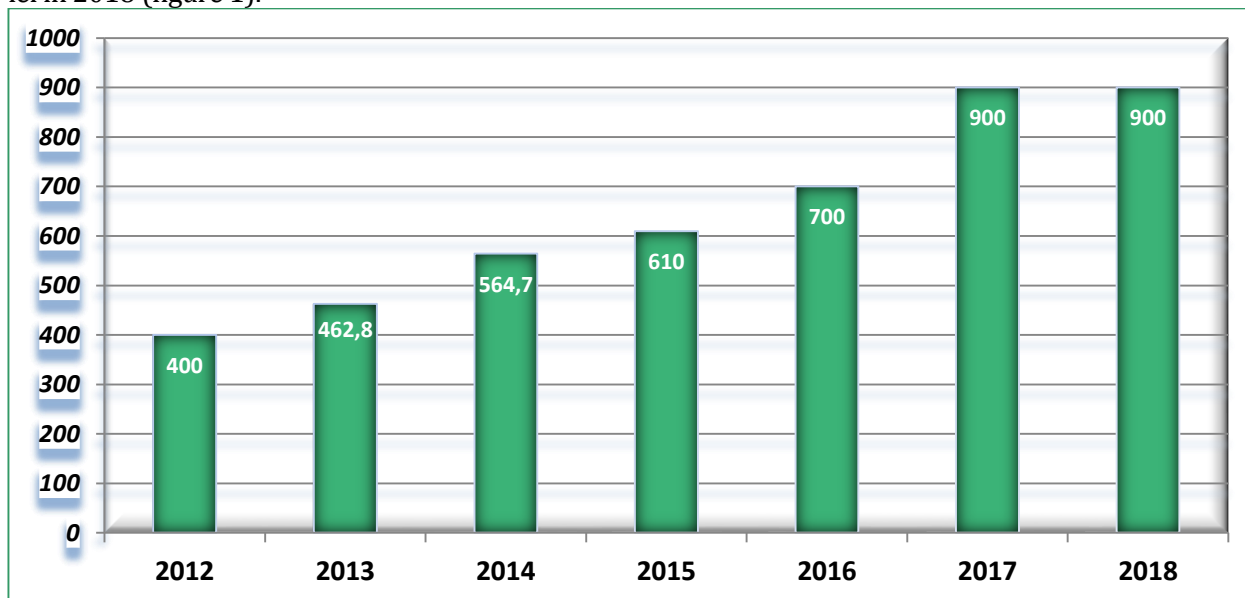
**Figure 1. Evolution of the subsidy fund for agricultural producers
in the Republic of Moldova, million lei**
Source: Elaborated by the author based on the Agency for Intervention and Payments in Agriculture.

The data presented in figure 1 show an increase of the subsidy fund in 2018 compared to 2012 by 500 million lei or 2.25 times.

We would like to mention that one of the biggest challenges is the inability of the Agency for

Intervention and Payments in Agriculture (AIPA) to meet its financial obligations to all grant beneficiaries, because the agency pays on average about 70% of the total amount of subsidies authorized for the management year, the rest being transferred for the following budget year (figure 2).

From the graphic presentation we can notice that from the subsidy fund for 2018 the agricultural producers were financed in proportion of 70.2%. An essential share is constituted of the arrears for 2017, which make up 24.6% of the authorized amount. The contribution for the National Fund for Vine and Wine and the expenses for the administration of the National Fund for Agriculture and Rural Development (NFARD) constituted respectively 3.2% and 2.0%.
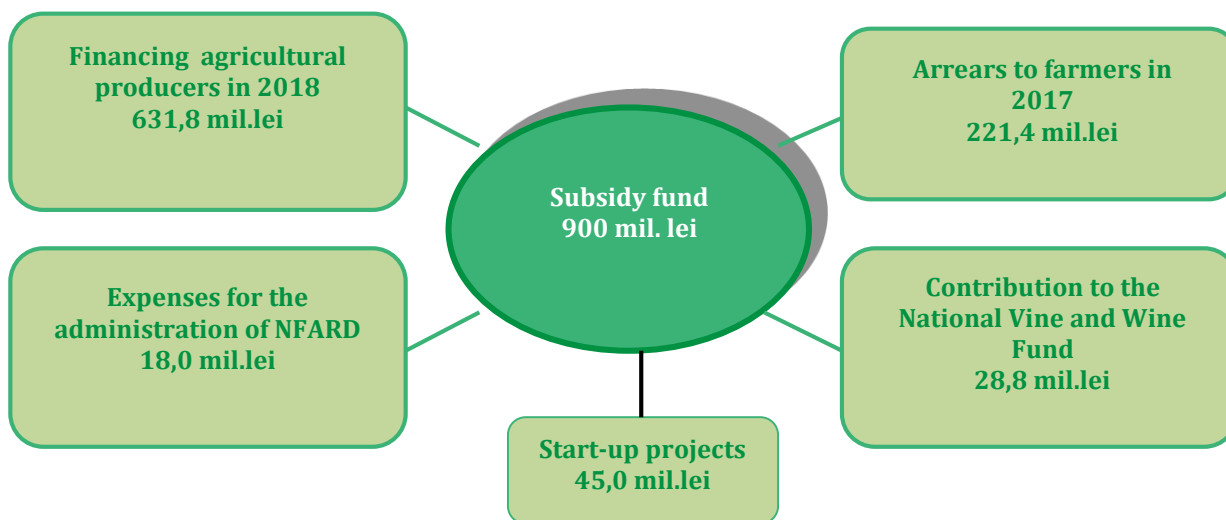
Figure 2. Distribution of NFARD in 2018
Source: Prepared by the author on the database of the Agency for Intervention and Payments in Agriculture

Thus, late payments to beneficiaries are the main problem. Solving this problem requires the grant fund to have a stable amount over several years that would allow 100% funding regardless of current budget revenues.

The volume and structure of subsidies must correspond to the development objectives stipulated in the National Strategy for Agricultural and Rural Development for the years 2014-2020 and contribute to the efficient use of subsidy means. The usefulness and relevance of the grant mechanism can be appreciated from the perspective of the support provided to the implementation of this strategy, which is limited to ensuring three objectives (Strategy 2014-2020):

1. Food security of the country;
2. Production of agricultural products with high added value;
3. Sustainable use of financial resources.

In the context of ensuring the country's food security, subsidizing agricultural producers can be geared towards supporting three main directions:

1. Research on new production technologies;
2. Promoting and implementing measures to adapt and mitigate the effects of climate change on agricultural production;
3. Supporting efforts to diversify the food balance (in the case of our country, ensuring the internal resources of the necessary vegetables, meat and dairy products).

The national strategy for agricultural and rural development for the years 2014-2020 expects the diversification of beneficiaries of subsidies and an increase in investments from 3 billion lei per year (in 2012) to about 4 billion in 2020 (Strategy 2014-2020:86).

As an argument for the implementation of the strategic objectives we can see the diversification of the beneficiaries according to the form of legal organization (table 1).

**Distribution of the subsidy fund according to the forms of organization
of agricultural enterprises in 2018**

Type of organization	Number of beneficiaries	Share, %	Authorized amount of subsidies, mil. lei	Share, %
1. Joint-stock company	43	0,97	41,9	4,34
2. **Agricultural production cooperative**	111	2,52	71,1	7,37
3. Limited liability company	1418	32,15	582,7	60,42
4. **Peasant household**	2736	62,03	252,1	26,14
5. Sole proprietorship	73	1,65	12,9	1,34
6. State enterprise	3	0,07	0,3	0,03
7. Public association	22	0,50	2,8	0,30
8. **Limited partnership**	5	0,11	0,6	0,06
9. Production and trade company	0	0	0	0
Total	**4411**	**100,00**	**964,4**	**100,00**

Source: Elaborated by the author on the database of the Agency for Intervention and Payments in Agriculture.

The data presented in table 1 show that in the structure of the beneficiaries of subsidies in 2018, the predominant share belongs to the peasant households - 62.03%. More than 32% of the beneficiaries are limited liability companies. This fact reflects a change from the 2012-2015 average when limited liability companies and joint-stock companies owned 44% and peasant households and individual enterprises -52%. At the same time, the structure of the amounts authorized by subsidies show us that more than 582 million lei or more than 60% belongs to limited liability companies, while to the peasant households - 26.14%.

Positive development in subsidy policies in recent years have resulted in the inclusion of agriculture in national development strategies as a priority sector and the drafting of the following legislation:

- Subsidy Regulation for the years 2017-2021;
- Government Decision on the distribution of funds of the National Fund for Agriculture and Rural Development (NFARD) no. 455 of 21.06.2017, no. 201-213.

The subsidy regulation for the years 2017-2021 stipulates the eligibility criteria for subsidizing agricultural producers and the ceiling (maximum amount) of subsidies in the profile of measures and sub-measures.

We believe that setting subsidy ceilings for each measure will ensure an efficient use of funds. The amounts granted to subsidizing measures are the most important means by which the money can be directed so as to achieve the development objectives of agriculture and rural area.

The research on subsidies granting has shown that the most important technical constraint is that the allocation takes place on an annual basis. This method has the following disadvantages:

- the farmer lacks the confidence that the measure will be in force the next year;
- it does not allow businesses to join development projects, because their implementation lasts more than a year;
- it allows corruption, because there exists the fear that the subsidies will not be paid later.

Taking into account these disadvantages and the need to improve the subsidy system, the Government has decided to change the way grants are awarded in 2017 on the basis of multi-annual programs, in which the objectives and subsidy measures remain stable. Thus, starting with 2017, the

support measure "Stimulating investments in the acquisition of the No-till and Mini-till equipment" was introduced with an amount of 54.4 million lei. In the profile of support measures, the predominant share in 2018 belongs to the following measures:

- stimulating investments for the development of post-harvest and processing infrastructure 27.68%;

- stimulating investments in the acquisition of agricultural machinery and equipment - 27.08%;

- stimulating investments for the establishment, modernization and deforestation of multi-annual plantations (including fruit and vineyards) - 20.36%.

By the Government's decision, starting with 2017 the support measures will remain stable, which will allow the adjustment to the European practices, ensuring (GD 2017):

1. planning and establishing possible subsidy support measures in accordance with the National Strategy for Agriculture and Rural Development for a period of at least 5 years, thus ensuring continuity in the support of agricultural producers.

2. the activities of receiving, examining, inspecting, authorizing applications for grants and making payments shall be based on the following principles:

    a. efficiency based on economic-financial arguments;

    b. decisional transparency;

    c. continuity of support processes for agricultural producers.

3. classification of agricultural producers in small, medium and large agricultural producers, criteria characteristic of the definitions were provided in Law no. 206-XVI of 07.07.2006 on the support of the small and medium enterprises sector, adapted to the peculiarities of the agricultural sector, being defined depending on the land areas processed by agricultural producers.

4. the implementation of a new system for monitoring the reasonability of investment costs, not to allow an artificial increase in the value of investments in order to unfairly benefit from higher subsidies, given that the investment subsidy is calculated from expenses incurred, confirmed by invoices, payments, and so on.

5. the size of the subsidies will not exceed 50% of the investment cost, and the agricultural producer under a measure will be entitled to the subsidy only once a year.

The Regulation also provides for the inclusion of two new support measures, namely the stimulation of promotion activities on external markets consists in the allocation of financial resources for supporting producer groups via agricultural professional associations in participating and organizing agri-food exhibitions, fairs, and competitions, including external markets' chains, to increase competitiveness and promote local agricultural and food products.

In addition, in order to encourage organic agri-food production, to support small and medium-sized businesses and to attract young people and women farmers to agriculture, subsidies in increased amounts are granted to (AIPA 2017):

    a) young agricultural producers and women farmers -15%;

    b) agricultural producers engaged in cultivating organic crops or breeding organic livestock -20%.

From the perspective of developing the competitive advantages of the agricultural sector and its integration in European and international trade, submeasure 1.6 "Stimulating investments for post-harvest and processing infrastructure development", corresponds mostly to the first objective of the National Strategy for Agriculture and Rural Development for 2014-2020 which consists in increasing the competitiveness of the agri-food sector through restructuring and modernization. Moreover, the level of concentration of subsidy applications is close to 35%, and the share of the allocation of subsidized amounts varies from 22.6% in 2013 to 27.68% in 2018. In figure 3 we present the evolutionary nature of the means subsidized under submeasure 1.6.

The data presented in figure 3 show us that despite the decrease in the allocated amounts from 141.3 million lei in 2014 to 76.4 million lei in 2015, within the period 2015-2017 an increasing trend is maintained. Thus, in 2017 the amount of subsidies for the development of post-harvest-processing infrastructure increased by 104.8 million lei or almost by 2.37 times compared to 2015. In 2018, there was a decrease in the allocated amounts from 181.2 million lei to 170.2 million lei.
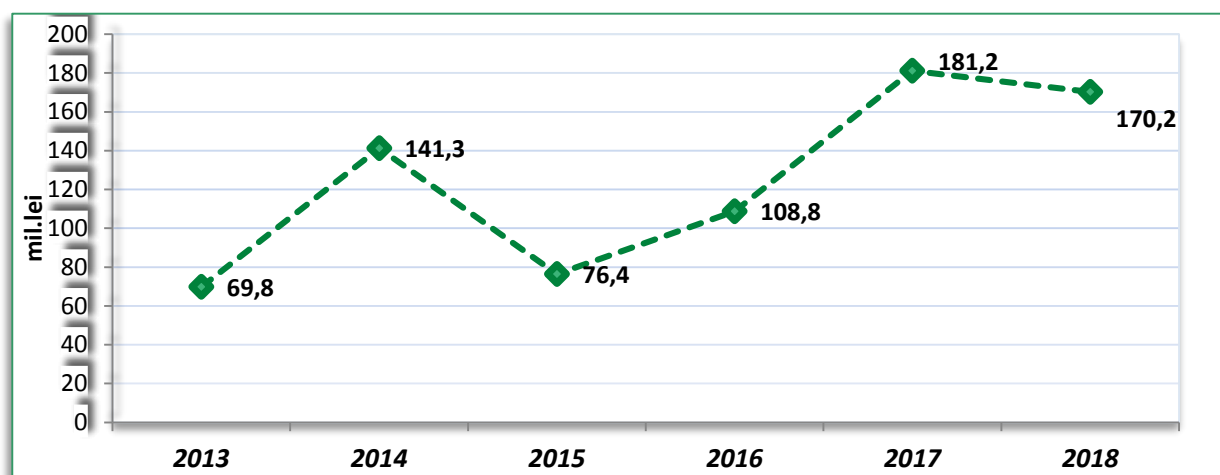
**Figure 3. Dynamics of subsidized amounts aimed at stimulating investments
for post-harvest and processing infrastructure development, mil. lei**
Source: Elaborated by the author on the database of the Agency for Intervention and Payments in Agriculture

One of the most stable subsidy measures over the years is "Stimulating agricultural producers to take loans from financial institutions." The impact of this measure on increasing the competitiveness of agriculture is manifested by:
• boosting the use of credit by a large number of agricultural producers;
• increasing the profitability of the operational activity;
• increasing incomes of agricultural producers and reducing poverty in rural areas.

The subsidy regulation for the years 2017-2021 provides for the granting of loans to agricultural producers for purchasing the following goods and services:
• seeds and planting material;
• fuel;
• fertilizers;
• means of plant and animal protection;
• fodder;
• greenhouse modules, verandas, tunnels, film for greenhouses;
• equipment, agricultural equipment, irrigation systems, anti-hail equipment, etc.;
• technological equipment and machinery to develop post-harvest infrastructure and primary processing.

The maximum amount of credit for a beneficiary is 100 thousand lei, and for producer groups the credit ceiling is 300 thousand lei.

The subsidy for the purchase of refrigerators for storing fruits, vegetables, grapes will constitute (AIPA 2018): for a beneficiary - 3 million lei; and for producer groups - 4.5 million lei.

Based on the fact that the level of technical endowment of agriculture in the Republic of Moldova is low, one of the priority directions of subsidy is considered "Stimulating investments for procurement of agricultural machinery and equipment" whose share for the period 2013-2018 is on average 23.87%. According to the data of the Agency for Intervention and Payments in Agriculture within the period 2012-2016 annually there were purchased over 1500 units of high capacity tractors, high precision seeders, and multi-operational grain harvesters. More than 20% of the total allocated resources are intended for the purchase of multifunctional combines for harvesting cereals, peas, and another 10% were allocated for baling, pressing of vegetable waste. Of the amount of subsidies for this measure, 10% was intended to purchase the No-Till and Mini-Till technology.

The analysis of the support measures and the allocated amounts shows that almost 80% of the total amount of subsidies effectively contributed to the achievement of the strategic objectives. Therefore, in order to increase the effectiveness of support measures, it is necessary to implement the subsidy instruments in more detail in order to make them more targeted.

The study on the allocation of subsidies in territorial profile allowed us to identify some

discrepancies between development regions and administrative districts by the total volume of subsidies [5], their structure and the amount allocated in the calculation per hectare of agricultural land. On average in 2015-2017, most subsidies were allocated to the districts: Cahul (5.09%), Comrat (5.18%), Causeni (4.33%), Hincesti (4.16%), Ialoveni (3.94%). The least subsidies were allocated to the districts: Basarabeasca (1.0%), Vulcăneşti (0.9%), Leova (1.3%), Dubăsari (0.98%). In the period 2015-2018, the ratio between the shares of districts with the largest amounts of subsidies compared to the smallest was from 3.9: 1.0 to 5.2: 1.0. The calculations showed us that the biggest beneficiaries of subsidies are the districts where the economic level of development is high, and the level of consultancy and information for agricultural producers was also high.

Table 2

Dynamics of subsidies calculated per 1 ha of agricultural land in the profile of the districts from the Centre region, lei

Districts	2015	2016	2017	On average 2015-2017
Anenii Noi	297,46	244,91	402,86	315,1
Calarasi	119,44	140,51	347,74	202,6
Criuleni	150,50	534,06	502,28	395,6
Dubasari	111,06	350,33	306,70	256,0
Hincesti	216,82	245,45	326,13	262,8
Ialoveni	312,67	483,99	528,76	441,8
Nisporeni	497,04	243,32	368,69	369,7
Orhei	221,03	244,81	321,30	262,4
Rezina	88,96	192,43	291,40	190,9
Straseni	422,54	416,02	400,34	413,0
Soldanesti	242,54	280,61	536,32	353,2
Telenesti	166,44	220,04	233,30	206,6
Ungheni	177,53	228,82	386,72	264,4
Total	232,62	294,25	380,97	309,3

Source: Author's calculations based on information from the Agency for Intervention and Payments in Agriculture and the Agency for Land Relations and Cadastre.

At the same time, the calculations performed in table 2 attest to the existence of discrepancies in the amount of subsidies per hectare of agricultural land in the profile of the districts from the Centre region. Thus, on average for the years 2015-2017, the highest amounts of subsidies per hectare of agricultural land were received by the districts of Ialoveni - 441.8 lei, Straseni - 413.0 lei and Criuleni - 395.6 lei. And the districts with the lowest amounts of subsidies per hectare were: Rezina - 190.9 lei, Călăraşi -202.6 lei and Teleneşti -206.6 lei.
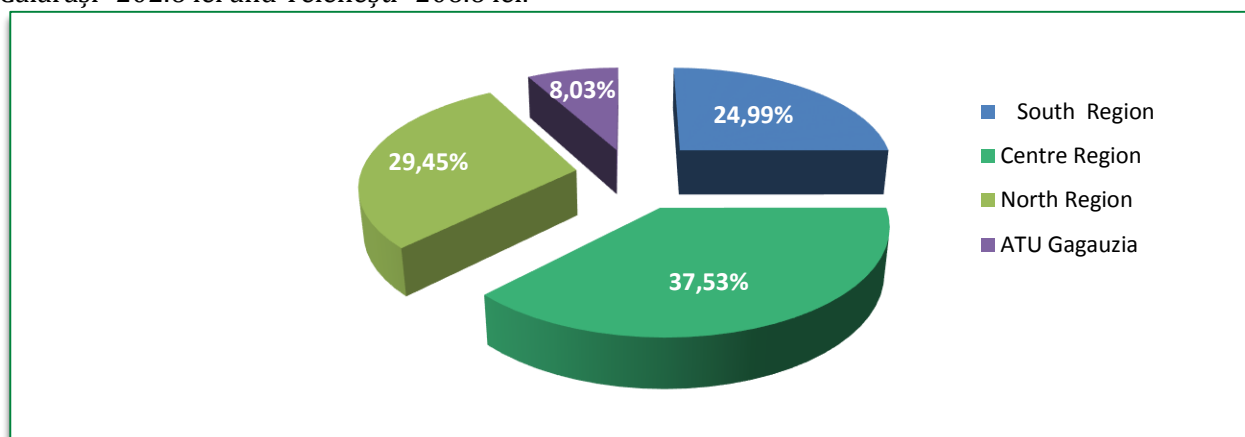
Figure 4. Distribution of subsidies in the profile of development regions within the period 2015-2018 (in percentages)

Source: Elaborated by the author on the database of the Agency for Intervention and Payments in Agriculture

Analyzing the distribution of subsidies by development regions on average for the period 2015-2018 (figure 4) we can see that the predominant share of the means of the subsidy fund belongs to the Center region-37.53% which is explained by the increase of subsidized amounts per hectare of agricultural land in 2018 compared to the average 2015-2017 by almost 37%. The North Region in the reference period used 29.45% of the total amount of subsidies or 8.08% less than the Center region. The agricultural producers from the South region and ATU Gagauzia received respectively 24.99% and 8.03% of the means of the subsidy fund.

Calculations show that for each hectare of agricultural land in the period 2015-2017, the amount of subsidies on average for the republic is 261.2 lei, which is insufficient for the development of competitive agriculture (figure 5).
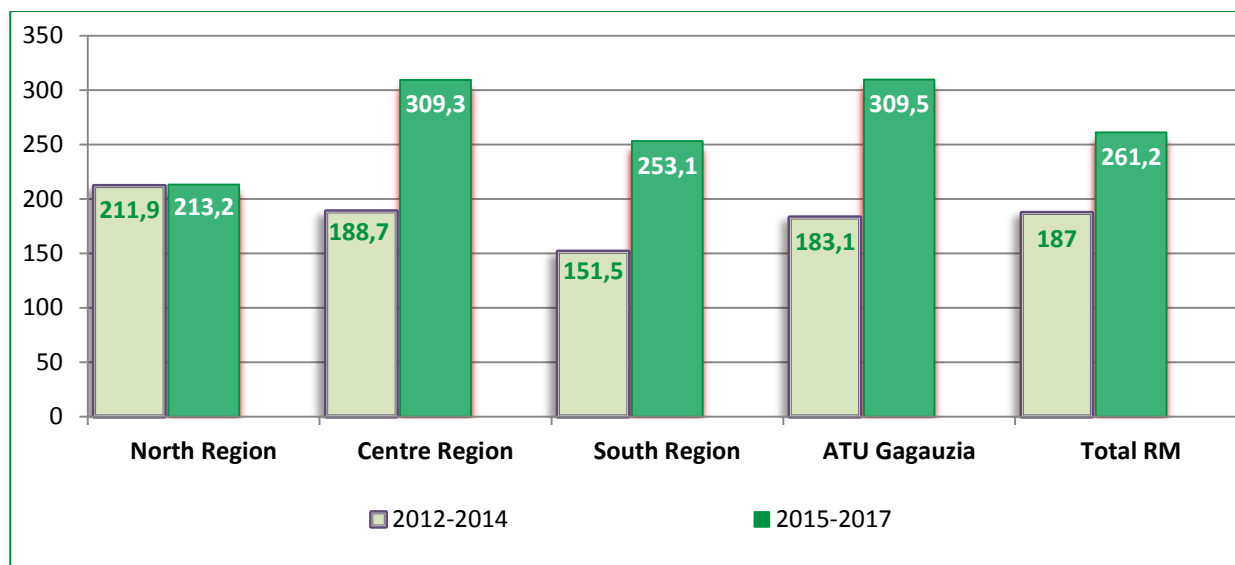
Figure 5. Dynamics of subsidies in calculation per hectare of agricultural land in the profile of development regions (lei/ha)
Source: Author's calculations based on the information from the Agency for Intervention and Payments in Agriculture and the Agency for Land Relations and Cadastre.

The level that exceeds the average subsidy per republic is attested in ATU Gagauzia -309.5 lei/ha and the Center region -309.3 lei / ha. In the South region it is attested that for every hectare of agricultural land in 2015-2017 there were allocated 253.1 lei or 7.9 lei less than the average per republic. The lowest level of subsidy was registered in the North region -213.2 lei/ha or 48 lei less than the average per republic.

The data presented in figure 5 show the dynamic increase of the subsidy level which is a result of the considerable increase of the subsidy fund in the period 2015-2017 compared to the period 2012-2014.

Regarding the economic efficiency, we can see the following:

- Comparing the growth rate of subsidies and sales revenues, we can notice that the growth rate of revenues is lower than that of subsidies by 8.85 pp, which shows that there is a reduction in the efficiency of using subsidies;

- The dynamics shows the reduction of revenues per one leu of subsidies in 2017 compared to 2016 by 5.22 lei or by 28.84%.

CONCLUSIONS

In order to develop agriculture and rural areas in a more dynamic way, it is necessary to subsidize agricultural producers, which can promote a wide range of support measures and especially those related to the protection of agricultural activities from unfavorable climatic factors such as drought, which is a common phenomenon in our country. It has been found that in the last seven years

the trend of subsidizing the agricultural sector has been upward. Thus, in 2018 compared to 2012, the subsidy fund increased by 500 million lei or 2.25 times. In the structure of the subsidies beneficiaries, the largest share of subsidies are accessed by Ltd (limited liability company) which, in 2018, obtained subsidies in the amount of 582.7 million lei or 60.4% of the value of the National Fund for Agriculture and Rural Development, being followed by PH (peasant households) which received subsidies in the amount of 252.1 million lei or 26.1% of the value of the National Fund for Agriculture and Rural Development.

Analyzing the distribution of subsidies by development regions, we found out that within the period 2015-2018 the predominant share is held by agricultural enterprises in the Centre region -37.53% of the means of the subsidy fund.

The calculations showed us that in the reference period the amount of subsidies per hectare of agricultural land constituted 261.2 lei on average for the republic, ATU Gagauzia - 309.5 lei / ha, the Centre Region -309.3 lei / ha, the North Region and the South Region respectively 213.3 and 253.1 lei/ha.

The research results show an increase in the dynamics of the subsidy level. At the same time with the increase of subsidies level, there is a reduction in economic efficiency, which is manifested by the decrease in sales revenues per one leu of subsidies. In the current situation, we consider that measures to monitor subsidies and their efficient use are necessary.

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DIGITAL MARKETING IN THE PRACTICE OF SMALL AND MEDIUM ENTERPRISES IN THE REPUBLIC OF MOLDOVA

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ABSTRACT

The use of modern marketing strategies for small and medium-sized enterprises (SMEs) is an important factor that can contribute to strengthening entrepreneurial activity, qualitative structural changes to SMEs, and ensuring business sustainability and stability. The digital revolution and technologies open up new opportunities for the business sector, improving the quality of communication with customers, while digital marketing (DM) is an important tool that can ensure the competitiveness and effectiveness of actions taken to promote products and services. This article presents the results of a qualitative study of the perception and practice of SMEs in the field of DM conducted by the author in 2019. Twenty entrepreneurs – SME owners in Chisinau were interviewed. The analysis also includes a case study of the BRAVO-MOTORS company practice. The theoretical and conceptual framework of the study is comprised of modern marketing theory, Resource-Based View approach (Wernerelt B.) and Theory of dynamic capabilities (Teece et al.). The results of the study showed that SMEs do not pay due attention to digitalization of business processes, data collection and analysis, optimization of work processes and monitoring of key indicators. The role and importance of developing a marketing strategy is in many cases underestimated, and marketing activities are limited to the use of individual marketing elements only. There is a low level of competence of entrepreneurs in the field of marketing, especially regarding modern marketing tactics and strategies, as well as the lack of an integrated approach to the strategy of promotion and development of the company.

Keywords: digital marketing, small and medium interprises.

Utilizarea strategiilor moderne de marketing de întreprinderile mici și mijlocii (IMM) prezintă un factor important care poate contribui la consolidarea activității de antreprenoriat, la modificări structurale calitative ale IMM-urilor, la durabilitatea și stabilitatea afacerii. Revoluția digitală și tehnologia oferă oportunități noi pentru sectorul de antreprenoriat prin îmbunătățirea calității de comunicare cu clienții, iar marketingul digital (MD) este un instrument important ce poate asigura creșterea competitivității și eficienții acțiunilor întreprinse pentru promovarea produselor și serviciilor. În acest articol sunt prezentate rezultatele cercetării calitative privind percepțiile și practicile IMM în domeniul MD, realizat de către autor în anul 2019. Au fost intervievați 20 de antreprenori – proprietari ai IMM-urilor cu sediul în mun.Chișinău. Analiza include, de asemenea, un studiu de caz al practicii companiei BRAVO-MOTORS SRL. Baza teoretico-conceptuală a cercetării au constituit teoria contemporană a marketingului, abordarea bazată pe resurse (Resource-Based View, Wernerelt B.), teoria capacităților dinamice (Theory of dynamic capabilities, Teece et al.). Rezultatele cercetării au demonstrat că IMM nu acordă o atenție cuvenită digitalizării proceselor de afaceri, colectării și analizei datelor, optimizării proceselor de muncă și controlului indicatorilor cheie. Rolul și importanța dezvoltării unei strategii de marketing în multe cazuri sunt subestimate, activitățile de marketing limitându-se la utilizarea doar a unor elemente de marketing. S-a constatat un nivel scăzut de competență a antreprenorilor în domeniul marketingului, în special privind tacticile și strategiile de marketing modern, precum și lipsa unei abordări integrate a strategiei de promovare și dezvoltare a companiei.

Cuvinte-cheie: marketing digital, întreprinderi mici și mijlocii.

Использование современных маркетинговых стратегий для малых и средних предприятий (МСП) является важным фактором, способствующим укреплению предпринимательской

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активности, качественным структурным изменениям МСП, обеспечению устойчивости и стабильности бизнеса. Цифровая революция и технологии открывают новые возможности для предпринимательского сектора, улучшая качество связи с клиентами, а диджитал-маркетинг (ДМ) является важным инструментом, который может обеспечить конкурентоспособность и эффективность действий, предпринимаемых для продвижения продукции и услуг. В данной статье представлены результаты качественного исследования восприятия и практики МСП в области ДМ, проведенного автором в 2019 году. Было проинтервьюировано 20 предпринимателей - владельцев МСП в г. Кишиневе. Исследование также включает анализ практики компании BRAVO-MOTORS. Теоретико-концептуальной основой исследования послужили современная теория маркетинга, ресурсный подход (Resource-Based View, Wernerelt B.), теория динамических способностей (Theory of dynamic capabilities, Teece et al.). Результаты исследования показали, что МСП не уделяют должного внимания цифровизации бизнес-процессов, сбору и анализу данных, оптимизации рабочих процессов и контролю ключевых показателей. Роль и важность разработки маркетинговой стратегии во многих случаях недооцениваются, а маркетинговая деятельность ограничивается использованием лишь отдельных маркетинговых элементов. Наблюдается низкий уровень компетентности предпринимателей в области маркетинга, особенно касающихся современных маркетинговых тактик и стратегий, а также отсутствие комплексного подхода в стратегии продвижения и развития компании.

Ключевые слова: *диджитал-маркетинг, малые и средние предприятия.*

RESEARCH PROBLEM

Although the development Strategy of small and medium-sized enterprises sector for the years 2012-2020 aim to move from economic development model based on consumption, to a new one based on export, investment and innovation-oriented paradigm, of the political desire for European integration and of the global economic trends, so far, this has not been achieved at the expected level. Despite the overall creation of a more favorable environment for the entrepreneurial activity, the specific aspects regarding the capacity of the SMEs themselves to develop and strengthen their managerial and marketing activity enjoy very little of the policy makers attention.

In recent years, the competition among SMEs in the Republic of Moldova has increased considerably, this fact, to a large extent, being determined by the small retail market, as well as reduced opportunities to enter the international market. The statistics on SMEs show a considerable number of companies that stop their activity due to bankruptcy (BNS 2019).

From the perspective of the development of SMEs in the Republic of Moldova, in the short term, we can see the existence of multiple problems related to the insufficiency of the financial sources and qualified staff, fluctuation of the cadres, accounting and taxation, administrative barriers, etc. However, in the long term, the priority belongs to the requirements of the market, namely to strengthen the competitive capacities of small and medium-sized businesses, to integrate into the European space by using efficient marketing tools, especially the digital one.

The existing challenges show that an important objective for SMEs is to strengthen their competitiveness. In this context, the selection of marketing methods and techniques for improving the degree of competitiveness and further development of SME constitute an important objective of their activity. Marketing development may contribute to the entrepreneurship activity`s consolidation, qualitative structural changes of the SMEs, as well as the sustainability and stability of the business.

The digital revolution and technology offer important opportunities for the entrepreneurship sector by improving the quality of communication with customers, being the premise for increasing the competitiveness and efficiency of the actions taken to promote products and services. People can follow the offers anywhere, anytime, in a flexible and individualized context that is permanently accessible. Currently, digital technologies are a determinative for the business development and competitiveness of the company, and existing research shows that digital technology determines the growth of SMEs, through innovation and management capacity (Foroudi et al. 2017). In addition, digital marketing supports activities to increase the number of clients and to maintain them as permanent clients (Александровский, Казанькова 2015). Thus, DM allows companies to get closer to potential customers (Kannan & Li 2017).

DM is a general term for the marketing of products and services, through digital channels for attracting and retaining customers, being customized and measurable through digital technologies, including web, e-

mail, databases, mobile and digital phones. DM contribute to achieve marketing objectives through applying digital technologies and media (Chaffey 2016). DM is "an adaptive, technology-enabled process by which firms collaborate with customers and partners to jointly create, communicate, deliver, and sustain value for all stakeholders" (Kannan and Hongshuang 2017).

Often there is no distinction between DM and Internet marketing, although they differ significantly. DM incorporates Internet marketing, but is not limited to the Internet. For example, Internet marketing includes SEO, SEM, SMM, Web browsing, advertisement context and other channels that are available to the user only on the internet, while DM includes all of the above plus advertising and promotion through any digital medium outside the network. So, DM involves digital communication that is done both online and offline. Obviously, the advertisement in newspapers, flyers, classic TV and panels do not have the tangency with digital marketing. A panel with a QR code with a link to a web site is already the DM.

The main tools of the DM are: Digital Television and online radio; Advertising in online messengers, applications and games; SEO and SEM – search engine marketing; SMS and MMS delivery; SMM – Social Media Marketing – promotion in social networks; Contextual advertising, banner ads and tizzer ads; Messengers on the official site (JivoSite, Smartsupp); Email marketing; Referral Marketing; VBM – Video Broadcast Marketing; Influences - collaboration with opinion leaders.

RESEARCH GAP AND POSITIONING

Most of researchers agreed that marketing plays a vital role in SMEs success, and helps them stay competitive, influence of marketing as a function of business needs to increase (Wymbs 2011). Entrepreneurial marketing uses networking to build and support marketing activity is based on the use and development of marketing management competencies and tries to be innovative where it can (Gilmore 2011).

Nowadays SME couldn`t afford to avoid an online presence. Digital technology increases the ability to respond positively to customer needs and, at the same time, improves customer-side operations. It has been illustrated that the use of DM brings important benefits to companies, despite a small area of market. DM focuses on the consumers and businesses and increase efficiencies by reducing costs (Gilmore and Carson, 2018; Александровский С.В., Казанькова 2015).

The marketing development of SMEs is based on the life cycle of the company, four stages in its evolution being highlighted: initiating the marketing activity; reactive sales; DIY (do it yourself) marketing approach and proactive integrated marketing (Gilmore 2011). In the initial phase, the marketing activity is reduced to the determination of the optimal functional characteristics of the product, the price and the delivery conditions. At this stage, clients are usually close to the owner of the company people or the persons involved in the business. Increasing the number of new customers and sales in the second stage forces the company to apply formalized marketing procedures and to expand its range of marketing tools used to inform new customers about the company's offer. In the third stage, there is a growing need to pay special attention to marketing and to increase the budget for the marketing activity. The particularity of marketing at this stage will be completely determined by the attitude of the business owner towards marketing. Therefore, success, as well as failure, will depend entirely on the business owner (Gilmore, Carson 2018). Finally, if the company continues to grow (fourth stage of development), it will be necessary to use proactive integrated marketing or professional marketing.

The study of marketing in new SMEs has shown that they are based on marketing concepts to a very small extent, they consider the needs and desires of consumers and their subsequent satisfaction compared to other types of companies (Gilmore 2011). Many highly successful enterprises have never had a formal marketing strategy. Instead, they stumble on their business formula and evolve it to suit market conditions. In many cases, SMEs are change oriented only because their business and existing market is small and so they have to grow to survive or remain profitable, meaning that change is unavoidable. SME owner-manager business decision making can be both opportunistic and reactive to environmental changes and is often incremental rather than risk oriented. T (Gilmore and Carson 2018).

Previous research has shown that SMEs don't use the full potential of the new digital tools and are therefore not deriving the benefits from the opportunities they provide (Taiminen and Heikki 2015). Although DM is a cost-effective, creating awareness and purchase intentions, many companies still find it challenging adopting DM as a marketing strategy (Iankova et al. 2019; Andersson and Wikström 2017; Alves et al. 2016; Siamagka et al. 2015). DM is still a quite new and technically difficult area to understand and implementation can be challenging for companies that lack resources or knowledge.

Researches conducted in post-transitional countries show that most SMEs are characterized by "spontaneous" or "intuitive" marketing, proposing as a possible solution the development of marketing consulting services. The process to engage small business owners' in marketing activities is unplanned, informal, and employed with a bottom-up approach. Moreover, the implementation of different marketing activities is reactive in nature due to the dynamic business environment. Experts argue that customer awareness contributes to increased marketing efficiency, customer loyalty and cost optimization. An individual approach helps cross-communication, communication, and marketing effectiveness analysis (Александровский, Казанькова 2015; Сидорчук 2016; Халиков 2018).

The study realized in Romania emphasizes the importance of online presence and use of DM. In base of a case study are detailed all the steps taken by the SMEs in the process of assuring an online presence. The study shows wide opportunities for extracting, manipulation and analysis of data using digital platforms and DM (Pistol et al 2016).

In the Republic of Moldova, DM is insufficiently studied in SMEs. Existing research shows that majority of SMEs do not carry out any marketing activities (Magenta consulting 2017). In many cases, this situation is determined by misunderstanding the importance of marketing by the owners-managers of SMEs, considering that not all of them possess entrepreneurial capacities and a good part of them are "self-employed".

Based on the above, we conclude that despite the various research interest, the knowledge about the ways in which SMEs actually undertake DM activities and what type of problems they face implementing DM remain limited.

THEORETICAL BACKGROUND

The research of SME practices in the field of digital marketing is based on several theoretical-conceptual approaches regarding the concept of marketing, the role of marketing in managerial activity.

The modern theory of marketing represents marketing activity as aimed at achieving the goals of the enterprise and ensuring its competitiveness. In conditions when it becomes impossible for the manager to accurately calculate the results of his activities, the marketing complex, with its own set of controlled variables, factors and tools, is used by the enterprise as a protective, responsive reaction to the created economic conditions of uncertainty and risk.

Market orientations conceptual approach emphasizes that the behavior of the firm revolves around that of the market. It is a set of behaviors and processes related to a continuous assessment environment (Matsuno et al. 2002).

A Resource-Based View (RBV) is a strategic management theory that helps assess how a firm's resources affect its financial performance. The Resource-Based View suggests that each organization possesses a distinctive set of resources and capabilities that help explain the variance in firm performance over time. The RBV focuses on internal strategic resources that align with the company's strategic intent and serve as the basis of competitive advantage. The underlying assumption of the RBV is that resources and capabilities possessed by firms are heterogeneous and imperfectly transferable (Wernerelt 1984).

Theory of dynamic capabilities. Dynamic capabilities theory examines a firm's ability to achieve and sustain a competitive advantage in a changing environment through reconfiguration and integration of its resources and capabilities (Teece at al 1997). DCT assumes that organizations with greater dynamic capabilities will outperform firms with fewer dynamic capabilities. The dynamic capabilities can lead to better organizational performance; however, companies achieve competitive advantage, not through the existence of dynamic capabilities but through their application and usage (Nedzinskas et al. 2013).

PORPOISE OF THE STUDY

Analysis of SME perceptions and practices in the field of digital marketing, highlighting strong and weak parties, elaborating proposals to improve the situation.

Data and methods. In order to study the knowledge, attitudes and practices of SMEs in the use of digital marketing in 2019, a qualitative sociological study was conducted, based on the semi-formalized interview method. Twenty entrepreneurs – owners of SMEs based in Chisinau with the number of workers from 5 to 15 were interviewed; the level of education of entrepreneurs: high; domain of activities: sales, software development, services, agriculture, advertising areas of activity.

A case study was also carried out based on the BRAVO-MOTORS small company (number of employees - 6 persons, duration of activity – 10 years), which specializes in car repairs and sales of auto parts.

The main research questions were: What is the level of digitalization of SMEs? What are the main marketing strategies of entrepreneurs? What digital marketing tools are used by entrepreneurs?

A database on the Microsoft Access platform was developed for data collection and analysis. This approach also presents a variant of digitizing the process, offering the possibility of registering the data directly into the database and further analysis.

MAIN RESULTS

Currently SMEs need information technologies for efficient functioning and continuous development. Thus, an important component of the SMEs' activity is the need to store and exchange information, automate accounting and other business processes. Performing these tasks leads to optimization and minimization of the company's transaction costs. A unique information system is required to integrate business applications into company`s management, which includes:

1) End-to-end automation of all the main business processes of a trading company

2) Inventory automation and warehouse operations, direct data entry from online cash registers

3) Inventory management automation, supply chains, logistics and transport

4) Financial management, budgeting automation, financial analytics

5) Personnel performance management automatization

6) Customer relationship management automatization

7) Cloud office applications and cloud services for work organization of geographically distributed personnel

8) Cloud communication services and virtual call centers

9) Accounting, tax and statistical accounting automation

10) Automation of the exchange of electronic documents and data with contractors and supervisory authorities.

The digitalization of processes within the SME presents an important premise for the development and implementation of the DM. The results of the research show that only 3 respondents out of 20 of those interviewed appreciate their level of digitalization of SMEs at a high level and another 4 - at medium level. Some of the entrepreneurs could not evaluate the situation in the field of their company's digitalization (8 persons). 4 respondents consider that the level of digitalization of the company is at a low level. It is remarkable that the proportion of entrepreneurs who evaluated the level of digitalization of the enterprise as low and those who could not answer this question coincides with the proportion of companies that so far carry operational records without the use of specialized software such as CRM or ERP (figure 1).
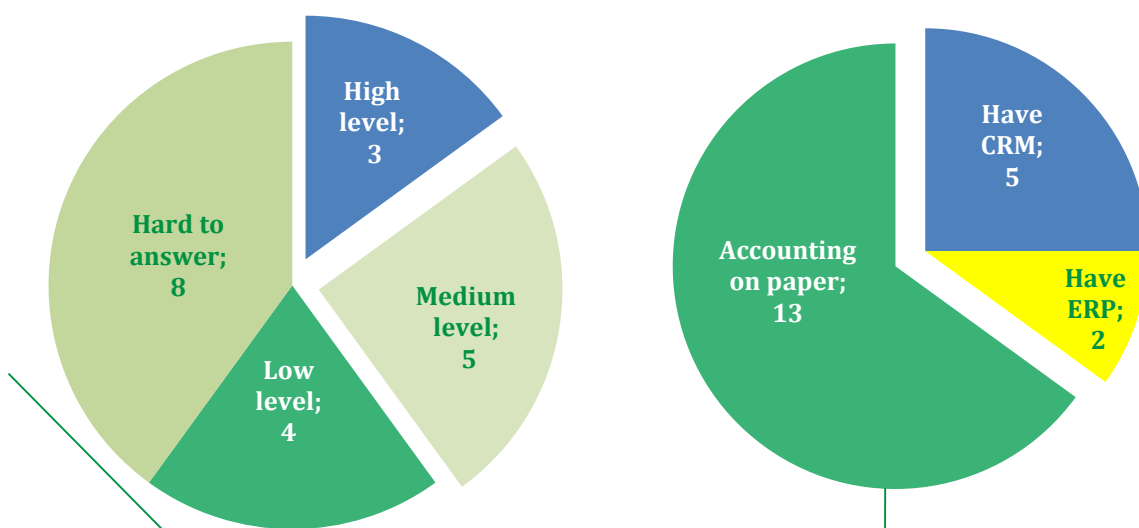
Fig. 1. Self-assessment of the company's digitalization degree (pers.)
Source: Own qualitative study, 2019.

The research results showed that within the studied SMEs in most cases the marketing is the responsibility of the team members and / or the manager / owner. It means, the managers know best the particularities of the business and their niche activity. This approach of dealing with marketing on their own has both a positive and a negative aspect. On the one hand, any additional activity consumes extra time, respectively, no other important activities are performed. Involvement in all activities negatively influences the execution of the main activities as well as the quality of services and products offered by the company. On the other hand, no business can operate without promotion (figure 2).
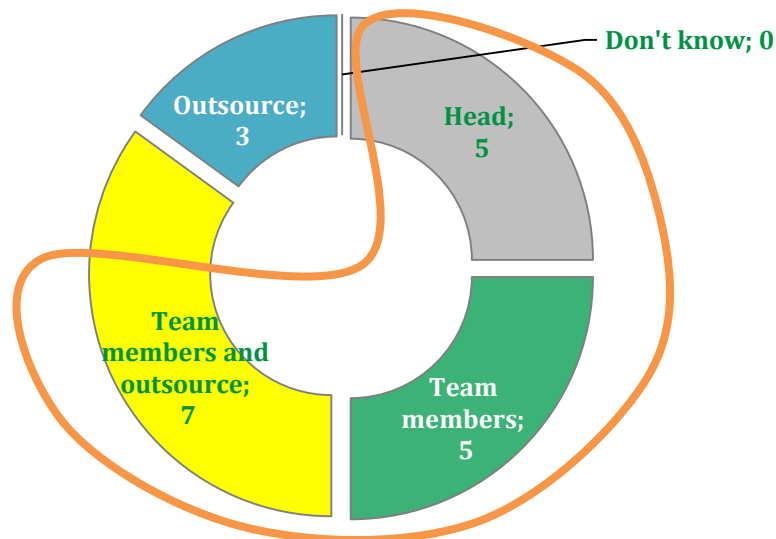
Figure 2. Staff involved in marketing activities (pers.)
Source: Own qualitative study, 2019.

An important aspect of the marketing activity presents the collection, systematization and analysis of the information regarding different aspects of the marketing activity. Obviously, most SMEs in the country do not have the financial resources to carry out or order marketing researches. An important issue arising from these is the ability of SMEs to analyze available information, collected by themselves, which should be the basis of managerial decisions. Respectively, the main sources of information are the internal ones: documents that record the sales and the revenues; customer requests; payment invoices; documents for returning the goods; customer complaints; financial reports etc.

The lack or availability of the tools required for data analysis does not always correlate with their use. In the study, the majority of the entrepreneurs stated that they analyze the structure of the customers and the sources of conversions. But after specifying the answers it was found that in most cases it is not about digital analysis, which is, concrete figures, but only estimates based on individual experience. As a result, we can see that a good part of the entrepreneurs do not carry out the necessary analyzes and do not have the necessary tools for this process (figure 3).
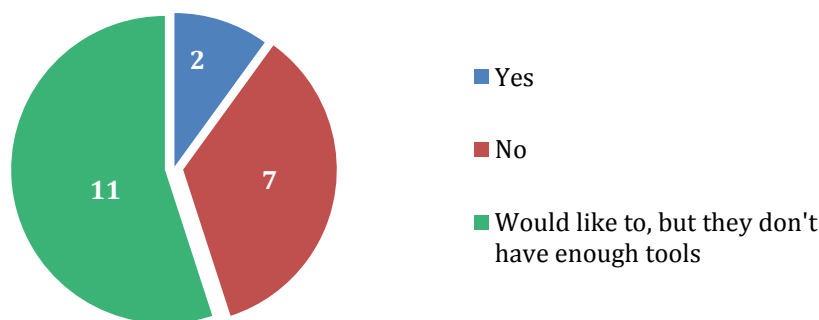
Figure 3. Distribution of answers regarding the analysis of customer structure and conversion sources (pers.)
Source: Own qualitative stud, 2019.

The biggest problem faced by SMEs in 2018 was the perception of marketing tactics and contemporary trends in promoting products and services. At the same time, there is a concern about maintaining customers and attracting them repeatedly to use the products / services provided by companies. According to the self-assessments of the respondents, the SMEs in which they operate did not take the marketing seriously (figure 4).
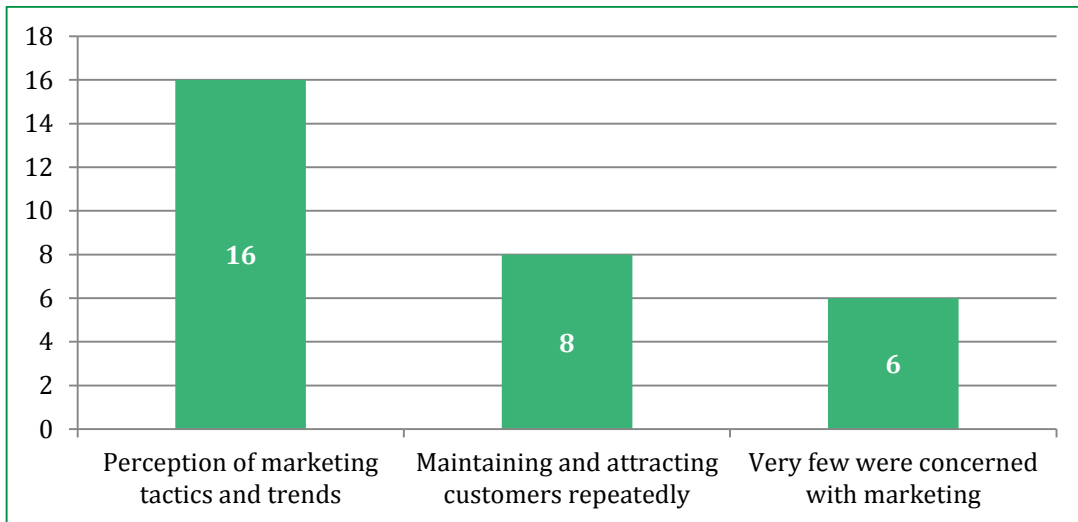
Figure 4. Marketing problems that entrepreneurs face (pers.)

Source: Own qualitative study, 2019.

Most of the studied companies have their own websites (2/3). This fact shows us that entrepreneurs understand the importance of their presence in the web and having their own independent platform in Internet space. However, most of them do not systematically promote websites and they remain invisible to potential consumers/customers. Any business requires promotion but unpromoted websites remain invisible for potential customers and are thus useless. Therefore, this digital marketing tool can be considered as not being used effectively and does not exercise the function of attracting customers and increasing profit.

To get higher search engine rankings websites need to be promoted using SEF, SEO and SEM technologies. In combination with relevant and unique content with a friendly interface, such a site can in the short term be ranked in the search results page list.

Search engine optimization (SEO) is the process of making a website rank for desirable keywords in order to bring in search traffic. SEO targets the factors search engines use to rank pages, including: site technical factors such as HTML titles, HTML tags, keywords, links, image alt text, website organization (everything from the sitemap to any redirects) and other factors help search engines determine what the site is about; Content quality and quantity; reputation: if your domain ranks well, and has links to other respected domains, it's easier to make individual pages rank; local factors (small businesses can rank higher in local searches. SEO helps search engines recognize a website as a local business).

However, SEF, SEO and SEM services are very expensive and decisions on such expenses must be made correctly. The promotion of the websites of companies of different sizes does not differ. So, promoting a website for a small company will cost as much as it does for a large company. In the Internet space all the sites are equal in competitiveness, the inequality only appears in the technical performance and the level of preparation for SEF and SEO. The budget of small businesses can't compare with the budgets of large companies and sometimes occupies a fairly large share of the SME profit.

So, even if online becomes very attractive for entrepreneurs, several regional characteristics of our country must be taken into account.

Case study. For Moldova, the main search engine for goods and merchandise for sale and purchase purposes is the 999.md platform. This means that a relevant online business-specific tool

must be chosen. For example, during a period in the Republic of Moldova there were top SEO projects and several entrepreneurs invested their time and money in developing online commerce, which ultimately did not redeem themselves. For example, the BRAVO-MOTORS company invested 1000 euros and over 2500 working hours for the development of its own online trading platform. In the first 12 months of promotion, the company managed to appear on the top positions on the Page with the Google search engine results on high frequency search requests as "tires" and "car batteries", but this fact did not positively influence the sales volume of the company. on the categories indicated above. This situation changed only once, when in 2014 the 999.md platform did not function normally for 2 weeks and the traffic on the company website and the demand for products promoted through the official website of the company increased 5 times. After 999.md started operating as usual, the indicators dropped again. So, presence in what we call „search engines" is important, but it is not always a key to success. Thus, for different areas different approaches for offering data for search requests should be applied.

Presence on digital maps. Only half of the interviewed respondents found that their company is present on the digital map. This phenomenon can be explained in two ways - either half of the businesses do not have offline offices, or they do not consider the presence on the maps as an important criterion.

Video content. In recent years there has been a trend of increasing video publications. Here we can indicate that SMEs feel and adapt quickly to market trends and requirements. Out of 20 entrepreneurs interviewed 18 declared that they have regular video feeds. Thus, modern technologies and powerful electronic devices widely accessible offer the possibility of any individual to deal with filming, news and organizing their own video channel.

Summarizing the results of the qualitative study, we find that although the entrepreneurs are aware of the importance of the DM and the facilities offered by it, the marketing activities of the SME have a spontaneous, unorganized character and, to a large extent, depend on the skills of the owner in the IT and marketing fields. Most entrepreneurs do not collect and analyze statistics, they do not have a well-established marketing strategy.

At the same time, the study shows that the entrepreneurs - the owners of the SMEs face certain difficulties in incorporating the general marketing methods and procedures, as well as the digital marketing, in the activity of their enterprises. One of the main problems is that the marketing of SMEs, in most cases, is spontaneous. Limited resources and insufficient experience in studying the situation on the market determines that the marketing within the SMEs is executed by the owner and rarely selects the specialists in the field.

For many companies, especially SMEs at the consolidation stage, making the right marketing decision is very difficult, which influences the rate of revenue growth and the position of the SME on the market (business sustainability).

The specificity of marketing, including the digital one, in SMEs is determined by two main factors. First, by contacting SMEs, the client is in close action with the manager and business owner, which is not characteristic of large companies. This fact determines the availability of direct feedback from consumers of goods and services, allowing immediate decision-making for the current activity, compared to large companies, where the adoption of most decisions goes through a long negotiation phase. Mobility in decision-making when working with consumers has the advantage of small businesses, but the price of incorrect decision is higher.

Secondly, an important factor that determines the advantage of SMEs is the ability to constantly change and adapt quickly to new market requirements and conditions. Continuous competition for survival, proximity and dependence on buyers and suppliers, the need to constantly think about reducing costs and others does not leave the possibility that a small business is not concerned about its development. As a result, the issue of constant innovation, use and modification of marketing tools when working with consumers becomes a matter of "life and death" for SMEs. To a large extent this differentiates small businesses from large enterprises, where the implementation of any innovation almost always turns into a long-term process.

At the same time, most of the SMEs in the Republic of Moldova do not work online now. Customers visiting a store or office are more likely to use the "door" or phone to complete a purchase.

Obviously, digital marketing can help a business grow, find new customers in the un-covered market segments.

The research shows that within the strategies that can be approached in the digital environment, it must start from defining the goals of the organization, established according to marketing research to identify the categories of consumers. Of a particular importance for the success of the business is the strategic vision of the entrepreneur, the development of the general strategy and the short and long-term marketing strategy, the identification of the specialized niches, etc.

CONCLUSIONS AND RECOMMENDATIONS

The results of the study showed that entrepreneurs do not pay serious attention to digitalization of business processes, data collection and analysis, optimization of work processes and control of key indicators. As a result, management decisions are made intuitively.

Many entrepreneurs continue to underestimate the role and importance of marketing and are limited to using only individual elements of marketing or, at best, its individual complexes. This means that the adoption and implementation of management decisions is carried out without marketing justification, which jeopardizes the stability and long-term business. Underestimation of the importance of marketing activities creates a significant risk, generates unreasonable solutions

Due to the lack of marketing strategy and resources the owners of SMEs tend to favor marketing activities that generate immediate or short-term results. SMEs are generally inclined to use traditional technologies instead of the updated ones, which are also cheap and easy to use, they do not use the full potential of the new digital tools, and so are not deriving benefit from the opportunities they provide.

The main problems identified based on the sociological study carried out, in the marketing activities of SMEs in the Republic of Moldova are the following:
- Low level of competence of entrepreneurs in the field of marketing
- Lack of data collection and analysis tools
- The impossibility of a qualitative evaluation of the marketing activities without an analytical database based on statistical data
- Lack of understanding of modern marketing tactics and strategies
- The use of DM technologies in a classical way, without analyzing the efficiency.
- Lack of quality management.
- Lack of managing the company's image on the Internet.
- Lack of an integrated approach to the company's promotion and development strategy.

Some of these problems are quite difficult to solve at the level of individual SMEs, which indicates the need to make changes to existing forms of support for small and medium-sized businesses at the institutional level. It is worth paying attention to the development of marketing support for SMEs, especially at the stage of formation.

Based on the study conducted, some recommendations for improving the marketing are proposed, including the DM strategies within the SME.
- SMEs need to pay greater attention to the digitalization of internal processes and the implementation of software as a basis.
- It is necessary to identify the profile of the target audience, the most efficient communication channels and the most promising business segments based on statistical (analytical) data.
- Increased competence of entrepreneurs in the field of marketing.
- The use of DM technologies, taking into account the technical capabilities of collecting the information they offer.
- Correct targeting, which does not aim at wide coverage, but at a higher quality point and quality.
- Develop a short-term and long-term strategy to promote the SME, its products and services.
- Comprehensive and consistent use of different communication channels.
- Managing the company's image on the Internet through Feedback.

Marketing trainings may help small business owners understand the importance of DM and increase their capabilities in using various tools.

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METHODOLOGICAL APPROACH TO THE ELABORATION OF INDICATORS FOR QUANTIFYING THE COMPETITIVENESS OF GOODS

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ABSTRACT

The period of temporary economic isolation caused by the Covid-19 pandemic has affected the economies of all countries in the world. After quarantine and the gradual restoration of the activity of all economic sectors, competition in the world market will intensify. Countries will promote strategies for economic growth, improving economic security, increasing exports, and protecting domestic producers. Given the fact that resources are limited and exhaustible, it is necessary to correctly identify priority sectors when developing strategies. For this purpose, the competitiveness index can be used, since competitiveness is one of the main characteristics that allows anyone to determine its position on the market, and increasing competitiveness ensures victory in the competition. The novelty and purpose of the study is to develop two new integral indices, and to improve one symmetric index of comparative advantage developed earlier. Some of empirical and theoretical methods were used in this research: abstraction, the method of ascending from the abstract to the concrete, comparison, measurement, analysis and synthesis, economic and mathematical modelling. To identify priority sectors, the author used the developed indices to assess the competitiveness of goods, not only on the foreign market, but also on the domestic market. This study can serve economists as a tool for assessing the competitiveness of goods, identifying the strengths and weaknesses of the goods offered, in the context of developing measures to increase competitiveness, which will increase the profitability of entrepreneurship.

Keywords: competitiveness of goods, integral index, symmetrical index of comparative advantage, internal market, foreign market, monofactorial models, bifactorial models, Republic of Moldova.

Perioada de izolare economică temporară, cauzată de pandemia Covid-19, a afectat economiile tuturor țărilor lumii. După ieșirea din carantină și restabilirea treptată a tuturor domeniilor economice, se va acutiza concurența pe piața mondială. Țările vor promova strategii de creștere economică, sporire a securității economice, majorare a exportului, protejare a producătorului autohton. Ținând cont de faptul, că resursele sunt limitate și epuizabile, la elaborarea strategiilor este necesar corect de determinat ramurile prioritare. În acest scop, poate fi utilizat indicele competitivității, deoarece, anume competitivitatea este una din caracteristicele de bază, care permite determinarea poziției pe piață, iar sporirea competitivității asigură victorie în lupta concurențială. Noutatea și scopul cercetării constă în elaborarea a doi indici integrali noi, și îmbunătățirea unui indice simetric al avantajului comparativ elaborat anterior. În studiul dat au fost utilizate următoarele metode empirice și teoretice: abstractizarea, metoda ascensiunii de la abstract la concret, comparația, măsurarea, analiza și sinteza, modelarea economico-matematică. În scopul determinării ramurilor prioritare, autorul a utilizat indicii elaborați la estimarea competitivității bunurilor nu numai pe piața externă, dar și pe piața internă. Studiul dat poate servi ca instrumentariu pentru economiști la estimarea competitivității bunurilor, depistarea punctelor tari și slabe ale bunurilor oferite, în contextul elaborării măsurilor de sporire a competitivității, care ar asigura majorarea profitabilității activității de antreprenoriat.

Cuvinte-cheie: competitivitatea bunurilor, indice integral, indice simetric al avantajului comparativ, piața internă, piața externă, modele monofactoriale, modele bifactoriale, Republica Moldova.

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Период временной экономической изоляции, вызванной пандемией Covid-19, затронул экономики всех стран мира. После карантина и постепенного восстановления деятельности всех экономических секторов, конкуренция на мировом рынке усилится. Страны будут продвигать стратегии экономического роста, повышения экономической безопасности, увеличения экспорта, защиты отечественного производителя. Учитывая тот факт, что ресурсы ограничены и исчерпаемы, необходимо правильно определить приоритетные отрасли при разработке стратегий. Для этой цели может быть использован индекс конкурентоспособности, так как, именно конкурентоспособность является одной из основных характеристик, которая позволяет определить позицию на рынке, а повышение конкурентоспособности обеспечивает победу в конкурентной борьбе. Новизна и цель исследования состоит в разработке двух новых интегральных индексов, и усовершенствовании одного симметричного индекса сравнительного преимущества разработаного ранее. В этом исследовании использовались следующие эмпирические и теоретические методы: абстракция, метод восхождения от абстрактного к конкретному, сравнение, измерение, анализ и синтез, экономико-математическое моделирование. Для определения приоритетных отраслей, автор использовал разработанные индексы для оценки конкурентоспособности товаров, не только на внешнем рынке, но и на внутреннем рынке. Данное исследование может служить для экономистов в качестве инструментария оценки конкурентоспособности товаров, выявления сильных и слабых сторон предлагаемых товаров, в контексте разработки мер по повышению конкурентоспособности, которые обеспечат повышение прибыльности предпринимательства.

Ключевые слова: конкурентоспособность товара, интегральный индекс, симметричный индекс сравнительного преимущества, внутренний рынок, внешний рынок, однофакторные модели, двухфакторные модели, Республика Молдова.

INTRODUCTION

2020 is a difficult year. World economies are waiting for an economic crisis. In order to withstand the conditions of reduction of payments in the state budget, increasing unemployment and decreasing the solvency of the population, countries will have to pursue a policy of protecting domestic producers.

Moldova's economy is more vulnerable than the economy of trading partners. In order to withstand the conditions of political and economic instability, this year's natural cataclysms, reduction of remittances, technical unemployment during the Covid-19 pandemic, decreasing of population incomes, Moldova should reassess its resources, make rational decisions in the field of financial support and correctly identify priority sectors, produce and offer competitive products on both domestic and foreign markets. Therefore, it is relevant to develop indices that would allow the quantification of the competitiveness of domestic goods depending on several factors; and these indices can be used to identify the priority branches of industry.

The purpose of the research is to develop indicators to assess the competitiveness of domestic goods in the internal and external markets, which would take into account the factors influencing competitiveness, based on the availability of statistical data.

Methods of the study are the index method, economic and mathematical modelling. This study is a continuation of the author's research previously published in following articles:

✓ Quantifying the comparative advantage of domestic goods on the internal market. In: The Journal Contemporary Economy. 2018, volume 3, issue 1.

✓ Classification of the competitiveness' factors and new approaches to assessing the competitiveness. In: Economy and sociology. 2018, no. 2.

The novelty of this study consists in the elaboration of two integral indices of competitiveness, one for estimating the competitiveness of domestic goods on the internal market, the second for quantifying the competitiveness of goods on the external market and determining the priority branches of industry.

THE SCIENTIFIC APPROACH OF THE TOPIC IN THE LITERATURE

The competitiveness of goods can be calculated using a comparative advantage index or an integral index. The research objectives are to improve the first index and to develop the second one.

The object of study of most domestic and foreign economists is the competitiveness of the enterprise and not the competitiveness of goods. As the main objective of trade policy is to promote goods on the external market, research is mainly carried out on the competitiveness of goods on this market, but there are very few studies on the competitiveness of goods on the internal market. This trend created the following situation: despite the fact that the Republic of Moldova is an agricultural country, for some goods it partially lost its own market, and the share of imports of tomatoes, cucumbers, other agricultural products and foodstuffs is gradually increasing. The countries of origin of these products are Turkey, Ukraine, Romania, Poland, Belarus, Northern Macedonia, but not Moldova.

The competitiveness indices cited in the scientific literature assess the comparative advantages of goods, especially on the external market (Balassa et al. 1989; Group 1994; Dalum et al. 1998; Siggel 2006; Berkowitz et al. 2006; Hidalgo et al. 2007; Yu et al. 2009; Hausmann et al. 2011; Costinot et al. 2012; Barter 2014). On the other hand, as mentioned, the assessment of goods' competitiveness on the internal market is neglected.

Moldavian economists argue that the main methods of quantifying competitiveness are the differential and complex methods.

In case of the differential method, the competitiveness is evaluated "as the ratio between the values of the parameter of the analyzed goods and of the commodity taken as a basis of comparison. As a parameter there can be used price, production and sales cost, indices of goods quality, such as reliability, durability, maintainability" (Popa et al. 2017: 80).

The calculation of competitiveness based on specific indices has both advantages and disadvantages. The advantage of the described method is that it allows to identify the competitive advantages of the studied object, and the deficiency of the differential method is that the assessment of competitiveness in relation to one parameter is not representative. Therefore, it is necessary to use this method together with a complex method.

The complex method consists in calculating group indicators for regulatory, technical, economic parameters and an integrated index of goods' competitiveness (Popa et al. 2017: 80-81; Safiullin et al. 2008: 84-85). This method is often used, but it is also not perfect. A significant shortcoming of the complex method is that consumer preferences are not taken into account.

In addition to the mentioned methods, there is a third method – the mixed method, which consists in combining specific and integral indices.

All these methods contain common shortcomings:

✓ They do not take into account that the world economy is constantly changing and new factors appear to influence competitiveness;

✓ Product life cycle phases are not taken into account;

✓ Insufficiency of the information base.

A comparative analysis of competitiveness assessment methods used in the research of modern scientists has shown that both simplified indicators and complex models are used.

An example of a simplified method is one based on the calculation of the ratio of quality and price (Safiullin et al. 2008: 83):

$$K_j = \frac{C_j}{P_j} \qquad\qquad (1)$$

where:

K_j – the competitiveness coefficient of goods j;

C_j – the quality of goods j;

P_j – the price of goods j.

„The goods with an optimal ratio of these characteristics are the most competitive" (Safiullin et al. 2008: 83).

The complex models developed in recently published scientific papers relate to assessing competitiveness at the sector, enterprise level, in the context of promoting economic policy, but not competitiveness of goods:

✓ Michael Peneder's Iceberg Model (Peneder 2017:839);

✓ IQCP Model (Innovation, Quality, Competitiveness and Performance) (Al-Shuaibi 2016:101).

However, these models can be adapted to assess the goods' competitiveness.

According to the Iceberg model, the main goal (the tip of the iceberg) is productivity, because „this indicator is able to aggregate the influence of many relevant variables" (Peneder 2017:838). In the author's opinion, the idea underlying the development of this model can be used to estimate the competitiveness of the goods, it is only necessary to select those indicators that are relevant and reflect factors affecting the competitiveness of the goods.

Evidence that the reasoning of Michael Peneder can be used not only to assess competitiveness at the mesoeconomic level, but also at the microeconomic (commodity) level, can be provided by the following cause-effect relationships:

✓ An increase of labor productivity leads to a decrease of production cost and price, so the commodity becomes more competitive;

✓ The increase in labor productivity can be achieved through the use of advanced technologies, innovations, therefore, in addition to increasing labor efficiency, there is an increase in the quality of goods, which is one of the factors of competitiveness.

SYMMETRIC INDEX OF THE COMPARATIVE ADVANTAGE OF THE DOMESTIC GOOD ON THE INTERNAL MARKET: IMPROVEMENT AND APPLICATION

Taking as a basis the previously developed algorithm (Gutium 2018:41-42) and modifying it, eliminating the discovered shortcomings caused by the instability of trade relations that leads to a significant increase of stocks of goods, the author obtained the calculation formula described in equations 2 and 3. For example, the share of changes in stocks of canned vegetables and fruits in the volume of production and the volume of imports amounted to 52.9% in 2017, and in 2018 it was only 18.3%.

$$ICAD_i^{SE} = \frac{Q_i^{D^{SE}} \div \left[\left(Q_i + Q_i^H\right) - Q_i^L - \left(X_i + X_i^I\right)_i - CS_i + \left(M_i + M_i^I\right)\right]}{\sum_{i=1}^{n} Q_i^{D^{SE}} \div \sum_{i=1}^{n}\left[\left(Q_i + Q_i^H\right) - Q_i^L - \left(X_i + X_i^I\right)_i - CS_i + \left(M_i + M_i^I\right)\right]} \qquad (2)$$

$$SICAD_i^{SE} = \frac{ICAD_i^{SE} - 1}{ICAD_i^{SE} + 1} \times 100\% \qquad (3)$$

where:

$Q_i^{D^{SE}}$ – volume of demand for goods *i* on the domestic market, taking into account the shadow economy;

$ICAD_i^{SE}$ – index of comparative advantages of goods *i* on the domestic market (in relation to imported one, taking into account the shadow economy);

$SICAD_i^{SE}$ – symmetrical index of comparative advantages of goods *i* on the domestic market;

Q_i, Q_i^H, Q_i^L – production volume of goods *i*, hidden production (H), lohn production (L);

X_i, X_i^I – export of goods *i*, illegal (I) export;

CS_i – change in stocks of goods *i*;

M_i, M_i^I – import of goods *i*, illegal (I) import.

The following sources of information were used to calculate $SICAD_i^{SE}$:

- ✓ Production in natural expression by types of products;
- ✓ Indicators regarding the circulation of industrial production in the Republic of Moldova competitiveness;
- ✓ Retail trade by type of goods;
- ✓ Harvest of main agricultural crops;
- ✓ Harvest of fruits, berries and grapes;
- ✓ Production of main animal products;
- ✓ Volume of export and import by types of products; etc.

Volumes of hidden production, illegal import and illegal export in the goods division were

calculated on the basis of the adapted inter-branch model (Gutium 2018: 41-42). The author used equation 3 to assess the competitiveness of more than 200 goods on the domestic market for 2014-2019. Table 1 shows the results of calculations for some goods.

       The analysis of the dynamics of the comparative advantage index in the goods division showed that wheat, meslin, barley, oats, corn, sorghum grains, other grains are competitive on the domestic market. In recent years, the comparative advantages of both wheat and wheat flour have increased (table 1).

Table 1

Symmetrical index of comparative advantages of goods on the domestic market

	2014	2015	2016	2017	2018	2019*
Wheat, meslin, barley, oats, corn, sorghum grains, other grains	38,06	36,74	36,58	35,15	37,33	38,01*
Wheat or meslin flour	26,87	26,60	16,34	21,62	23,56	24,00*
Vegetables, fresh or chilled	33,87	30,64	30,54	30,70	29,81	29,73*
Milk and cream, without or with added sugar or other sweetening matter	30,71	30,81	25,08	20,71	25,62	26,31*
Cheese	26,60	27,99	26,81	-46,82	-36,45	-37,46*
Sunflower-seed oil and its fractions	32,01	30,68	30,80	23,97	26,81	27,00*
Sausages and similar products, of meat, meat offal or blood	38,08	37,20	37,11	35,52	37,79	35,97*
Beet sugar and chemically pure sucrose, in solid state	36,17	36,09	13,99	17,77	30,53	33,10*
Centrifugal pumps	-97,22	-96,39	-99,81	-93,87	-95,86	-96,43*
Woodworking machine tools	-100,0	-93,57	-86,25	-100,0	-99,74	-99,80*
Wool yarn	37,61	36,35	34,02	32,72	32,54	32,59*
Carpets and other floor coverings	-41,29	-46,68	-36,14	-57,69	-49,00	-53,90*
Stockings, socks and the like	-70,81	-71,71	-68,49	-73,60	-77,50	-78,12*
Footwear	-64,95	-50,14	-48,88	-52,88	-47,40	-48,41*
Natural sands	38,83	37,42	36,25	35,49	37,82	36,74*
Cement	38,23	30,37	30,44	32,97	34,31	34,60*
Lime for construction	-95,61	-85,56	-95,63	-82,63	-93,80	-93,85*
Registers, account books, notebooks, order books, receipt books, letter pads, diaries and similar articles	20,38	15,28	23,69	12,46	8,93	5,88*
Organic surface-active agents (other than soap); surface-active preparations, washing preparations and cleaning preparations	-77,06	-99,39	-99,98	-79,15	-69,29	-69,90*

*Note: *) the calculations are performed based on provisional statistical data.*
Source: Elaborated by the author.

       Sausages made in Moldova are competitive on the internal market. In 2018, the Symmetrical Index of Comparative Advantages on the Domestic market (SICAD) of sausages and similar products increased by 2.27 percentage points. This growth was caused by a rise in consumer preferences for the purchase of sausages of domestic production and, accordingly, a reduction in demand for those

imported. Imports of these goods diminished by 24.2% compared with 2017. Namely, a growth of the import price by 16.1% affected the decrease in the demand for imported sausages. In the future, this product will not be able to expand its sales markets abroad, as the domestic livestock sector is in decline.

According to the author's calculations, in 2019 sunflower oil had comparative advantage of 27.00% on the domestic market. The competitiveness of this product is increasing on foreign markets. The increase in demand for vegetable oil made in Moldova by 23.61% on the market of European Union is due to the relatively low price of the delivered goods, which decreased by 8.35% compared to the previous year. The main European markets are Spain and Italy.

Vegetables are competitive on the domestic market, but not on the foreign market. During the years 2017-2019, the competitiveness of vegetables on the domestic market decreased due to acute competition. In 2018, the import of this category of goods registered a higher volume than that achieved in 2017 by 88.45%, and in the following year (2019) it increased by 6.62% compared to 2018. In 2019, the main importer of cucumbers was Turkey (71.60%), carrots, beets and other similar edible roots – Belarus (63.57%), tomatoes – Turkey (58.12%), onions and other allied vegetables – Russian Federation (57.51%), cabbage – Northern Macedonia (41.32%).

Cheese, cottage cheese, feta cheese made in Moldova had comparative advantages on the domestic market compared to imported analogue goods up to 2016. But starting with 2017, this kind of goods got comparative disadvantage, because, in that year, the volume of its production suddenly decreased by 79.93% compared to the previous year. In addition, consumer preferences have changed in favor of quality ones, which are high in milk fat. According to the results of studies conducted in 2015-2016 by the Eastern European Foundation (FEE) and in 2017 by the Center for Applied and Certified Metrology (CMAC), „the milk fat content of a large number of dairy products manufactured in Moldova is very low and does not correspond technical regulations on dairy products" (Logos press 2018).

The author's calculations showed that some of the goods of the agro-industrial branch, which were not competitive, could become more competitive if the domestic producer would be supported by the state.

The analysis of comparative advantage of machine building industries' merchandises showed that the goods produced by the German company Dräxlmaier, which deliver electrical equipment, had the biggest advantages on the foreign market. However, this commodity has not comparative advantage on the domestic market, because it is lohn production, and it is not offered on the internal market.

Light industry goods have a comparative disadvantage, but the majority of building materials produced in the Republic of Moldova have comparative advantages on the internal market, since from the point of view of minimizing transportation costs it is more profitable to buy domestic goods than imported. One of the conditions for the development of this industry is a stable increase in disposable income and an increase in the well-being of the population.

During the years 2017-2019, the competitiveness of the manufacture of registers, account books, notebooks, order books, receipt books, letter pads, diaries decreased. Organic surface-active agents, surface-active preparations, washing preparations and cleaning preparations had a comparative disadvantage during the period under review (table 1). This branch has potential. Taking into account that the Covid-19 pandemic caused the increase of the demand for soap, disinfectant solutions, an effective management would ensure the increase of the competitiveness of these goods on the domestic market.

A NEW INTEGRAL INDEX FOR QUANTIFYING THE COMPETITIVENESS OF GOODS: ELABORATION AND APPLICATION

The second task proposed by the author is to develop an integral index of the competitiveness of domestic goods on the internal market.

In the case of the integral index, a certain algorithm is used, which takes into account the factors of competitiveness. Some of the factors are estimated numerically, and others are qualitative. In the literature, the set of factors differs from one author to another, contains quantitative and qualitative factors (Sorokina et al. 2010:214), or only qualitative factors (Moseiko et al. 2017:4). The author

proposes another algorithm for assessing the competitiveness of goods, which differs from those already known. The new algorithm takes into account the competitiveness factors of the goods listed in the previously published article (Gutium 2018:67).

The author's proposal consists in calculating, in the first stage, the following indicators:

$$C_p = \frac{p^a}{p^m}; \quad C_q = \frac{q^a}{q^m}; \quad C_s = \frac{s^a}{s^m}; \quad C_e = \frac{e^a}{e^m}; \quad C_f = \frac{f^a}{f^m}, \tag{4}$$

where:

C_p, C_q, C_s, C_e, C_f – competitiveness of the domestic goods, in relation to the imported goods, by price (p), by the quality of the goods (q), by after-sales service (s), by marketing elements (e), by psychological factors (f);

p^a, q^a, s^a, e^a, f^a – indicators of the analyzed domestic goods;

p^m, q^m, s^m, e^m, f^m – indicators of the imported goods.

The integral index of competitiveness (I_c) can be calculated according to the following formula:

$$I_c = \frac{b_1}{C_p} + b_2 \times C_q + b_3 \times C_s + b_4 \times C_e + b_5 \times C_f, \tag{5}$$

$$b_1 + b_2 + b_3 + b_4 + b_5 = 1, \tag{6}$$

where:

b_1, b_2, b_3, b_4, b_5 – significance coefficients of competitiveness factors (p, q, s, e, f).

If the significance of the factors to the consumer is identical, then:

$$b_1 = b_2 = b_3 = b_4 = b_5 = 0,2. \tag{7}$$

The value of the impact of the price factor and the quality factor depends on the well-being of consumers. Price-quality ratio can be represented by a function dependent on the disposable income of consumers, in the case of a good manufactured by a particular producer (equation 8), and by a function dependent on the welfare of the population, in the case of a group of similar domestic goods (equation 9):

$$\frac{b_2}{b_1} = f(Y - T), \tag{8}$$

$$\frac{b_2}{b_1} = f\left(\frac{PIB}{N}\right), \tag{9}$$

where:

Y – consumer income;

T – income tax;

PIB – the gross domestic product;

N – the number of habitually resident population.

The good is considered competitive when the integral index of competitiveness (I_c) reaches values greater than or equal to 1.

According to the author, among the factors of competitiveness, the first, which has to be evaluated, is price. Today, in the Republic of Moldova, a large part of the population prefers a cheap and relatively low-quality product, and not an expensive and high quality one. The causes of this trend are the low solvency, the devaluation of the national currency, inflation, wage retention, the wage gap, economic impact of the Covid-19 pandemic.

In 2018, the minimum subsistence, based on the stable population, was 1891 lei, the average monthly income available per person was 2060.2 lei, and in 2019 the indicators based on the habitually resident population were corresponding 2031.2 lei and 2880.6 lei. The comparative analysis of the minimum consumption basket with the disposable income of the population on quintiles showed, that in 2018, the disposable income of 40% of the stable population is lower than the subsistence minimum. Quintile II recorded the disposable income of 1824.1 lei, which is 96% of the minimum consumption basket (BNS 2020). Generalizing the above, we conclude, a considerable part of the population, places the price first in the list of parameters for assessing the competitiveness

of domestic goods on the internal market. This tendency is cause by the relatively low level of income.

Domestic enterprises that promote manufactured goods on both domestic and foreign markets take into account national, regional and international standards, such as ISO, IEC, IEC and others. At the stage of assessing competitiveness in relation to quality, the parameters of goods are adjusted to the standards in force on the market. In the case of the internal market, comparative analysis is performed with the parameters of the imported analogue commodity. It is necessary to establish the compliance of the product parameters with the mandatory standards and regulations, which determine the level and limits of these parameters. If at least one of the parameters does not correspond to the mandatory level, which is prescribed by the current rules and standards, the goods cannot be considered competitive, regardless of the result of the comparison of other parameters.

Considering that four of the five groups of competitiveness factors need to be assessed by experts, the author offers a new approach to assessing the competitiveness of goods by quality on the domestic market, which allows making calculations based on available statistical data.

In developing a new approach, the author took into account that the higher the quality of the product, the higher the income elasticity of demand will be. Consequently, the competitiveness of domestic goods in relation to imported goods in quality can be calculated as the ratio between the income elasticity of demand for domestic goods $\left(E_I^a\right)$ and the income elasticity of demand for imported one $\left(E_I^m\right)$:

$$C_q = \frac{E_I^a}{E_I^m} = \frac{\Delta Q^a\%}{\Delta I\%} \left/ \frac{\Delta Q^m\%}{\Delta I\%} \right. = \frac{\Delta Q^a\%}{\Delta Q^m\%} = \frac{\delta Q^a}{Q^a} \left/ \frac{\delta Q^m}{Q^m} \right. . \tag{10}$$

So:

$$C_q = \frac{\delta Q^a}{\delta Q^m} \times \frac{Q^m}{Q^a}, \tag{11}$$

where:
Q^a – the volume of the domestic goods realized on the domestic market;
Q^m – the volume of the imported goods realized on the domestic market;
I – disposable income.
Because elasticity can take both positive and negative values, we can encounter four situations.

Case I: $\qquad \dfrac{\delta Q^a}{Q^a} > 0 \qquad \dfrac{\delta Q^m}{Q^m} > 0$. $\tag{12}$

Case II: $\qquad \dfrac{\delta Q^a}{Q^a} > 0 \qquad \dfrac{\delta Q^m}{Q^m} < 0$. $\tag{13}$

Case III: $\qquad \dfrac{\delta Q^a}{Q^a} < 0 \qquad \dfrac{\delta Q^m}{Q^m} > 0$. $\tag{14}$

Case IV: $\qquad \dfrac{\delta Q^a}{Q^a} < 0 \qquad \dfrac{\delta Q^m}{Q^m} < 0$. $\tag{15}$

In case I we will apply equation 11 for the calculation C_q, and in case II we will consider that $C_q=1$, while in case III we will estimate $C_q=0$.

For case IV we will modify equation 11, and we will use the following formula:

$$C_q = \left(1 + \frac{\delta Q^a}{Q^a}\right) \left/ \left(1 + \frac{\delta Q^m}{Q^m}\right) \right. . \tag{16}$$

The merchandise is competitive in quality if, as a result of the calculations, we get values greater than or equal to 1.

In table 2 mono-factorial models of the competitiveness of goods are presented horizontally, and nonlinear bi-factorial models are above the diagonal.

Components of mono-factorial and nonlinear bi-factorial models of goods' competitiveness

Factors	Price (p)	Quality of goods (q)	After-sales service (s)	Marketing elements (e)	Psychological factors (f)
Price (p)	$b_1 \dfrac{1}{p}$	$b_{12} \dfrac{q}{p}$	$b_{13} \dfrac{s}{p}$	$b_{14} \dfrac{e}{p}$	$b_{15} \dfrac{f}{p}$
Quality of goods (q)		$b_2\, q$	$b_{23}\, qs$	$b_{24}\, qe$	$b_{25}\, qf$
After-sales service (s)			$b_3\, s$	$b_{34}\, se$	$b_{35}\, sf$
Marketing elements (e)				$b_4\, e$	$b_{45}\, ef$
Psychological factors (f)					$b_5\, f$

Source: Elaborated by the author.

Not all five groups of competitiveness factors are influencing factors for all kind of goods. For example, in the case of basic necessities, such as bread, dairy, the main influencing factors are price and quality, and the influence of the after-sales service factor is zero. Therefore, the competitiveness model of goods can contain only two exogenous variables, and the model can be linear or nonlinear.

In analyzing the results, we will focus on the agricultural sector, because Moldova is an agricultural state, and on manufacturing industries, because namely a developed industrial state, and not an agrarian state, can ensure a sustainable growth of the national economy.

The author applied the developed integral index to assess the competitiveness of some goods and presented the results of the calculations in table 3.

Integral index of domestic goods on the internal market

	2014	2015	2016	2017	2018	2019*
Wheat and meslin	1,82	1,34	1,36	1,81	1,19	1,42
Barley	1,25	1,26	1,01	1,00	1,40	1,48
Potatoes	1,02	1,53	1,48	1,53	1,63	1,53
Tomatoes, fresh or chilled	1,74	1,42	2,33	3,36	2,57	2,31
Onions and other allied vegetables	1,49	1,14	1,69	2,60	1,60	1,99
Cucumbers and gherkins, fresh or chilled	2,51	2,67	3,46	4,76	3,75	3,56
Grapes, fresh or dried table varieties	4,15	3,80	3,31	5,62	6,85	6,01
Apples, pears and quinces, fresh	6,27	2,47	3,43	3,47	3,14	3,16
Apricots, cherries, sour cherries, peaches (including nectarines), fresh plums	7,76	6,94	5,59	3,53	3,53	5,30
Milk and cream, without or with added sugar or other sweetening matter	2,08	2,22	1,79	1,25	1,16	1,67*
Crude sunflower-seed oil and safflower oil and their fractions, not chemically modified	1,24	1,35	1,16	1,14	1,31	1,39*
Margarine	0,64	0,75	0,53	0,81	0,67	0,68*
Other prepared or preserved meat, meat offal or blood	0,50	0,83	0,62	0,60	0,99	0,97*
Wool	1,55	1,27	0,97	1,66	2,49	3,36
Carpets and other floor coverings	0,72	0,58	0,38	0,47	0,71	0,48*
Stockings, socks and the like	0,91	0,57	0,46	0,60	0,72	0,68*
Footwear	0,28	0,48	0,37	0,29	0,55	0,24*

*Note: *) the calculations are performed based on provisional statistical data.*
Source: Elaborated by the author.

Of the set of goods analyzed, only some of the domestic goods are competitive by price, such as cereals, barley, onions, grapes, natural honey, apricots, cherries, peaches (including nectarines), plums, apples, pears and quinces, etc. Consequently, mainly unprocessed primary products are competitive on the domestic market, but a lot of highly processed products, high-tech products are not competitive.

In the Republic of Moldova, the technological gap with the main trading partners is growing and, consequently, the competitive potential of many processed goods is declining. Some of products offered by the manufacturing industry are lohn production. The analysis of the competitiveness of domestic goods on the internal and foreign market showed that in the case of many products, the higher the degree of processing, the lower the competitiveness of these goods in comparison with imported similar goods (Gutium 2018:73).

The analysis of the correlation between competitiveness and the level of economic, scientific and technological development of the country showed that the correlation is negative in case of unprocessed primary products, and the correlation is positive in case of high value-added processed goods and high-tech goods (Pojsik 2018:13).

For determining the directions of specialization and the set of goods that need to be promoted on the foreign market, the author proposes the following integral index of the competitiveness of domestic goods on the foreign market, which has included a new component:

$$I_c^{ex} = \frac{b_1}{C_p^x} + b_2 \times C_q^x + b_3 \times C_s^x + b_4 \times C_e^x + b_5 \times C_f^x + G_t, \tag{17}$$

$$C_p^x = \frac{p^x}{p^m}; \quad C_q^x = \frac{q^x}{q^m}; \quad C_s^x = \frac{s^x}{s^m}; \quad C_e^x = \frac{e^x}{e^m}; \quad C_f^x = \frac{f^x}{f^m}, \tag{18}$$

where:

$C_p^x, C_q^x, C_s^x, C_e^x, C_f^x$ – competitiveness of the exported goods, in relation to the imported goods, by price (p), by the quality of the goods (q), by after-sales service (s), by marketing elements (e), by psychological factors (f);

G_t – the degree of technological intensity of the manufacture of the analyzed domestic goods;

p^x, q^x, s^x, e^x, f^x – indicators of the exported goods.

The degree of technological intensity of the manufacture of the goods can be determined using the Expert Judgment method. In the case of the limited time and human resources required to evaluate this indicator, the author proposes to use the following method.

The products can be divided according to the processing level into: unprocessed primary products; semi-processed products; processed products; high-tech products. Each product group can be given the following score (table 4):

Table 4
Estimation of the degree of technological intensity of the manufacture of the goods

Type of goods	G_t
Unprocessed primary products (cereals, fruits, fresh vegetables, raw hides, agricultural wool, etc.)	0.5
Semi-processed products (flour, vegetable oils, refined sugar, tanned hides and skins, woolen yarn, etc.)	1.0
Processed products (cheese, cheese, wine, canned meat, juices, stockings, clothing, etc.)	1.5
High-tech products (means of transport, equipment, electronic products, etc.)	2.0

Source: Elaborated by the author.

The author used the developed integral index, took into account the available resources, human potential, and based on the calculations made conclusion that the priority sectors that need to be developed are the manufacture of: bicycles, scooters; submersible pumps; sports equipment for fitness centers; children's sports suits for outdoor play; lighting installations, led installations; drugs; antifreeze liquid; organic surface-active agents, surface-active preparations, washing preparations

and cleaning preparations; cosmetics; food concentrates and sublimated products; essential oils; sleeping bags, tents; overalls; and so on.

All branches of the national economy, including the agro-industrial, have potential. The main directions for improving the competitiveness of goods, in the current conditions, are: modernization of the processing industry; introduction of innovations; liberalization of trade relations; diversification of goods; supporting agricultural producers, enterprises that procure hi-tech equipment and create new jobs; promoting antitrust policy and improving product quality that should meet the standards of both the European Union and the Eurasian Union. The Republic of Moldova must not give up either the European or the Eurasian market.

CONCLUSIONS

The researcher has achieved the basic goals. The novelty of the research consists in the elaboration of the integral index of the competitiveness of the domestic goods on the internal and external market, and in the improvement of the symmetrical index of the comparative advantage by including a new factor of influence. The estimation of the competitiveness of the goods using the developed indicators showed that on the internal market the unprocessed primary products and the processed products with a low degree of technological intensity of the manufacture of goods are mainly competitive.

The calculations performed with the help of the integral index of the competitiveness of domestic goods on the foreign market showed that mainly the most competitive in the analyzed period were the unprocessed primary products and semi-processed products. In addition, based on the results obtained, the priority sectors were determined: sub-branches of the machine building industry, light industry, chemical industry, food industry, etc.

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SOCIOLOGY

PREDICTORS OF UNDER–FIVE CHILD MORTALITY IN ZIMBABWE

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ABSTRACT

The study examines the role of socio-economic and maternal factors on under–five child mortality in Zimbabwe. The research is based on the analysis of the 2012 population census data. A logistic regression model was employed to determine factors that significantly affect under-five child mortality. The results revealed that maternal educational level, age at first birth, marital status, sanitation and provincial location were significant determinants of under–five child mortality. Public health interventions should focus on mothers; single, formerly married, had early childbearing, uneducated, use unsafe drinking water and toilets.

Keywords: *Under-Five Mortality, Socio–Socioeconomic, Maternal, Determinants, Binary Regression, Zimbabwe.*

Acest studiu examinează impactul factorilor socio-economici și maternali asupra mortalității copiilor în vârstă de 0-5 ani în Zimbabwe. Cercetarea se bazează pe analiza datelor recensământului populației din 2012. Pentru a determina factorii cu impact semnificativ asupra mortalității a acestei categorii de copii a fost utilizat un model de regresie logistică. Rezultatele au arătat că nivelul de educație al mamei, vârsta la prima naștere, statutul marital, sanitația și mediul de reședință sunt factorii determinanți ai mortalității copiilor. Reieșind din acestea, intervențiile în sănătatea publică trebuie să fie orientate spre mame singure, divorțate, cele care au născut un copil la vârstă prematură, fără studii, utilizează surse nesigure de apă și toalete.

Cuvinte-cheie: *mortalitatea copiilor de 0-5 ani, factorii socio-economici, caracteristicile mamei, regresie binară, Zimbabwe.*

В данном исследовании рассматриваются социально-экономические и материнские факторы смертности детей до пятилетнего возраста лет в Зимбабве. Исследование основано на анализе данных переписи населения 2012 года. Для определения факторов, имеющих существенное влияние на смертность этой категории детей, была использована модель логистической регрессии. Результаты показали, что уровень образования матери, возраст при первом рождении, семейное положение, здоровье и место жительства являются одними из определяющих факторов смертности детей. Исходя из этого, меры общественного здравоохранения должны быть направлены на следующую категорию матерей: одиноких, разведенных, родивших детей в раннем возрасте, не имеющих образования, использующих небезопасные источники воды и туалеты.

Ключевые слова: *детская смертность 0-5 лет, социально-экономические, материнские, детерминанты, бинарная регрессия, Зимбабве.*

INTRODUCTION

Globally, the probability of dying before reaching the age of five is estimated at 45 deaths per 1000 live births. This translates into approximately 59 million childhood deaths every year throughout the world (UN 2017). Studies have revealed that the majority of this death (95%) occur in the sub-Saharan

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and South Asia (Chadoka-Mutanda and Odimegwu 2017). In sub-Saharan Africa the under–five mortality has declined by 49% from 183 in 1990 to 93 per 1000 children in 2015, this is still unacceptably high as 1 in 11 children aged below five years still dies every year compared with 1 in 147 on developed countries (UN 2017).

An estimated 45% of newborn babies die within the first month of being born as a result of infections, birth asphyxia, preterm birth complications or intrapartum – related complications (Liu Johnson et al. 2012, Chadoka-Mutanda and Odimegwu 2017). However, a large proportion of this mortality is avoidable mortality. Specific causes of death including pneumonia, undernutrition, diarrhoea and malaria account for 50% of the death that occurs after the first 30 days of life and before turning five years (Black et al. 2010, Liu Oza et al. 2015, Chadoka Mutanda and Odimegwu 2017, Black et al. 2013). Access to health and family planning by girls and mothers before pregnancy, during and after delivery is vital for the welfare of both the mother and the survival of the child (Dodzo and Mhloyi 2017). While immediate and exclusive breastfeeding for six months and immunisation is essential for the survival of children beyond five years (Liu et al. 2015, Black et al. 2013). Furthermore, studies have shown that improvements in sanitation, safe drinking water, vaccinations, and exclusive breastfeeding can reduce childhood deaths caused by diarrhoea and pneumonia (Browne and Barrett 1991, Liu et al. 2015, Pradhan et al. 2018).

Mothers are the primary caregivers of children under five. Their health-seeking behaviour during, before and after pregnancy tends to influence the chances of child survival during the first five years of life. Literature has shown that the access to health of mothers is, in turn, defined by maternal education, province, residence (urban–rural), marital status (Browne and Barrett 1991, Black et al. 2010). To the extent that women are not empowered to seek such services, such women might experience high infant and child mortality, accompanied by high maternal mortality (Black et al. 2013, Cutler et al. 2006, Caldwell 1986).

Mass education has been shown to reduce child mortality in developing countries (Caldwell 1976, Goujon et al. 2015). Mass education opens access to family planning, increases, utilisation of health services, and better employment for mothers. Moreover, female mass education reduces childbearing that is too early, too close and too late in the mother's reproductive life, typical of high infant and child mortality societies. Child Mortality has fallen both the rich and poor developing societies. Furthermore, empowered women are on the forefront in experiencing and leading infant and child mortality decline (Muza 2019, Reher 2004, Caldwell 1976).

Several researches have shown that mothers age at last birth, age first birth, mothers level of education, sanitation, source of drinking water, wealth status, preceding birth interval, birth weight and birth order are significantly associated with risk of dying during childhood (Kembo and Ginneken 2009, Kembo and Ginneken 2011, Mturi and Curtis 1995, Black et al. 2013). Taken together, these factors influence child survival probability.

Mother's province of residence affects their children's mortality experiences. This stems from variations in provincial economic and socio-cultural environments, which may influence children's chances of survival. According to ZIMSTAT (2012), infant mortality for the five years preceding the survey ranged from 36 deaths per 1000 live births in Bulawayo province. During the same period, it ranged from 49 deaths per 1000 children in the province of Bulawayo to 87 deaths per 1000 children in the province of Manicaland. Children in the urban provinces and the two provinces of Matabeleland were less exposed than their counterparts in other provinces to the risk of dying in childhood. During the same period, the under-five mortality rate was 80 deaths per 1,000 live births in rural areas compared to 62 deaths per 1,000 live births in urban areas (ZIMSTAT 2012). Access to health facilities also plays a role in affecting the mortality rates between the urban and rural areas.

Children of widowed women experienced the highest infant and under-five mortality rates of 63 and 97 respectively, followed by those of divorced (53 and 79 respectively) and married (49 and 72, respectively). Infant and under-five mortality rates were 49 per 1,000 live births and 73 per 1,000 children born to women who responded as unmarried at the time of the census. Infant and under-five mortality rates were 49 per 1,000 live births and 73 per 1,000 children respectively for children born to women who responded as never married at the time of the Census. It may not be surprising that kids of formerly married females suffered the largest mortality rate as it may reflect the elevated correlation between their husbands and children's mortality.

Zimbabwe is one of the countries in the sub-Saharan Africa region, where under-five mortality is still unacceptably high. The under-five mortality in Zimbabwe has declined from 103 to 69 death per 1000 live births in 1999 to 2015 respectively (ZIMSTAT and ICF 2015). The progress or gains in under-five mortality decline has been affected significantly in the 1990s due to HIV/AIDS–induced mortality (Adetunji 2000, Garrenne and Gakusi 2006, ZIMSAT 2012), Economic Adjustment Structural Programmes (ESAP) in the 1990s (Kebede et al. 2019, Lutz et al. 2015) and the general economic collapse in 2000 (ZIMSTAT 2012). In 1994, the high prevalence of HIV among adults of reproductive age was accountable for 61% of under–five deaths. Goujon et al. (2015), have argued that mortality has stalled or increased in sub-Saharan Africa because of lack of investments in female education in the 1990s (Goujon et al. 2015, Muza 2019).

In Zimbabwe, the National Child Survival strategy for the 2010 – 15 report has shown that HIV/AIDs accounted for 22% of childhood deaths. Specific causes of death like pneumonia, diarrhoea, measles and malaria are common and still contribute to the deaths that occur before children reach fifth birthday (Liu et al. 2015). This means Zimbabwe has still a high prevalence of infectious diseases as defined by (Omran 2005). Thus Zimbabwe is one of the countries that failed to meet the MDG-4 goal of reducing deaths by 2/3 by 2015 (Chadoka-Mutanda and Odimegwu). It remains unknown if Zimbabwe can achieve the newly set Agenda 2030 for sustainable goals (SDGs). Previous studies have explored the determinants of under–five mortality utilising country's specific Demographic Health Survey (Aheto 2019, Akinyemi et al. 2013, Kaberuka et al. 2017). There is dearth of studies which have used Census data. In most African countries, civil registration and vital statistics (CRVS) are not easily utilisable. Thus, leaving most countries relying on their censuses to inform planning. Nevertheless, existing census data sources are underused and insufficiently analysed because of lack of resources and time. Therefore, utilising the census data will enable the production of indicators at highly disaggregated levels. This study seeks to investigate the socio-economic and maternal predictors of under-five mortality in Zimbabwe using recent 2012 census data.

DATA AND METHODS

This study draws on data from the 2012 Zimbabwe National Census (ZIMSTAT 2012). The decennial national censuses are used to inform policy decisions and planning in Zimbabwe. The 2012 census collected data on various demographic and health indicators including maternal and child health, as well as fertility data, employment, education, occupation, migration and mortality. From the census, a total of 1,373,263 live births occurred five years before the census, and 47,401 under-five deaths occurred.

Model specification

The study employs Mosley and Chen (1984) model of infant and child mortality in developing countries. The model is based on the assumption that socio-economic determinants of under-five mortality essentially work through a common set of biological mechanisms, or proximate determinants, to apply an effect on mortality. Moreover, variables considered in this study were selected based on previous studies that have been conducted at the global level. Potential determinant factors expected to be correlated with under-five child mortality were included as variables of the study. Variables considered in this study were categorised into dependent and explanatory/predictor variables.

Dependent Variables

Data was extracted from the 2012 census section E (for women age 15-49 years). This section, with regards to women's childbirth history, is solely answered by the women. The section on the women's questionnaire asks the status of the last live birth, (When was (name's) last live birth? This was used during data analysis to filter birth that occurred five years before the census (2012, 2011, 2010, 2009, 2008). Later the survival status of the last birth was ascertained by the following question: Is the child still alive? The outcome variable is child survival status (alive or dead). Hence, this variable exhibited a binary outcome; a child born within the previous five years and still alive a value of one (1) was assigned. On the other hand, a value of zero (0) was assigned to those deceased children within the previous five years.

Independent variables

In this study, socio-economic, demographic, and environmental possible determinants of child mortality related factors were considered. Demographic variables: marital status, age of mother at first

and last birth. Socio-economic variables: maternal education and environmental factors: place of residence, sanitation: sources of drinking water and type of toilet.

Education was categorised as: "1= no education", "1= primary", "3= secondary and tertiary". Place of residence of the child was according to provinces which were: 1=Bulawayo, 2=Manicaland, 3=Mashonaland Central, 4=Mashonaland East, 5=Mashonaland West, 6=Matabeleland North, 7=Matabeleland South, 8=Midlands, 9=Masvingo and, 10=Harare. Harare and Bulawayo are also metropolitan cities. Marital status categorised as (1=never married, 2=married, 3=formerly married, which included divorced/separated and widowed). Maternal Age: The respondents were asked about their age in completed years. However, for the purposes of the present analysis, Mother's age at first birth ages were grouped into 4 categories such as: <20, 20–29, 30–39 and 40–49 years. Maternal age at last birth into two categories, 1=<20 years: 2=40–49 years. Toilet facility: categorised as 1=safe toilet (flush toilet, ventilated/improved latrine or toilet) and 2=unsafe toilet (bucket, open field, bush). Drinking water source: 1=safe (piped water, protected: wells, borehole, spring or rainwater): 2=unsafe water (unprotected; rain, spring, well water, other.).

Methods of analysis

Data were statistically analysed using SPSS version 22 and analysed at three levels (univariate, bivariate and multivariate). Descriptive statistics were presented in frequency tables, testing for associations between two variables was done using χ2 (were used to examine the statistically significant relationship between sociodemographic and child survival), while at the multivariate level logistic regression model was used. The dependent variable for this study was dichotomised; hence, a binary regression model (negative log-log) was used to analyse the factors associated under-five mortality. When the probability of a case is very low or very big, negative log-log models are frequently used (Mangombe and Kalule-Sabiti 2018, McCullagh 1980). The adverse log-log feature is asymmetrical, unlike logit and probit models. In SPSS, the function of the nlog log link is the same as the additional log-log in STATA. The complete number of participants reported to be alive was 1,325,682 and dead were 47,401 children, representing only 3.5 % of the total children born.

RESULTS

Univariate results

Table 1 presents the socio-economic and demographic characteristics of the respondents and their under–five survival status. Of the total eligible under–five children born alive (1,373,263) in Zimbabwe since 2008-2012, 1,325,682 (96.5%) were alive, and 47,401 (3.5%) were dead. The results indicate that Harare (capital city) had the highest number of births recorded (17%) while Bulawayo the second biggest city had the lowest (4.4%). The results show that 13.5 % of the children were born in Manicaland province compared to 9.2% in Mashonaland Central. Moreover, majority of children, 57% and 30% were born to mother's age at first birth in the age group 20-29 and 30-39 years old respectively while 7% and 4.6% were born to mother's age at first birth age group <20 and 40-49 years old respectively. The study further reveals that most last births (98.6%) occurred to mothers <29 years old. Table 1, further shows that at least 29.9% of children born were to mothers with primary education compared to 70.1% of those born to mothers with secondary and higher. An overwhelming 87% of under-five children had mothers who were married. About an equal percentage of the respondents and children had safe and unsafe toilets facilities. Of water safety, 71% and 29% of children had access to safe and unsafe water respectively.

Table 1

Frequencies and percent distribution of explanatory variables, 2012, Zimbabwe

Variable		Frequency	Percent
	Alive (yes)	1,325,862	96.5
	Dead (No)	47,401	3.5
Provinces			
	Bulawayo	60,830	4.4
	Manicaland	185,088	13.5
	Mashonaland Central	125,720	9.2

Variable		Frequency	Percent
	Mashonaland East	142,636	10.4
	Mashonaland West	166,596	12.1
	Matabeleland North	70,695	5.1
	Matabeleland South	63,373	4.6
	Midlands	169,297	12.3
	Masvingo	152,032	11.1
	Harare	236,996	17.3
Mothers age at first birth			
	<20 years	104,534	7.6
	20–29 years	779,174	56.7
	30–39 years	424,074	30.9
	40–49 years	65,481	4.8
Mothers age at last birth			
	< 29 years	1,353,955	98.6
	30–49 years	19,308	1.4
Marital status			
	Never Married	65,889	4.6
	Married	1,196,778	87.1
	Formerly married	113,596	8.1
Education			
	No education	3,639	0.2
	Primary	407,409	29.7
	Secondary and higher	962,215	70.1
Toilet type			
	Safe Sanitation	688,752	50.2
	Unsafe Sanitation	684,511	49.8
Water safety			
	Safe	976,580	71.1
	Unsafe	396,683	28.9

Source: ZIMSATAT (2012) and own calculations.

Bivariate results

Table 2 shows the relationship between the socio–demographic characteristics and survival status of their under-five children. A chi-square (χ2) test for independence was used to assess whether there were significant associations between each of the background variable and survival status of the children below five years. The results reveal that all the selected variables; provinces, mothers age at last birth, mother's age at first birth, marital status, mother's education, sanitation variables water safety and toilet type were all statistically significant at p< 0.05, 0.01 or 0.001.

Table 2

Cross–tabulation of under–five mortality and selected background characteristics, 2012, Zimbabwe

		Dead %	Alive %	χ2	Total
Survival status					
	Total	3.5	96.5		1,373,263
Provinces				0.018	
	Bulawayo	2.9	97.1		60,830
	Manicaland	3.9	96.1		185,088
	Mashonaland Central	3.5	96.5		125,720
	Mashonaland East	3.7	96.3		142,636

		Dead %	Alive %	χ2	Total
	Mashonaland West	3.6	96.4		166,596
	Matabeleland North	3.0	97.0		70,695
	Matabeleland South	2.9	97.1		63,373
	Midlands	3.6	96.4		169,297
	Masvingo	3.4	96.6		152,032
	Harare	3.1	96.9		236,996
Mothers age at first birth				0.021	
	<20 years	4.2	95.8		104,534
	20–29 years	3.2	96.8		779,174
	30–39 years	3.6	96.4		424,074
	40–49 years	4.6	95.4		65,481
Mothers age at last birth				0.006	
	< 29 years	3.4	96.6		1,353,955
	30–49 years	4.4	95.6		19,308
Marital status				0.028	
	Never Married	3.9	96.1		65,889
	Married	3.2	96.8		1196,778
	Formerly married	4.4	95.6		113,596
Education				0.016	
	No education	4.1	95.9		3,639
	Primary	3.9	96.1		407,409
	Secondary and higher	3.3	96.7		962,215
Toilet type				0.007	
	Safe Sanitation	3.3	96.7		688752
	Unsafe Sanitation	3.6	96.4		684511
Water safety				0.002	
	Safe	3.4	96.6		976,580
	Unsafe	3.5	96.5		396,683

Notes: P < 0.05.
Source: ZIMSTAT (2012) and own calculations.

Table 2, also, reveals that a significant relationship was found between provinces and survival status. The study also indicates that child mortality is lowest among children born to mothers from Bulawayo and Matabeleland South at (2.9%) for each province. Manicaland had the highest percentage of under-five mortality, 3.9%, and Mashonaland provinces had an average of about 3.6% per province. Mother's age at first birth and under-five mortality show statistically significant a U-shaped relationship. The mortality of under-five children born to older mothers, 40-49 and youngest mothers <20 years were 4.6 and 4.2% respectively The study also indicates that child mortality is higher among children born to mothers who had their last birth at aged 30-49 years while mother's aged less than 29 years had the lowest (3.4%) under-five mortality. The study further reveals that child death to mothers who never married had a higher rate of child mortality compared to married women.

A statistically significant relationship was found between the level of mother's education level and under-five mortality. Women with no education had higher (4.1%), than primary, secondary and higher education, which had 3.9% and 3.3% respectively. There was a significant association in under-five mortality between and availability of safe toilets. About four percent (3.6%) of death were recorded among children who resided in households with unsafe toilets compared to 3.3% with safe toilets. Another important finding was a marginal difference in child mortality between children whose household had access to safe water (3.4%) and unsafe water (3.5%).

Multivariate results. In order to examine the factors that determine the under–five child mortality rate in Zimbabwe, a negative log-log logistic regression model was fitted, and the results are presented in table 3. The results indicated that provinces, mothers' age at first birth, marital status, education, toilet type and water safety were the main predictors of child survival. Mashonaland provinces (Central, East and West), Manicaland, Midlands and Masvingo provinces were less likely to experience child survival than Harare province. The place of residence (province) shows a statistically significant relationship with under-five child mortality. Children from the following Matabeleland provinces: Matabeleland South and Matabeleland North had a higher risk of dying before five years of age (OR= 1.05, p<0.001 and OR=1.04, p<0.001) respectively than Harare province. In addition, children from Manicaland province were less likely to die compared to Harare province (OR=O.94, p<0.001). The mother's age at first birth revealed a strong association with child survival. Women who had their first birth at <20 years were more likely to have reported a child who died before five years (OR=1.03, p<0.001) than those who first gave birth at 40-49 years. There was an unexpected finding by women had had their first birth aged 20 29 years who had the highest likelihood ratio (OR=1,1, p<0.001) of a child under*five mortality than any other age group. Mothers who have last birth at age <29 years were less likely to experience child death than older mothers at age 40-49 years, although this likelihood was not statistically significant.

It can be seen from table 3, that children born to mothers who reported that they were never married had more risks of dying before age five years when compared to those born to married mothers (OR=1.028, p<0.001). Under-five children born to formerly*married mothers also had more likelihood of dying (OR=1.149, p<0.001) compared to children of formerly married mothers. Children born to mothers with secondary and higher education (OR=0.953, p<0.1) and primary education (OR=0.96, p<0.01) were less likely die before five years than those of women with no education. The statistics show that children born to mothers who had unsafe water were more likely to die before the age of five years (OR=1.006, p < 0.05). Children who had access to safe toilet facilities were less likely to die (OR=0.990, p < 0.01) than children with unsafe toilet.

Table 3

Odds ratio of selected predictors of under-five mortality, 2012, Zimbabwe

	95% CI		
	Exponentiated β	Lower	Upper
Threshold	– 1.016	– 1.093	– 0.938
Provinces			
Harare (Ref.)			
Bulawayo	1.043****	0.027	0.056
Manicaland	0.946****	– 0.065	– 0.045
Mashonaland Central	0.984***	– 0.028	– 0.005
Mashonaland East	0.961****	– 0.050	– 0.029
Mashonaland West	0.972****	– 0.038	– 0.017
Matabeleland North	1.044****	0.029	0.057
Matabeleland South	1.058****	0.041	0.071
Midlands	0.968****	– 0.043	– 0.022
Masvingo	0.989**	– 0.022	0.002
Mother's age first birth			
40–49 years (Ref.)			
<20 years	1.036****	0.020	0.050
20–29 years	1.105****	0.088	0.112
30–39 years	1.073****	0.058	0.083
Mother's age at last t birth			
30–49 years (Ref.)			
<29 years	0.972	– 0.107	0.051
Marital status			
Married (Ref.)			

		95% CI		
	Never married	1.028****	0.013	0.043
	Formerly married	1.149****	0.130	0.148
Education				
	No education (Ref.)			
	Secondary and higher	0.953*	– 0.098	0.002
	Primary	0.960***	– 0.047	– 0.035
Toilet type				
	Safe sanitation (Ref)			
	Unsafe sanitation	1.006**	0.001	0.013
Water safety				
	Unsafe (Ref.)			
	Safe	0.990***	– 0.017	– 0.004
		χ2	Df	Sig.
Pearson		3867.105	3204	0.000
Deviance		3355.05	3204	0.031

Notes: Negative Log–log regression.
*p < 0.1, **p < 0.05, ***p < 0.01, ****p < 0.001
Source: ZIMSTAT (2012) and own calculations.

DISCUSSION AND CONCLUSIONS

The results of the multivariate analysis revealed that in general, the strength of the independent variables with dependent variables under-five (U5MR) were strong for the period under consideration. The provincial inequalities in the odds ratio of the mortality burden of U5MR were statistically significant. Harare, Bulawayo Matabeleland North and South had the highest odds of under-five mortality. Since both Harare and Bulawayo are metropolitan cities, this finding is not consistent with other studies that have found lower risks of under-five mortality. It is possible that the high odds of under-five mortality in the metropolitan cities (Harare and Bulawayo) than rural areas is related to the deteriorating socio*economic conditions in Zimbabwe (ZIMSTAT and ICF 2016). Urban cities in Zimbabwe faced water and sanitation in 2008 leading to the resurgence of infectious diseases such as cholera (ZIMSTAT and ICF 2015)

The finding of high under-five mortality in Matabeleland North and South and Bulawayo than in Mashonaland provinces of (Central, South, East), Manicaland and Masvingo provinces ties very well with the hypothesis that provincial inequalities of child survival in Zimbabwe are perhaps driven by socio-economic and cultural differentials (Liu et al. 2015, Adedini et al. 2015). The geo-socio-cultural regions in Zimbabwe composed of predominantly 2 groups, Ndebele speaking people in Matabeleland provinces (Bulawayo, Matabeleland North and South), and Shona speaking in seven remaining provinces. Similar, results have been reported in Nigeria (Adedini et al. 2015).

Unlike Kembo and Ginnkem (2009) who found U-shaped under-five mortality curve by mother's age at first birth, this research finds that the mortality risks for under-five is higher for children born to mothers of 20-40 years of age groups. The study expected to find high mortality risks to children born to very young mothers <20 years and older mothers 40-49 years old. Although the statistic was not significant, mothers who had their last birth <29 years had less likelihood of under-five child death than mothers who had their last birth at 30-49 years. This is in line with other studies that find under-five mortality risks increases in older reproductive age groups (Mugura et al. 2018, Kembo and Ginnekem 2011, Adedini et al. 2015).

Children born to formerly married mothers had more likelihood of death than those born to married and never married. It is possible that such mothers might be vulnerable widows given the patriarchal nature of Zimbabwe, which promotes the intergenerational marriage of older men to younger girls (Mhloyi 1988, Tabutin et al. 2004). It is possible to hypothesise that such male partners will die before the wife leaving the mothers vulnerable. This might be amplified by the fact that Zimbabwe has a high prevalence rate of HIV, which kills more men than women in reproductive ages

(ZIMSTAT 2012). Moreover, HIV is one of the leading causes of under-five mortality (Global Burden of Disease Collaborative Network 2018). Overall this finding suggests the need for protective policies for children to divorced separated and widowed women.

The findings of this study show that under-five mortality decreased with increases in the mother's educational status. This finding is line with other studies in Zimbabwe (Kembo and Ginnekem 2009, Kembo 2011, in Nigeria, (Adedini et al. 2015) and in Kenya, (Gruebner Lautenbach et al. 2015). This is probably because maternal education has been found to better women's socio-economic status, nutrition, housing, sanitation, access to reproductive health, family planning, and child health services (Caldwell 1976,) all of which reduce under-five mortality (Caldwell 1986, Cutler et al. 2006). Maternal education was also found to be an essential factor in the European historical child mortality revolutions (Reher 2004, Dyson 2013). This suggests the need for empowering girls beyond universal primary education as was proposed by MDG-2.

The findings of this study indicated that the provision of improved drinking water and toilets to households has a stronger impact on under-five mortality reduction. This finding supports the thesis that exogenous factors are dominant during the childhood stage (Kembo and Ginnekem 2009, Mosley and Chen 1984). Table 1, above revealed that only about half of the households had improved sanitation. This suggests that Zimbabwe needs to invest more on water and sanitation improvement.

There were significant limitations to the research which should be taken into consideration when interpreting the findings of this study. First, a recall prejudice for household death documents may have underestimated numbers slightly. At the same time, data on deaths reported by respondents during surveys are also incomplete partly because some relatives are reluctant to discuss details of their deceased relatives. However, I am confident that this bias is negligible since I only used the data about the last born kid. Second, since I only looked at the last born baby, this research did not consider all children born alive who died. Moreover, my measure did not include maternal mortality, which could have resulted in less reported under-five deaths in Zimbabwe. Third, it is possible that age heaping of under-five deaths might have affected the study findings. Children under five ages might have been reported older than their actual age, hence their ages plausibly fell outside the under-five age criteria.

Finally, the combination of exposure variables in the model is only one of the possible outcomes, and it should, therefore, be borne in mind that these are not the only possible risk factors that could predict under-five deaths in Zimbabwe. Other factors, such as birth intervals, breastfeeding duration, wealth, place of birth etc., were also discovered to be significant predictors of under-five mortality (Dodzo et al. 2016, Kembo and Ginnekem 2009). Some of this data, however, was not accessible from the census and could not, therefore, be used.

Notwithstanding these constraints, this is the first study to my understanding that used a comprehensive national census data to explore risk factors of under-five death in Zimbabwe at the individual level. The research showed that individual and socio-economic risk variables differ between provinces, maternal age at birth, maternal education, marital status, sanitation and secure drinking water. Public health interventions on under-five mortality should ideally include improvements in maternal education, toilet sanitation, and provision of safe drinking water. Promoting birth postponement by younger mothers and birth stopping before older reproductive ages should also be at the core childhood mortality interventions.

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A FEMINIST REFLECTIVE ANALYSIS OF GENDER MAINSTREAMING IN YOUTH POLICY AND PRACTICE IN THE REPUBLIC OF MOLDOVA

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ABSTRACT

This year, 2020, marks the 25th anniversary of the 1995 United Nations Fourth World Conference on Women in Beijing where gender mainstreaming was introduced. Since then, gender mainstreaming has come to be recognized as the inter-governmentally agreed strategy to achieve gender equality and female empowerment and involves integrating a gender perspective into all aspects of governmental policy, regulation, and budgeting, with an eye towards promoting equality between women and men, social inclusion, and eliminating discrimination in all its forms. Despite notable achievements, an important body of feminist scholarship reveals that gender mainstreaming faces many challenges. In this paper, I contribute to this body of knowledge by using a feminist reflective practice approach to analyze the gender mainstreaming process I undertook as part of the 2020 Comprehensive Youth Sector Analysis in the Republic of Moldova. Through this analysis, I identify a number of challenges that can be understood as part of the larger social construction of gender inequality and conclude that gender mainstreaming processes embody the same gender inequality and patriarchy that we encounter in our larger social structures. This, in turn, acts as one of the greatest threats to gender mainstreaming as an effective strategy to achieve gender equality.

Keywords: gender equality, gender mainstreaming, women's empowerment, reflexive practice, feminism.

Anul curent, 2020, marchează 25 de ani de la cea de-a patra Conferinţă Mondială privind femeile organizată la Beijing în 1995 sub auspiciile Organizaţia Naţiunilor Unite, unde a fost introdusă abordarea de gen. De atunci, integrarea dimensiunii de gen a devenit o strategie, recunoscută interguvernamental, pentru obţinerea egalităţii de gen şi împuternicirea femeilor. Aceasta implică integrarea dimensiunii de gen în toate domenii ale politicii guvernamentale, a reglementărilor şi bugetelor de stat, urmărind promovarea egalităţii între femei şi bărbaţi, incluziunii sociale şi eliminarea tuturor formelor de discriminare. În ciuda realizărilor notabile, o parte importantă a cercetărilor relevă faptul că integrarea dimensiunii de gen se confruntă cu mai multe provocări. În lucrarea de faţă, am contribuit la această totalitate de cunoştinţe, folosind o abordare a practicii feministe reflective pentru a evalua procesul de integrare a dimensiunii de gen ca o componentă a Analizei Comprehensive a Sectorului de Tineret în Republica Moldova, la care am participat în 2020. Prin această analiză, am identificat o serie de provocări care prezintă o parte componentă a celei mai mari construcţii sociale a inegalităţii de gen şi constat că procesele de integrare a dimensiunii de gen cuprind în sine

aceeaşi inegalitate de gen şi patriarhat pe care le întâlnim în structurile sociale mai mari. Totodată, aceasta constituie una dintre cele mai mari ameninţări la integrarea dimensiunii de gen ca strategie eficientă pentru obţinerea egalităţii de gen.

Cuvinte-cheie: egalitate de gen, gender mainstriming, împuternicirea femeilor, practică reflexivă, feminism.

В 2020 году отмечается 25-я годовщина четвертой Всемирной конференции Организации Объединенных Наций по положению женщин в Пекине 1995 г., положившей начало гендерному подходу. С тех пор учет гендерной проблематики стал признаваться в качестве согласованной на межправительственном уровне стратегии по достижению гендерного равенства и расширению прав и возможностей женщин, и предусматривает учет гендерной проблематики во всех областях государственной политики, регулирования и бюджетирования с целью обеспечения равенства между женщинами и мужчины, социальной интеграции и ликвидации дискриминации во всех ее формах. Несмотря на достигнутые успехи, значительное число исследований показывает, что учет гендерной проблематики сталкивается со многими проблемами. Данная статья внесет свой вклад в эту совокупность знаний путем использования подхода феминистской рефлексивной практики для анализа процесса учета гендерной проблематики, который я предприняла в рамках Комплексного анализа молодежного сектора Республики Молдова в 2020 г. С помощью этого анализа я выявила целый ряд проблем, которые можно понять как часть более широкой социальной конструкции гендерного неравенства, и делаю вывод о том, что процессы актуализации гендерной проблематики воплощают то же гендерное неравенство и патриархат, с которыми мы сталкиваемся в более крупных социальных структурах. Это, в свою очередь, является одной из самых серьезных угроз для учета гендерной проблематики в качестве эффективной стратегии достижения гендерного равенства.

Ключевые слова: гендерное равенство, гендерный мейнстриминг, расширение прав и возможностей женщин, рефлексивная практика, феминизм.

INTRODUCTION

Gender equality is the enjoyment of equal rights, responsibilities, and opportunities among women and men and girls and boys; it does not seek to make women and men the same, but that these equal rights, responsibilities, and opportunities are not dependent on being born either male or female (UN Women, n.d.). It is both *a fundamental human right* as enshrined in a number of international treaties and agreements, notably the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social, and Cultural Rights, and Conventional on the Elimination of Discrimination Against Women (OHCHR, n.d.) and a powerful means to reduce poverty and advance development as a number of multilateral organizations (World Bank n.d. and the United Nations n.d.) affirm and a growing body of evidence confirms (Kabeer and Natali (2013), Nieuwenhuis et al. 2018).[1] Gender equality has its roots in both feminist thought and practice, including the women's rights movement. Accordingly, redressing inequity and inequality that disproportionately impacts women through socially constructed power relations and structures in which men dominate remains at the heart of all efforts that seek to realize gender equality (Bacchi 2010:22).

UN Women's 2020 report, *Gender Equality: Women's Rights in Review 25 Years After Beijing*, illustrates that gains – such as global average gender parity in education and legal and regulatory reforms in 131 countries that support gender equality – have been made towards achieving gender equality (UN Women 2020a:4). These gains can be attributed to dedicated action by policy makers, including through gender mainstreaming (GM), which is defined as "the integration of a gender perspective into the preparation, design, implementation, monitoring and evaluation of policies, regulatory measures and spending programs, with a view to promoting equality between women and men, and combating discrimination" (EIGE 2020). Indeed, a number of United Nations intergovernmental resolutions, mandates, and decisions

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[1] *A complete literature review on this topic is outside the scope of the present study. The examples are illustrative in nature.*

that include the 1995 United Nations Fourth World Conference on Women in Beijing, the *Sustainable Development Agenda 2030, and the Paris Agreement have affirmed that GM is the primary intergovernmentally-agreed*, global strategy for achieving the goal of gender equality and empowerment of women and girls. Gender mainstreaming furthermore "moves gender equality and the empowerment of women from the margins to the mainstream of decision-making" (UN Women 2020b:2).

Nevertheless, UN Women's 2020 report on the state of gender equality illustrates that universal gender equality – including equal participation in politics, socioeconomic standing, and freedom from gender-based violence – continues to be out of reach with women predominately on the losing end (UN Women 2020a: 4-5). The still unrealized achievement of gender equality points to potential shortcomings of GM as the "most practical means to achieve gender equality and the empowerment of women" (UN Women 2020b:2).

LITERATURE REVIEW

A review of literature on challenges of GM in policy development yields a number of notable works. Straught (2003) argues that GM is equated with a specific machinery (e.g., staff and/or departments) within governmental institutions instead of being considered a core characteristic of good governance. Cavaghan (2017) examines the barrier of resistance by governmental staff and authorities to GM by comparing two gender mainstreaming policy cases implemented within the framework of the European Commission's Directorate General of Research between 2002 and 2006. Lombardo and Mergaert (2013) also examine the obstacle of resistance, specifically to gender training conducted as part of GM processes in policy-making.

Bacchi and Eveline (2010) provide extensive analysis of GM processes in policy development in countries that include Australia, Canada, and the Netherlands, illuminating dilemmas and challenges such as insufficient time and space for public servants to explore, learn, understand, and embrace GM and a narrow focus on "gender" mainstreaming that oftentimes ignores the diversity of women and the various compounded discrimination they may face based on other factors like ethnicity, gender identity, sexual orientation, and others. Reflecting on her own experience in the field of GM, Mukhopadhyay (2016a) analyzes how "feminist concerns with the political project of equality are being normalized in the development business as an ahistorical, apolitical, de-contextualized and technical project that leaves the prevailing and unequal power relations intact…Gender mainstreaming is being interpreted as getting rid of the focus on women, regardless of context." Mukhopadhyay (2016b) dives deeper into this challenge facing GM, describing it as being "streamed away into… bureaucracies."

A common thread within this body of research is the use of the feminist lens, independent of whether it was explicitly or implicitly employed to understand core challenges to GM in policy development. In other words, these scholars have sought to understand failings and challenges of GM to achieve gender equality by examining it from the standpoint of those whose particular lives are lived in oppression (i.e., women and girls) under a predominately male-dominated world (i.e., patriarchy). Most of these works examine the challenges from a third-person point of view with the exception of Mukhopadhyay (2016a; 2016b) who uses first-person inquiry of her own direct experience in GM to examine the obstacles that have undermined GM as a strategy globally. However, research conducted and published by gender practitioners-those conducting gender analysis and/or using other tools as part of a given policy development process-appears to remain scarce overall, thereby opening an important opportunity to contribute to this area of feminist investigation.

PURPOSE OF STUDY, THEORETICAL FRAMEWORK, AND METHODOLOGY

In this paper, I seek to contribute to the feminist scholarship that examines challenges to GM in policy development from a critical, first-person perspective. Specifically, I will analyze challenges that emerged during the GM process I led as part of the 2020 Comprehensive Youth Sector Analysis (CYSA) in the Republic of Moldova (RoM)[1] using a feminist reflective practice approach.

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[1] *As the National Strategy for Youth Sector Development (NSYSD)'s operational period neared its completion and with eye towards better understanding gaps identified in the 2018 OECD Youth Well-being Policy Review, the Ministry of Education, Culture, and Research (MECR) requested UNICEF's support to conduct a CYSA in 2019. As part of its respective country program strategy and global mandate and in support of the National Strategy for Gender Equality in Moldova, the support of UNICEF aimed to advance gender equality in the youth development sector policy, strategy,*

Accordingly, I will conduct a case study of the CYSA in the RoM using an adapted theoretical framework that combines feminist theory and two related methodological approaches: reflective and reflexive practice. A feminist lens is one that allows a researcher to make inquiries based on where s/he stands in her/his life that has been socially constructed, notably allowing her/him to better understand lives of those lived under oppression and/or disadvantage, notably women and girls (Connolly 2018: 33). By nature, a feminist perspective is part of critical theory which is an approach to social inquiry that both "interprets the acts and the symbols of society in order to understand the ways in which various social groups are oppressed" and "examines social conditions to undercover hidden structures" while also making a "conscious attempt to fuse theory and practice…to bring about change in the conditions that affect our lives" (Seiler N.d.).

On the one hand, reflective practice is "thinking about and critically analyzing one's actions with the goal of improving one's professional practice" (Imel 1992: 2). On the other hand, reflexive practice, or reflexivity, goes further: it involves critical self-analysis that questions one's own values, thought processes, behaviors, assumptions and analyzes how this impacts what happens in a person's professional practice, relationships, and/or associated organizations (Bolton and Delderfield 2018: 14).

By approaching reflective and reflexive practice from a feminist perspective, Connolly (2018: 31,33) explains that this type of critical self-analysis – or what she calls feminist reflective practice – of one's professional practice, "focuses on our being in the world, how we, as agentic practitioners in a stratified world, see that world...reflexive practice has to encompass a consciousness-raising element, rather than simply improve practice…it questions how this [stratified world of oppression] influences [our] practice and asks what [our] commitment to emancipation is? And how do [we] turn this into knowledge?" (Connolly 2018: 31,33).

Using this theoretical framework, I first conducted a reflective practice analysis of the gender analysis I completed as part of the CYSA by asking myself what challenges I experienced or observed during each stage or component of the GM process (e.g., CYSA and GM Terms of Reference; the gender analysis design, data collection, gender integration into larger CYSA, presentation of final results, etc.). I then conducted a reflexive practice analysis using CARE International's Gender Equality Framework (GEF) as tool to interpret the challenges. The GEF framework posits that equality can only be realized if we transform discriminatory structures, change power relations, and build female agency. The inverse then tells us that gender inequality thrives in a context where structures include discriminatory social norms, institutions, policies, and practices (whether intentional or not), gendered relationships are characterized by power imbalances, and women and girls do not have fully realized agency in regards to their confidence, self-esteem, aspirations, abilities, education, etc. (CARE International 2018:7).

RESULTS AND DISCUSSION

The feminist reflective practice analysis I undertook to examine the GM mainstreaming process I led as part of the CYSA in the RoM was not a straightforward endeavor. My final theoretical approach, in terms of how to interpret the findings of my reflective analysis, only emerged during the actual analytical exercise itself. The initial analysis I undertook of the CYSA GM process began as a mechanical process using a matrix I created based on a project management approach to learning -lessons learned. For each GM process component (e.g., CYSA terms of reference, GM terms of reference, data collection, etc.), I sought to brainstorm key challenges and how they were overcome in the process as way to produce new practical "how-to" insights for gender practitioners, including myself. However, as the matrix began to fill up with the challenges across the various components of the GM process itself, I noticed key patterns emerging that interestingly, though not surprisingly, were reminiscent of key findings and conclusions of the actual gender analysis of the youth sector I conducted (e.g., limited prioritization of gender in the GM process, harmful gender norms

negatively impacting the GM process, and limited capacity and political will to realize the GM process).[1] I realized I needed the critical theoretical lens to accurately interpret the socially constructed patterns of power imbalance and inequality that were emerging within the GM process itself. Accordingly, the feminist reflective practice approach emerged as my theoretical framework.

Through this critical self-inquiry-based analysis, I identified, analyzed, and interpreted three main challenges of the CYSA GM process.

Reflection

(*1*) *GM as separate within the CYSA process:* A comparative review of the original CYSA Terms of Reference (TOR) published by UNICEF with the TOR for the GM consultancy published by UN Women clearly reveal a strong priority on ensuring gender was fully mainstreamed into the CYSA process. Despite the priority, gender was still being approached as separate from the larger CYSA. For example, the CYSA TOR did not require applying organizations to propose and ensure gender expertise on their team but rather mentioned that a consultant would be engaged on a separate contract but expected to collaborate closely with the organization commissioned to complete the larger CYSA. While many advantages of this approach exist such as autonomy for the gender consultant to conduct an objective gender analysis and integration into the larger CYSA, it also establishes a precedent for gender to not actually be mainstreamed but remain a stand-alone exercise outside of the larger CYSA.

Indeed, the CYSA TOR envisioned the gender analysis as a separate chapter in the proposed outline of the CYSA report. This was an aspect on which I resisted during the GM process since having gender as separate contradicts the tenet on which GM stands: GM seeks to move gender into the "mainstream" of all policy development. I was largely successful in my lobbying efforts to fully integrate gender into the larger CYSA process, including the CYSA report and related presentations of findings. Although much of my gender-related contributions to each chapter of the CYSA report were included, much of it was cut under the premise of both saving limited space and avoiding distraction from the larger objective of the CYSA. In the end, I drafted a comprehensive annex that outlined all key findings, conclusions, and recommendations that were included in the main body of the CYSA as well as additional gender-related outcomes of the gender analysis process. Admittedly, the annex provided an opportunity to expand on the gender analysis results while also resolving space limitations. Nevertheless, despite reiterating the message that gender was not separate but an integral part of the CYSA to drive home this important message in both the annex and during my separate presentation of results at the CYSA National Validation Workshop in February 2020, the gender annex inclusion sent a *strong message that gender is separate.*

(*2*) *Time constraints on the GM process:* Insufficient time to systematically complete the GM was a challenge that crossed all stages of the process. The original calendar envisioned I make three mission trips with the first dedicated to integrating with the larger CYSA team and finalizing integration of gender into the inception report, CYSA methodology, and qualitative research tools. This mission trip would have also included an initial validation exercise with the Ministry of Education, Culture, and Research (MECR) to approve the inception report, methodology, and tools. By the time I was on-boarded as the gender consultant, this stage of the CYSA was already completed, thereby depriving the GM process a crucial legitimizing step to ensure gender was a fully integrated component of the larger CYSA process. The organization that was commissioned to conduct the CYSA had also made significant progress in completing the desk review portion of the exercise and was going to begin interviews within a couple of days of our initial call. Although I rose to the challenge and within three days had done a comprehensive and systematic review of the inception report, methodology, and tools, the original documents had already been approved

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[1] *The four key conclusions of the youth sector gender analysis I completed as part of the GM process were (1) Gender equality and social inclusion are not priorities in youth-related policies and programs; (2) Persistent intersectionality – also known as compounded discrimination and vulnerability – impacts several groups of especially vulnerable female and male youth and adolescents; (3) Harmful gender norms—that include what it means to be masculine or feminine and how sexuality and reproductive issues are addressed in society – are at the root of most pressing issues faced by male and female youth; (4) Youth sector governmental authorities [i.e., relevant Ministries and local government entities] lack financial and technical capacity and the political will to effectively mainstream gender into youth policy (Kellum 2020: 90-96).*

and *the stage was set for gender to be sidelined.*

Similar time constraints plagued the entire process. For example, gender-related primary data collection was not specifically anticipated as part of the gender analysis. The only opportunity to conduct primary research was during the three consultation workshops that were used to present preliminary findings and receive feedback of the first draft report in December 2019. Similarly, I only received the first draft report as I boarded the plane to participate in the workshops, meaning the consultation workshops were based on a draft report without a thorough gender review. Again, I worked together with the larger CYSA team to ensure the consultation workshop presentation included key gender findings, preliminary conclusions, and recommendations. However, undoubtedly *quality of the gender integration suffered under time limitation.*

(3) Direct resistance to GM: Direct resistance to the GM process is another challenge that manifested itself in a number of ways throughout the larger CYSA process. One example included expressed discomfort among some stakeholders about including analysis of young LGBTI people or examining intersectionality – compounded discrimination – and how this impacted specific groups of vulnerable and/or marginalized male and female youth and their interaction with the youth sector. However, I overcame these obstacles and was successful in including these aspects in the CYSA.

Another example was gender discriminatory jokes and attitudes expressed by male FGD participants during the consultation workshop sessions I facilitated in December 2020. These included statements like "there is too much focus on supporting young women" and "men are born leaders but women would have to be given training to be a leader." I immediately challenged these sexist beliefs by calling out the faulty premises on which their beliefs and attitudes were based.

A third example of resistance was particularly notable as *a direct assault on GM as a means of achieving gender equality and necessary component of policy development.* The incident took place at the CYSA National Validation Workshop in February 2020. After I made the final presentation of the workshop focused on the gender-related findings, conclusions, and recommendations, the workshop facilitator initiated the question and answer session. The first person to raise his hand was a male representative of an international organization. What proceeded to happen, I argue, is that he employed a number of logical fallacies often wielded by people to manipulate others and information and which is considered a breach of ethics in public speaking (Barton and Tucker 2020). In this case, he did so to undermine not only me as a gender specialist but also GM as a legitimate process in the Moldovan youth sector policy development and gender inequality as a current problem in the RoM.

He began speaking in Romanian but then insisted on speaking English, even though I was the only person who was a native English speaker in the room. I had a translator, so it was not a necessary step to ensure I understood. He then publicly congratulated me on my presentation of the CYSA gender mainstreaming results – public praise that not unimportantly, as we will see later in my reflexive analysis, was preceded by him leaning over my translator to tell me privately as the workshop facilitator opened up the Q&A to say "you need to be taken out for a beer for that presentation." The tone of our interaction quickly changed, however, as he launched into his intentional attack.

He first began by employing the *ad hominem*[1] logical fallacy by seeking to publicly humiliate me as the gender specialist by asking if I knew Valentina Vladimirovna Tereshkova.[2] When I responded that I did not, he shook his head, making an exaggerated show of scolding me for not knowing that she was the first female to travel to space and also from the Soviet Union during the time when the RoM was part of the U.S.S.R. Using this fallacy, he sought to discredit my view and opinions set forth as a gender and women's rights specialist by showing that I have some personal flaw, which in this case, was "ignorance" of notable women in the

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[1] *Ad hominem is a logical fallacy described as when "arguer attacks his or her opponent instead of the opponent's argument" (The Writing Center at UNC Chapel Hill n.d.).*
[2] *Valentina Vladimirovna Tereshkova was the first and youngest women to ever travel to space in 1963. Although she is not Moldovan but Russian, Moldova was part of the U.S.S.R during this time.*

Moldovan context. He simultaneously used *tokenism*[1] by erroneously equating her individual achievement with the existence of gender equality and empowerment for all Moldovan women.

He employed the *false equivalence*[2] fallacy by erroneously equating the CYSA GM process, specifically key findings in the CYSA that point to a gender inequal socio-cultural context in which the youth sector is situated, as a "foreign" ideology being pushed on Moldovans similar to how the foreign communist ideology was pushed during the Soviet era. However, unlike communism, which is a socio-political ideology, gender equality and the strategies to achieve it are enshrined within the framework of fundamental human rights inherent to all humans.

He used the *tu quoque*[3] fallacy in the form of *whataboutism*[4] to divert attention from the context at hand– the RoM. Specifically, he stated, "What about the United States? They have gender-based violence? Why should we be focusing on that in Moldova when it exists everywhere?" In this case, he erroneously appealed to an imaginary hypocrisy on my part, since I am a professional specializing in gender who also happens to be from the United States where GBV exists as well. He also was seeking to divert attention from the topic at hand which was gender inequality in Moldova not the situation of GBV in the United States. In the course of his intervention, he also described naming particularly vulnerable groups of youth as part of the GM process as divisive as opposed to inclusive, revealing a *bias* against basic tenets of GM.

By the time he had finished his intervention, somewhere between 30 and 45 minutes – almost the entirety of the time allocated to the question and answer session – had passed. Although some of his comments were not aimed directly at my contributions to the CYSA, most of his comments made their way back to disputing the GM findings and conclusions in the CYSA. He had essentially *utilized the question and answer session of the CYSA National Validation Workshop as a platform to undermine the GM process.* Unfortunately, my reaction to this egregious resistance to GM was not what I would have expected of a gender specialist: I did not respond at all. To say I was shocked, humiliated, and fully unprepared for such an assault on me as a professional and on my field of expertise overall would be an understatement. A few months needed to pass for me to fully understand my non-reaction; this will be analyzed further below using a *reflexive practice approach.*

Reflexivity

On the surface, the three challenges analyzed above may appear to have emerged because of one-off institutional logistical issues or isolated incidences of gender naysayers using faulty logic. However, examining them from a critical reflexive lens reveals their emergence during the GM process to be part of the much larger problem of gender inequality that the GM seeks to redress. To do this, I will now analyze the identified challenges using CARE International's Gender Equality Framework.

The first challenge – situating gender as separate versus an integral part of the larger CYSA – and the second challenge – time constraints – can both be understood in the context of discriminatory structures (policies, practices, norms, etc.) according to the CARE International framework. To be clear, I am <u>not</u> suggesting the contracting international organizations and/or the organization commissioned to conduct the CYSA of intentionally sidelining gender from the larger CYSA or shorting the GM process activities of sufficient time. Rather, I argue that institutional policies and practices within their and other influential and relevant organizations locked them into these patterns.

To understand how this works, understanding discrimination is essential. According to Pincus (2000: 1), discrimination operates at three levels: individual, institutional, and structural. While both individual and institutional discrimination is an intentional discrimination against someone or a group of individuals based on gender, race, ethnicity, or any other factor, <u>structural</u> discrimination "refers to the policies of dominant race/ethnic/gender institutions and the behavior of the individuals who implement these policies and

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[1] Tokenism is a logical fallacy that is "interpreting a token gesture as an adequate substitute for the real thing." (Bennet, B. 2020)

[2] False equivalence is a logical fallacy that "simultaneously condemns and excuses both sides in a dispute by claiming that both sides are (equally) guilty of inappropriate behavior or bad reasoning." (Thompson, B. n.d.)

[3] The tu quoque logical fallacy is underpinned by claiming some type of hypocrisy on the part of one's adversary to discredit claims made by the adversary. (Stanford University 2020)

[4] Whataboutisim is "bringing up of one issue in order to distract from the discussion of another." (Rational Wiki 2020)

control these institutions, which are race/ethnic/gender neutral in intent but which have a *differential and/or harmful effect on minority race/ethnic/gender groups."* Applying this definition of structural discrimination to the GM process in the CYSA, certain institutional policies, practices, and/or capacities (or more accurately a lack thereof) *were not in place to "discriminate" or impede the GM process directly but did so in very real ways.*

Regarding the "gender as separate" challenge, a general lack of gender capacity (i.e., knowledge, know-how, and experience to effectively integrate a gender perspective into the CYSA process) among national institutions in Moldova likely led to the decision by UNICEF to present the GM as separate in the initial CYSA TOR. Likewise, the perceived inability of youth sector stakeholders to fully accept and understand gender analysis because of existing gender attitudes and understanding of gender equality (e.g., persistent misunderstanding in Moldova that gender means making women and men the same) likely contributed to the various decisions to present gender as separate in the CYSA process. In other words, structures in the form of gender and social norms are at the root of this impediment to the GM process.

In the case of time constraints, for example, cumbersome procurement and human resources policies of the international contracting agencies in combination with bureaucratic approval processes by relevant governmental stakeholders in the RoM likely delayed my initial onboarding. Similarly, institutional budgeting decisions of the international contracting agencies and, in turn, financial constraints likely contributed to a reduced scope of work for the GM process, leading to insufficient time allocated to conduct primary research in-country. These same policies and practices pressured the organization commissioned to conduct the CYSA, creating a time crunch for them that ultimately was passed on to the GM component given its ultimately "separate" and inherently secondary status within the larger CYSA process. While unintentional, these structural factors negatively impacted the GM process.

Turning to the incident that occurred at the National Validation Workshop, I have had time to conduct a deep and unsettling reflection to understand why I, as an international gender specialist, did not respond to the not only blatant sexism but also fallacious logic employed. To understand the dynamic that took place at the workshop, all three levels of CARE International's GEF are useful. In regards to agency, I am a woman. I am a highly educated forty-year old woman who has worked in the area of gender equality and mainstreaming globally for 10+ years. Despite my education and experience, I felt much of my "agency" become fragile as this man systematically and quite skillfully demeaned me for not knowing a renowned Soviet woman, dismissed my research findings as merely ideological hyperbole, and equated me to a hypocrite for having the audacity to come to Moldova to point out problems of violence against women while being a woman from another country where gender-based violence is also prevalent. On the hand, my agency, notably confidence in my own abilities as a gender specialist, was undermined by this man. On the other hand, I was not technically prepared to coherently counter each of his faulty arguments. At the same time, I gave him a great deal of power in this moment; what would have counted was not necessarily the exact articulation I used but the intention to call out sexism in the moment of its occurrence. At the same time, my agency was my own because, ultimately, I made a conscious decision to not respond to him because alongside these feelings of wavering confidence and unpreparedness was a firm belief that I had a responsibility to not take up more time as another foreign "expert" in a space that was clearly intended for Moldovans to share their experience and feedback about a policy that would affect their lives. The latter I believe was an attempt on my part to be reflexive in my practice by keeping in check the privilege and power that can come in the form of being an international consultant.

At the same time, another issue of power imbalance was also at play in this scenario. The relations level of CARE's GEF is useful to understand this better. The other person in this scenario was a foreign male, working for an international organization in an influential advisory position to the Moldovan government. Each of these factors added layers to the power imbalance between him and me. However, the mere fact that he was a foreign man working in an influential position for an important international organization does not in itself cause the power balance. It was his decision to use these characteristics to tip the balance of power in his favor, and, in turn, "put me in my place" and ultimately show dominance. This happened through the acts, attitudes, and behaviors he employed during his 30-45 minute intervention: minimization of all my professional efforts and work that culminated in the final presentation by inappropriately telling me that I "deserved to be taken for a beer"; using language as power by insisting on speaking in English to ensure I clearly understood his message and that nothing was lost in translation; using faulty argumentative

techniques to manipulate others in the audience, publicly humiliate me, and undermine the overall GM process I undertook in the CYSA.

If we look at this scenario from the structural perspective, two interesting questions emerge: (1) How does a man that clearly does not support gender mainstreaming end up in such as influential position in an organization that professes gender equality as a guiding principle? and (2) Why were my female colleagues from other international organizations mostly silent in response as I was? Exploring the first question from the structural lens points to the very real possibility that institutional policies, practices, and culture either directly or indirectly support these types of attitudes and allow them to co-exist within the organization that on paper is a beacon of equality. Regarding the second question, I had the opportunity to reflect together with a couple of my female colleagues after the workshop. They were as indignant as I was about what happened. They explained that the reason they did not respond themselves and why the one response by another female colleague from a different organization was relatively reserved was because they feared some type of professional retaliation. They explained that the person was influential in upper levels of government, and accordingly, they could not be certain of whom he knows and/or what he would say about them had they publicly confronted him at the workshop. The latter points to a larger norm within both national and international organizations in Moldova of silencing female and feminist voices. Returning again to power dynamics, it also points to an additional area for my own reflexive practice on issues related to power and privilege to understand when I should remain silent as an international consultant and when I should use that same position to give voice to female colleagues in their home countries where they may not feel they have voice due to structural social constraints.

CONCLUSIONS

The challenges to the GM process that emerged during the CYSA are not isolated obstacles that can be resolved using solely functional or technical solutions. Instead, my feminist reflective practice analysis reveals how the specific challenges of the GM process encountered are situated within a larger social structure of gender inequality and patriarchy characterized by discriminatory structures, gendered power relations, and women's agency that, in many ways, continues to be influenced by men. This reveals that GM processes embody the same gender inequality and patriarchy that we encounter in our larger social structures, which, in turn, is one of the greatest threats to GM as an effective strategy to achieve gender equality. Because GM is inseparable from the larger social structure, we need new strategies to ensure structural, relational, and agentic factors do not continue undermining the effectiveness of GM.

This warrants increased research of the GM process from a critical, feminist lens using reflexive practice and other relevant methodological approaches to better understand how these blockages manifest themselves and how best to overcome them. It will require new approaches to GM that inherently involve transforming resistance to GM in all forms whether structural or direct, intentional or unintentional into a full embracing of GM. This will, by necessity, involve all institutions that play a role in policy development globally (e.g., international and regional organizations, national governments, donors, and others) to comprehensively examine all structural aspects that make up their institutions (policies, practices, capacities, culture, etc.) and determine how they support or undermine GM. It will require achieving more balanced power dynamics among the men and women who are supporting policy development nationally and internationally. It will also involve opening even more communities of practice for gender practitioners to sharpen our skills to effectively confront resistance to GM in the moment it occurs. We, as gender practitioners, must continue to advocate for increased preliminary and ongoing activities that go beyond gender training to include long-term critical reflection work, embedded gender equality specialists and facilitators, and on-going coaching and advising in governmental institutions to transform relevant stakeholders in policy development processes into champions of the GM process. The time is now as we take stock of the last 25 years since GM was introduced into the global discourse and practice at the Fourth UN Women's Conference in Beijing in 1995. Without intentional inclusion of approaches that seek to prepare the policy development context for GM, we risk the continued mediocre results of GM, namely unrealized universal gender equality and women's empowerment.

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DEMOGRAPHIC TRANSITION
AT THE REGIONAL LEVEL IN CZECH LANDS

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ABSTRACT

This study presents the results of the development of demographic transition at the regional level in the Czech Lands. The analysis uses data from censuses and vital statistics. The period for analysis is 1869-1935, and the data was recalculated for the 2011 administrative division. In the study, we used the classical approach of analysis of the demographic processes. This article aims, first, to show the evolution of mortality and fertility levels at the regional level during the demographic transition, and second, to show that the demographic transition in the Czech lands follows the patterns of other European countries, but with some particularities at the regional level.

Keywords: *demographic transition, mortality, fertility, migration, Czechia.*

În acest articol sunt prezentate rezultatele cercetării privind tranziţia demografică la nivel regional în Cehia. Studiul se bazează pe datele de la recensămintele populaţiei şi statistica vitală. Perioada de analiză este 1869-1935, iar datele sunt recalculate pentru organizarea adminsitrativ-teritorială din 2011. În studiul au fost utilizate abordări clasice de analiză a proceselor demografice. Acest articol descrie evoluţia mortalităţii şi fertilităţii la nivel regional pe parcursul tranziţiei demografice şi demonstrează că tranziţia demografică în Cehia urmează un traseu similar cu alte ţări europene, dar are anumite particularităţi la nivel regional.

Cuvinte-cheie: *tranziţie demografică, mortalitate, fertilitate, migraţie, Cehia.*

В данном исследовании представлены результаты развития демографического перехода на региональном уровне в чешских землях. В анализе используются данные переписей и статистики естественного движения населения. Период анализа составляет 1869-1935. Данные были пересчитаны для административного-территориальное деления 2011 года. В исследовании использовался классический подход анализа демографических процессов. В этой статье описана эволюция уровней смертности и рождаемости на региональном уровне во время демографического перехода, и показывает, что демографический переход в Чехии повторяет модели других европейских стран, но имеет некоторые особенности на региональном уровне.

Ключевые слова: *демографический переход, смертность, рождаемость, миграция, Чехия.*

INTRODUCTION

The demographic transition became "the central preoccupation of modern demography" (Demeny 1968), and is the shift from the slow growth of the population due to relatively high fertility and mortality to slow growth due to low fertility and mortality (Coale 1984:531). Moreover, demographic transition theory applied to the developing countries shows impressive regularities (Kirk 1996). In each example, mortality preceded fertility decline, resulting in accelerated population growth underestimated by some researchers.

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The duration of the demographic transition is different for each country or region, but the later it emerges, the faster the pace and dynamics of the process (Pavlík 1977). In Northern Europe, the demographic transition lasted 75-100 years, in Eastern Europe – 20-25 years, and lasts even less for less developed countries that are still in the process (Preston 1975).

LITERATURE REVIEW AND GAP POSITIONING

According to some studies (Pavlík, Rychtaříková, and Šubrtová 1986:568), the demographic transition in the Czech Lands started approximately in 1830. At the beginning of the 19th century, the crude death rates were about 25 per thousand people, and life expectancy was about 33 years (Pavlík 1964). In the 1900s, there was a dramatic decrease in mortality, life expectancy reaching approximately 40 years, and continuously increased until 56 years at the end of demographic transition (Arltová, Langhamrová and Langhamrová 2013). In the first phase of demographic transition, the crude birth rate was 45 per thousand people. Some research shows that the earliest fertility decline in the Czech Lands was registered in Bohemia, specifically in Prague and Liberec region (Pavlík, Kučera and Hampl 1994:34). And from these regions, it spread throughout the country (Demeny 1968). Because of data availability, this analysis began in 1869, with the first modern census conducted in Austria-Hungary, and it ended in 1937, with the last available comparable data before the WWII, but also this is the time when the demographic transition has finished in the Czech lands.

The interest in regional demographic transition appeared later (e.g., Leasure 1963; Coale 1986; Fialová, Pavlík and Vereš 1990; Fialová 1991; Diebolt and Perrin 2017), and it wasn't researched in-depth and its correlations with ageing, including for Czechia. The main aim of this study is to contribute to understanding the determinants and evolution of demographic transition, specifically mortality and fertility decline, at the regional level in the Czech lands. The research on the demographic transition at the regional level will explain the current demographic situation from its roots because the comprehensive knowledge of the past is the prerequisite for an adequate explanation of present phenomena. Moreover, the analysis of the particularities of the development of demographic transition at the regional level can explain and predict the time and pace of ageing at the regional level.

The following hypotheses are tested in this article:

1. Demographic transition in the Czech lands followed, in general, the pattern of other European countries.

2. Demographic transition in the Czech lands started in the Northern industrialized districts and Prague, the capital, and then it diffused to the peripheries.

3. There is a close link in the fertility and mortality decline of the population located in the same geographical region.

THE THEORETICAL FRAMEWORK OF THE STUDY

The research is based first of all on the demographic transition theory. The theory of demographic transition attempts to explain the changes in mortality, fertility, and age structure. One of the most common definitions of demographic transition is the transition from a regime of (moderately) high birth and death rates (at approximate balance) to very low levels of fertility and mortality (also at approximate balance) (Knodel 1974; Coale 1986). Other standard definitions are: the demographic transition is the process of change from the primitive type of reproduction to the modern type of reproduction (Visnevski 1976; Pavlik 1980), the shift from the nonparity-related restriction of fertility to parity-related restriction of fertility (Coale 1986) or the shift from unplanned parenthood to family planning.

For a deeper understanding of the mortality and fertility decline, additional theories were applied. The epidemiological transition theory (Omran 1998:102) explains the mortality decline by using four stages (specific for western transitions). In the first stage – "pestilence and famine", these being the leading causes of death, and it was specific for the pre-transition societies, and most deaths were occurring before the age of 40 (Harper 2016). The second stage – "receding pandemics", mortality caused by infectious diseases were decreasing, especially child mortality, life expectancy reached 50 (Harper 2016). In the third stage – "the age of degenerative, stress and man-made diseases" people survive to their 70s and over (Harper 2016). The fourth stage – "age of

declining cardiovascular mortality, ageing etc.", the degenerative diseases are delayed, and more time is spent with chronic disease or disability. Moreover, life expectancy at older ages is still increasing (Harper 2016).

For explaining the determinants of fertility decline, several theories were applied: the intergenerational wealth flows theory of fertility decline (Caldwell 1976), the economic theory of fertility decline (Schultz 1974; Becker 1981), the diffusion of innovations theory (Cleland and Wilson 1987), the cultural and ideational theory (Lesthaeghe 1983), theory of multi-phasic demographic response (Davis 1963) and second demographic transition.

Theory of multi-phasic demographic response (Davis 1963) explains that the out-migration has the role of relieving the pressure of population growth. As a result, the fertility decline in rural areas was delayed. The population from rural areas was the primary source of urban growth during demographic transition.

DATA AND METHODS

Each significant change of political and social situation brought reforms to the territorial-administrative division. Moreover, the changes in the administrative division had an impact on the development of the statistics; this is why it is important to follow its development, and also the reforms in administrative divisions are the main obstacle in having comparable time-series for a more extended period.

In this study, historical data were recalculated to the current district level (2011 administrative division). The recalculation was necessary due to the four major administrative reforms were implemented on the territory of the Czech Republic between 1850 and nowadays. The data were recalculated by defining ratio of each political district /judicial district/district area (1869-2001) in actual districts (LAU1) areas from 2011 (based on ArcČR 3.3 shapefiles). The ratios were calculated by using spatial overlay. Calculated proportions of political districts were used to recalculate the rest of the data. CZSO (Růžková and Škrabal 2006) has recalculated only total number of population on the actual districts for the period 1869-2011. These data are available for download on CZSO public database website and they were downloaded at level of municipality parts ("části obce") for cross-checking (finding errors in data and calculations), for more precise political districts administrative borders reconstruction and recreation of more precise historical maps.

The main data sources for the research are the following:
1. Censuses (1869, 1880, 1890, 1900, 1910, 1921, 1930).
2. Vital statistics (1868, 1872-1937).

The data collected for the research are predominantly at the district level (1831-1847 – regions, 1868-1913 – political districts, 1919-1937 – judicial districts).

Crude death rates, crude birth rates, and net migration rates are mapped for recalculated data at the district level (LAU1).

QGIS3 open-source Geographical information system software was used for 1869-1910 maps reconstruction, editing, analysis, and all spatial overlay operations.

MAIN RESULTS

Evolution of mortality

The geographical distribution helps us to create a more complete and accurate explanation of the demographic changes. In this section, we present the evolution of crude death rates for the period 1869-1937 at the regional level.

During the pre-transition period, the death and birth rates were high (or moderately high). In the first phase of demographic transition, death rates started to fall continuously until the end of transition when death rates stabilized around 10-15 per thousand people.

For 1869, crude death rates were ranging between 22 and over 30 per thousand people (figure 1). Most of the districts were in the range of 25 to 30 per thousand people, which is considered a pre-decline level of mortality (Reher 2004). Some of the districts had a high crude death rate of over 30 per thousand people, and several districts entered the mortality decline phase with a crude death rate under 25 per thousand people (Reher 2004).
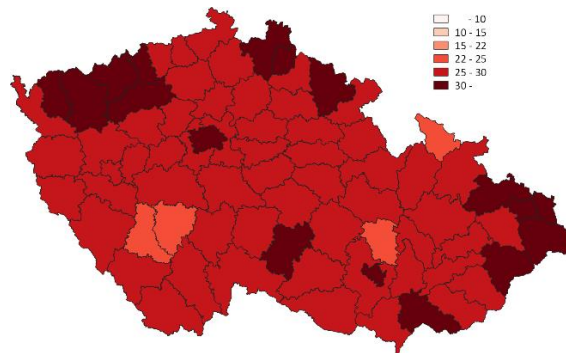
Figure 1. Geographical distribution of crude death rates, by districts, Czech lands, 1869
Note: only the civil population in the total population was included.
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

Figure 2, compared to figure 1, shows that mortality was still fluctuating. No significant changes occurred between 1869 and 1881. The high number of deaths is predominant in several districts from Northern and Central Bohemia and South-Western Moravia. Mortality remained high in Prague at 36 per thousand people. The change between in mortality between 1869 and 1880 showed a variance of 4% on average. The highest increase accounted for 32% for Kroměříž and Zlín, and 27% for Uherské Hradiště. The highest decrease accounted for 13% for České Budějovice, and 10% for Brno-město and Sokolov.
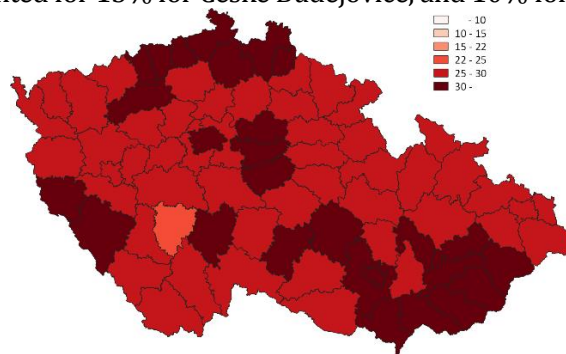
Figure 2. Geographical distribution of crude death rates, by districts, Czech lands, 1881
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

From 1881 to 1890, several districts entered the demographic transition, according to the definition of Reher (2004), where the level of crude death rates dropped under 25 per thousand people (figure 3). The districts with the lowest mortality were mostly located in Western Bohemia and a few in Central Bohemia. The mortality was still high for Prague and accounted between 30 and 35 per thousand people, but also in other cities, e.g., Liberec, Brno, Kroměříž, Jihlava. During this period, death rates were mostly decreasing, on average, by -1.5%. The highest decrease was observed in Prague-východ by -29%, in Prague by -17% and in Kroměříž by -17%. The highest increase was in Blansko, Svitavy, Sokolov, Bruntál, and Frýdek-Místek, and accounted for about 10%.
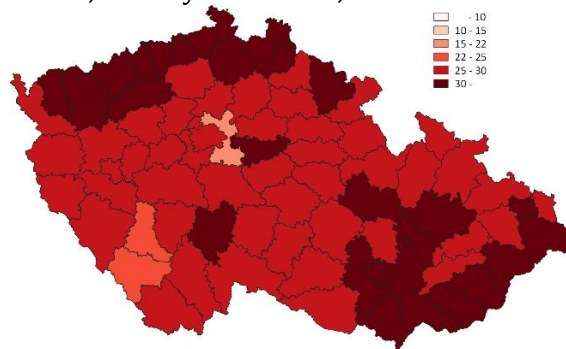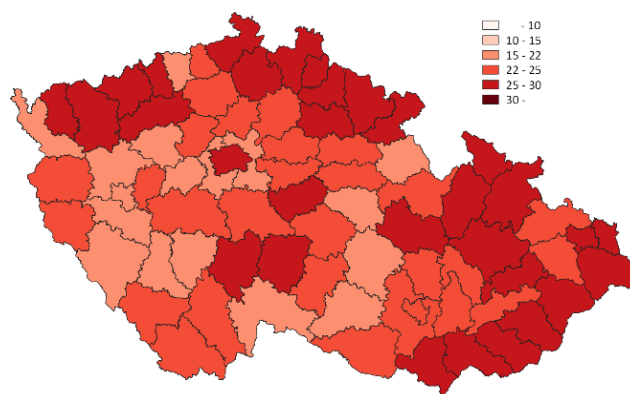

Figure 3. Geographical distribution of crude death rates, by districts, Czech lands, 1890
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

Mortality was declining gradually until 1890. Crude death rates changed radically from 1890 to 1900, as seen from the comparison of figure 3 and figure 4. In 1900 only five political districts had a crude death rate higher than 30 per thousand people. In the recalculated map, all districts had a crude death rate of under 30 per thousand people. Mortality was quite heterogeneous during this period, ranging between 15 and over 30 per thousand people. The change in mortality accounted for -16% on average within a range from -38% to -2%. The crude death rate is decreasing in all the districts. The highest decrease was in Teplice, Prague-západ, and Plzeň-město. The lowest decrease was in Jeseník, Semily and Prague-východ.

Figure 4. Geographical distribution of crude death rates, by districts, Czech lands, 1900
Sources: Author's calculations based on data from Austrian Statistics, CZSO, and Historický GIS.

In sharp contrast with the 1900 situation, figure 5 shows that in 1910, mortality decreased substantially in almost all districts. The homogeneity among districts increased considerably. Mortality levels were high in Prague and Brno, in the range of 25 and 30 per thousand people, although it decreased from 1900 levels (figure 5). Some districts located in Eastern Moravia and Silesia had higher mortality also – between 22 and 25 per thousand people. For this period, the most significant change in mortality across the districts was observed. The difference accounted on average for -19%. The highest decrease accounted for 35% in Vsetín and Pelhřimov, and the lowest drop accounted for 1% in Rychnov nad Kněžnou.
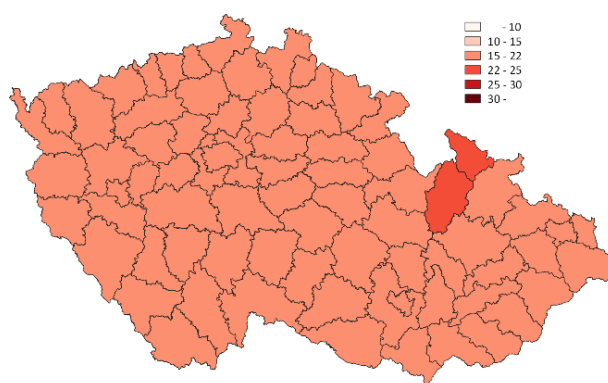

Figure. 5 Geographical distribution of crude death rates, by districts, Czech lands, 1910
Sources: Author's calculations based on data from Austrian Statistics, CZSO, and Historický GIS.

Crude death rate continued to decrease after 1910. In 1921, in several districts in Central Bohemia and several districts from periphery areas, crude death rates reached 10-15 per thousand people (figure 6). The mortality in Prague and other cities finally reached mortality levels similar to the national average – 15 to 22 per thousand people. The change between 1910 and 1921 accounted for about -16%. Mortality continued to decline in this period. The highest decrease accounted for about 30% in Prague and Ostrava-město.
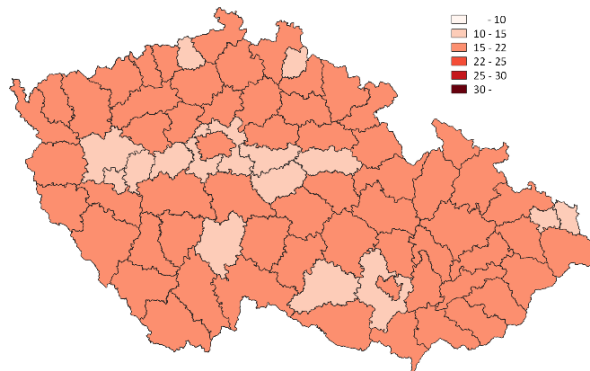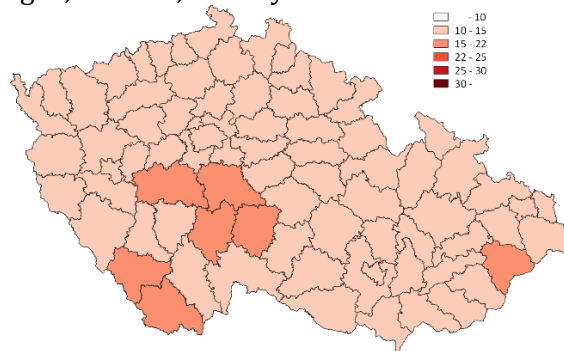
Figure 6. Geographical distribution of crude death rates, by districts, Czech lands, 1921
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

A substantial reduction in crude death rates occurred between 1921 and 1930. In most districts, the crude death rate ranged between 10 and 15 per thousand people (figure 7). The change in mortality accounted for -14% on average. The highest decrease accounted for about 37% in Brno-město and about 28% in Prague, Sokolov, and Frýdek-Místek.

Figure 7. Geographical distribution of crude death rates, by districts, Czech lands, 1930
Sources: Author's calculations based on data from Austrian Statistics, CZSO, and Historický GIS.

Mortality continues to decline, and at the end of demographic transition, the average crude death rate was between 10 and 15 per thousand people and quite homogeneous across districts. Approximately ten judicial districts reached a crude death rate of 10 or less per thousand people. The mortality levels were stabilizing. The lowest value of the crude death rate was for Ostrava-město with 9.7 per thousand people. The highest crude death rate was in Prachatice and Strakonice and accounted for 16 per thousand people. The districts with the highest crude death rate ranging between 15 and 22 were: Příbram, Benešov, Strakonice, Prachatice, Tábor and Jindřichův Hradec. The change in mortality between 1930 and 1937 accounted for about -5%. The highest decrease accounted for about 16% in Prague-západ, Chomutov, Hodonín, and Zlín. The mortality continued to fall, but not as sharp as in the previous periods.
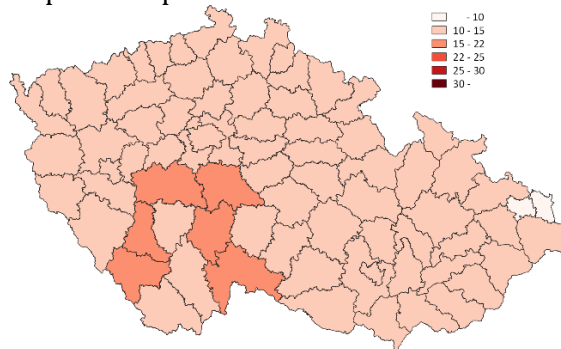

Figure 8. Geographical distribution of crude death rates, by districts, Czech lands, 1937
Sources: Author's calculations based on data from Austrian Statistics, CZSO, and Historický GIS.

Mortality transition varied across the districts. The mortality decline seems to have started earlier than in 1869 in some districts. The highest crude death rate was observed in several districts in Northern Bohemia, Central Bohemia and South-Western Moravia. The mortality decline started to "spread" to more districts in Western and Central Bohemia between 1881 and 1890. Between 1890 and 1900, mortality declined in all districts, but it remained heterogeneous, ranging from 15 to over 30 per thousand people. Between 1900 and 1910, crude death rates decreased significantly, and for the first time, a homogeneity in mortality is observed. Crude death rates range between 15 and 22 per thousand people, except few districts in Eastern Moravia and Silesia (22-25 per thousand people) and Prague and Brno (25 and 30 per thousand people). After 1930 the crude death rate declines at a slower pace compared to the previous period. The decrease continues, and by the end of demographic transition, the districts reach a crude death rate ranging between 10 and 15 per thousand. Only in a few it decreases under 10 per thousand people. During the demographic transition, the mortality in Czech lands decreased by approximately 50% in all districts.

Evolution of fertility

In this section, we present the evolution of the crude birth rate for the period 1869 to 1937. Similarly to mortality analysis, the crude birth rates are shown on maps for eight years: 1881, 1890, 1900, 1910, 1921, 1930, and 1937. In the third stage of demographic transition (according to Rowland 2003), fertility started to fall gradually. The natality varied across the districts in 1869 (figure 9). Most of the crude birth rates show pre-transitional values. The crude birth rate was ranging from 30 to over 40 per thousand people. A crude birth rate of 40 per thousand people is considered a pre-transition level of fertility or natural fertility (Henry 1961), this being considered moderately high fertility (Coale 1986; Diebolt and Perrin 2017). Moreover, a crude birth rate of 35 per thousand people is considered as the start of fertility decline by some researchers (Chesnais 1992).
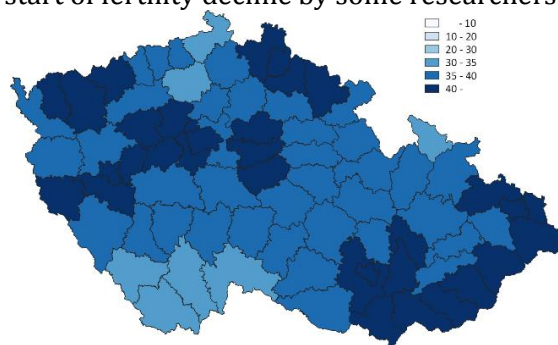

Figure 9. Geographical distribution of the crude birth rates, by districts, Czech lands, 1869
Note: only the civil population in the total population is included.
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

Although the situation in 1881 (figure 10) was similar to the one in 1869, we can see that Northern Bohemia, including the city of Liberec, Southern Bohemia, Silesia and Northern Moravia entered the phase of fertility decline with a crude birth rate under 35 per thousand people (Diebolt and Perrin 2017).
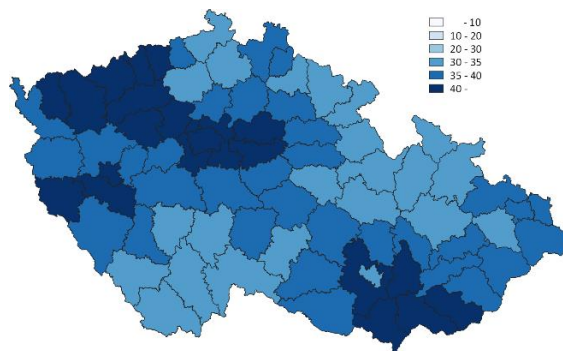

Figure 10. Geographical distribution of crude birth rates, by districts, Czech lands, 1881
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

The change between recalculated districts in 1869 and 1880 accounted for -2% on average. The most considerable change was in Brno-město and accounted for -10%. In general, the crude birth rate decreased from 44 to 34 per thousand people (figure 10).

After 1881, fertility continues to decline. Just a few districts had a crude birth rate higher than 40 per thousand people: Sokolov, Most, Teplice, Ústí nad Labem in the Northern Bohemia and Frýdek-Místek, Ostrava-město, Karviná in Silesia (figure 11). We observe that the crude birth rate dropped under 35 per thousand people in most districts in the Central Bohemia, including Prague, marking the beginning of the fertility decline phase. Districts that are still in the pre-decline phase (35 to 40 per thousand) were mostly located in the West-North part of Bohemia, South-West of Moravia, and some districts in Silesia. There was heterogeneity among districts at this stage. The overall change between 1881 and 1890 accounted for approximately -5%. The crude birth rate declined the most in Prague-východ by 35% and increased the most in Frýdek-Místek and Karviná by almost 14%.
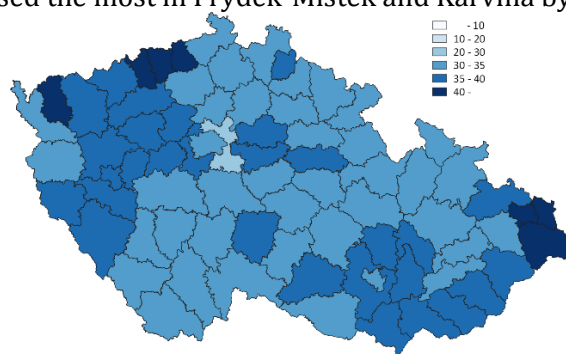

Figure 11. Geographical distribution of crude birth rates, by districts, Czech lands, 1890
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

After 1890 the crude birth rate continued to decline under 35 per thousand people in Western and Central Bohemia. Still, it seemed to stagnate in Southern and Eastern Moravia and some districts in Western Moravia and even increasing in some districts (figure 12). The overall change between 1890 and 1900 accounted for approximately +0.3%. The highest decline in natality was recorded in Prague-západ by 23%, and the highest increase was recorded for Ostrava-město and Prague-východ by 17%.
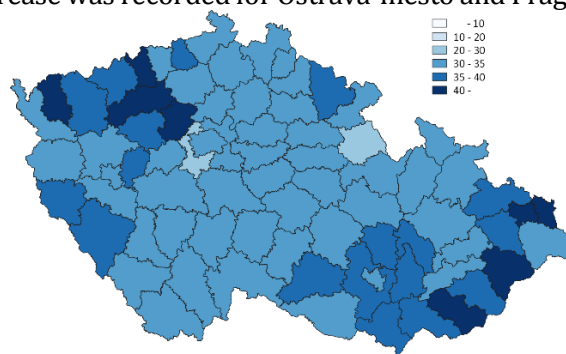

Figure 12. Geographical distribution of the crude birth rates, by districts, Czech lands, 1900
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

A substantial reduction in natality was observed between 1900 and 1910. In 10 years, most districts moved to a modern regime of controlled fertility with a crude birth rate of 30 per thousand people (Chesnais 1992) (figure 13). Despite the general trend, Moravia and Southern Silesia had a high crude birth rate, between 30 and 35 per thousand people, some over 35 per thousand people. Also, several districts in Western (Sokolov, Domažlice, Klatovy), Northern (Chomutov, Most, Teplice), and Central Bohemia (Rakovník, Kladno, Beroun) recorded high crude birth rates between 30-35 or over 35 per thousand people. The average change between 1900 and 1910 accounted for approximately -17%. The decline was universal, except one district – Rychnov nad Kněžnou, where the crude birth rate increased by 3%.
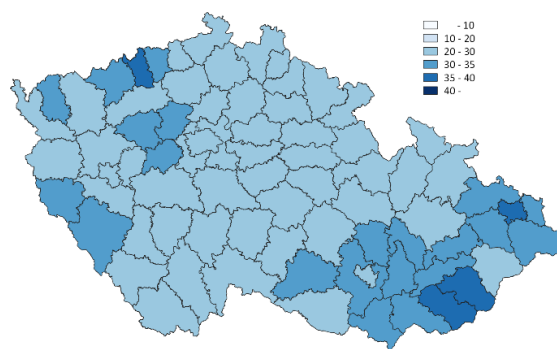
Figure 13. Geographical distribution of the crude birth rates, by districts, Czech lands, 1910
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

After 1910 fertility continues to decline. A convergence of the crude birth rate under 30 per thousand people was observed (figure 14). The modern regime of controlled fertility (crude birth rate 30 per thousand people) was spread almost all over the Czech lands, with some exceptions at the peripheries, especially in Moravia and Silesia. Prague and Liberec had one of the lowest crude birth rates ranging between 10 and 20 per thousand people. The average change between 1910 and 1921 accounted for approximately -11%. The highest decrease of approximately 25% was recorded in Prague, Plzeň-město, Náchod and Pardubice. The highest increase of 20% was recorded in Vsetín.
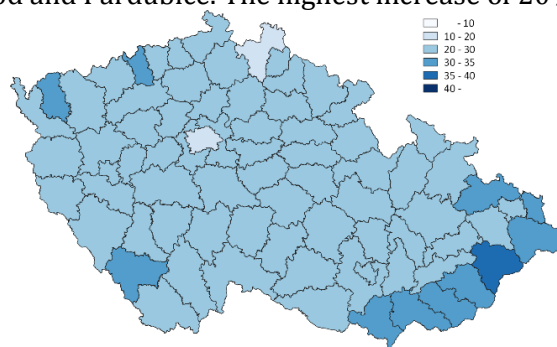

Figure 14. Geographical distribution of the crude birth rates, by districts, Czech lands, 1921
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

There was a sharp drop in fertility between the years 1921 and 1930 – fertility declined in about half of the districts (figure 15). The North-Eastern Bohemia, several districts in South and Central Bohemia, and several in Moravia, including Brno, recorded the lowest values for crude birth rate ranging between 10 and 20 per thousand people. Moreover, a crude birth rate under 20 means that most of the women use parity limitation of fertility (Diebolt and Perrin 2017). The average change between 1921 and 1930 accounted for approximately -22%, one of the highest changes recorded during the demographic transition. The decline was universal. The sharpest drop accounted for 48% in Brno-město, and the smallest drop accounted for 1% in Prague-východ.
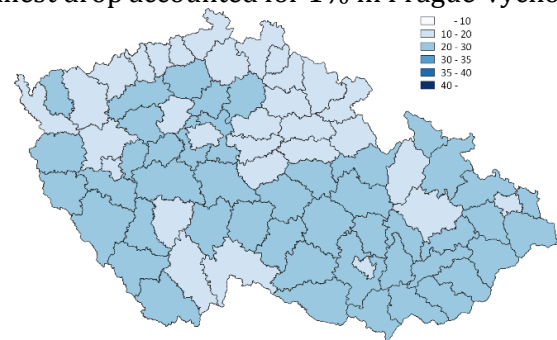

Figure 15. Geographical distribution of the crude birth rates, by districts, Czech lands, 1930
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

After 1930 the decline of fertility continued. Crude birth rate was between 10 and 20 per thousand people in almost all the districts. There was a very high level of homogeneity among the districts (figure 16). The lowest crude birth rate of under 10 per thousand people was reached in two districts: Liberec and Jablonec nad Nisou. Districts with the highest crude birth rate (between 20 and 30 per thousand people) were located at the peripheries: Prachatice, Český Krumlov in Bohemia and Vsetín, Zlín, Uherské Hradiště in Moravia. Surprisingly, the average change between 1930 and 1937 accounts for approximately -26%, which was the highest change recorded during the demographic transition. The sharpest drop was about 43% in Karviná and Prague-západ, and the smallest decline was about 10% in Písek and Brno-město.
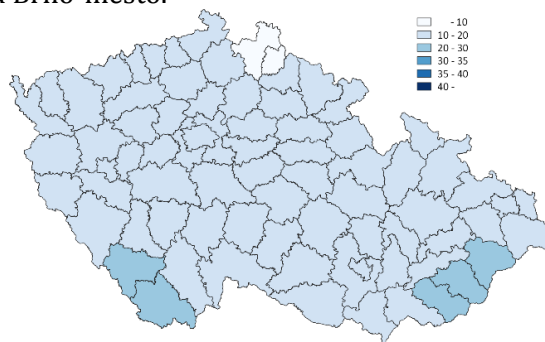

Figure 16. Geographical distribution of the crude birth rates, by districts, Czech lands, 1937
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

In the third phase of demographic transition, fertility started to decline gradually. It is essential to mention that at this stage, births were moderately high (Coale 1986; Diebolt and Perrin 2017). The first phase of decline started probably earlier than 1869, but just in a few districts. The fertility decline began when the crude birth rate dropped under 35 per thousand people (Chesnais 1992). In 1869, the crude birth rate was ranging from 35 to 40 and more per thousand people in most districts. In 1881 the situation did not change, but we can distinguish districts that entered the fertility decline stage, located in North Bohemia, including the city of Liberec, South Bohemia, Silesia, North Moravia. After the 1890s, about half of the districts entered the fertility decline stage. Districts were quite heterogeneous. A substantial reduction of 17% in crude birth rate is reached between 1900 and 1910. In only ten years, most districts moved to a modern regime of controlled fertility with a crude birth rate of 30 per thousand people or less. The last districts entering fertility decline were located in West-Northern Bohemia (partly), South-Eastern Moravia and Silesia (partly). The second phase of fertility decline started after 1921. The change in crude birth rate accounted for -22%, one of the highest recorded levels until this point. Crude birth rate values dropped from 20 to 30 per thousand people to 10 to 20 per thousand people. The sharpest drop in the crude birth rate during the demographic transition occurred between 1930 and 1937, and it accounted for 26%. Almost all districts reached a crude birth rate between 10 and 20 per thousand people, which means that the parity limitation of fertility was spread all over the Czech lands.

Migration

During the demographic transition, the population was not influenced only by natural processes but also by migration, specifically internal migration. Internal mobility was increasing due to the industrialization process. People tended to move from agricultural areas to the industrialized ones. In this section, we are analyzing the population movement in the Czech lands in the period 1869–1910. We use estimations of the migration using the balance method.

In 1869 the average net migration rate was -2 per thousand people. Districts with high positive net migration rates were located in Northern and Central Bohemia and Eastern Moravia. Districts with high negative net migration rates were located in the Western, Southern, and Central Bohemia (around Prague) and Eastern and Southern Moravia. Districts with the highest positive net migration rate (over 10 per thousand people) were Prague, Prague-západ, Prague-východ, Most, Teplice and Ústí nad Labem. Districts with the highest negative net migration rate (over 10 per thousand people) were Rakovník, Beroun, Příbram, and Havlíčkův Brod (figure 17).
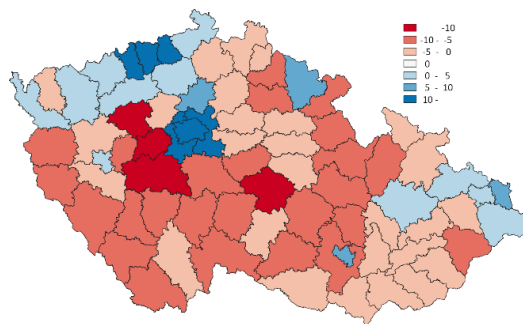
Figure 17. Geographical distribution of net migration rates, by districts, Czech lands, 1869
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

During the period 1869–1881, the migration did not change significantly. In 1881 the average net migration rate was -3 per thousand people. The districts with high positive net migration rates were located in Northern and Central Bohemia, and Eastern Moravia (figure 18), but a decrease was observed compared to 1869. The districts with high negative net migration rates were located in the Western, Southern, and Central Bohemia (around Prague), and Eastern and Southern Moravia. The districts with the highest positive net migration rate (over 10 per thousand people) are Most, Teplice, Ústí nad Labem, Jablonec nad Nisou, and Brno-město. The districts with the highest negative net migration rate (over 10 per thousand people) were Rakovník, Havlíčkův Brod, Domažlice, Klatovy, Prachatice, Strakonice, and Písek.
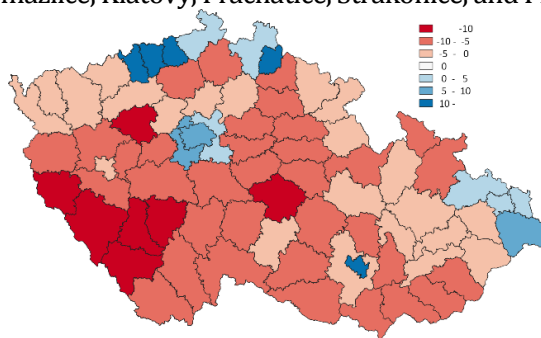

Figure 18. Geographical distribution of net migration rates, by districts, Czech lands, 1881
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

During the period 1881-1890, the migration continued to be constant. In 1890, the average net migration rate accounted for -3 per thousand people. Districts with high positive net migration rates were located in Northern and Central Bohemia and Eastern Moravia (figure 19) and Northern Silesia, but their amount decreased compared to 1881. Districts with high negative net migration rates were located in Western and Southern Bohemia and Eastern and Southern Moravia. The districts with the highest positive net migration rate (over 10 per thousand people) were Most, Teplice, Ústí and Labem and Karviná. Most, Teplice, Ústí nad Labem were among the districts with the highest positive net migration rate since 1869. The districts with the highest negative net migration rate (over 10 per thousand people) were Tachov, Domažlice, Klatovy, Prachatice, Strakonice, Havlíčkův Brod, Brno-venkov, and Bruntál.
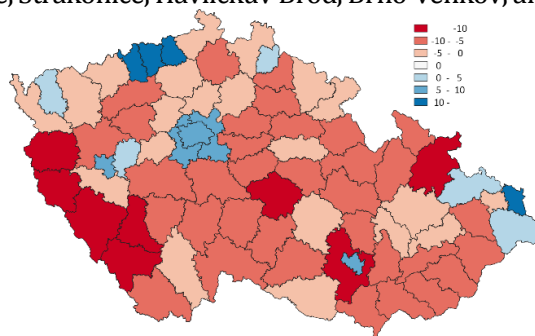

Figure 19. Geographical distribution of net migration rates, by districts, Czech lands, 1890
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

During the period 1890-1900, we observe slight changes in the migration trends, although the average net migration rate remained constant at -3 per thousand people. The districts with a high positive net migration rate were mostly scattered in Northern and Central Bohemia (figure 20).

The districts with high negative net migration rate were located in Western and Southern Bohemia and Eastern and Northern Moravia and Silesia. The districts with the highest positive net migration rate (over 10 per thousand people) were Prague, Prague-západ, and Brno-město. The districts with the highest negative net migration rate (over 10 per thousand people) were Klatovy, Prachatice, Strakonice, Třebíč, Žďár nad Sázavou, Opava, and Karviná. Cities continue to grow, including suburban areas (e.g., Prague and Brno).
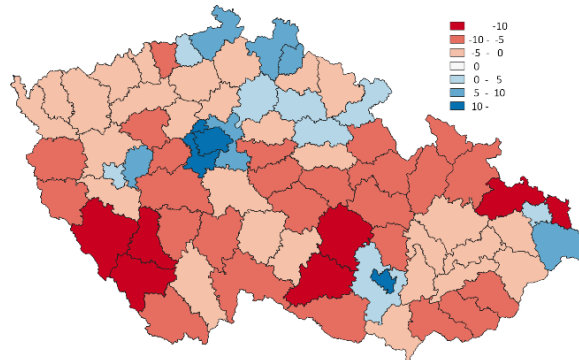

Figure 20. Geographical distribution of net migration rates, by districts, Czech lands, 1900
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

Figure 21 showed a slow change during 1900-1910. The average net migration rate was constant at -3 per thousand people. The districts with the highest positive migration rate also included Frýdek-Místek with a net migration rate of 17 per thousand people. Klatovy, Prachatice, Strakonice were among the districts with the highest negative net migration rate since 1881. Cities and suburbs continued to grow.
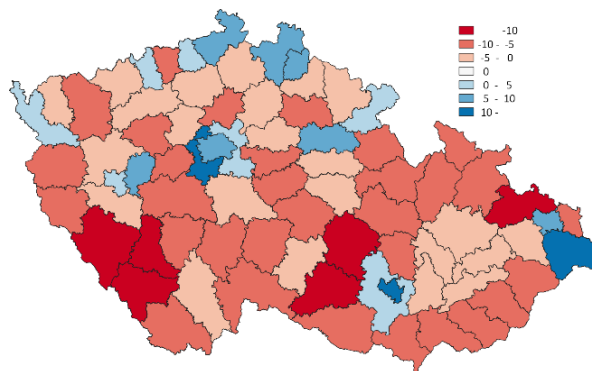

Figure 21. Geographical distribution of net migration rates, by districts, Czech lands, 1910
Sources: Author's calculations based on data from Austrian Statistics, CZSO and Historický GIS.

From 1869 to 1910, migration slightly changed. The same areas consistently lost population or gained. For example, Klatovy, Prachatice, Strakonice lost population due to migration during the period 1881-1910. Most, Teplice, Ústí nad Labem gained population during the period 1869-1890. The districts with a high positive net migration rate were located mostly in Northern and Central Bohemia. The districts with high negative net migration rates were located in the Western, Southern, and Central Bohemia (surroundings of Prague) and Moravia (except Brno and surroundings of Brno). An essential trend during this period was the rural-urban migration. Cities always had positive net migration, and then the suburbs started to gain population due to migration from surrounding rural areas.

DISCUSSION AND CONCLUSIONS

Similar levels of mortality and fertility characterize the pre-transition phase or first stage of demographic transition (Rowland 2003) in the Czech lands to other European countries. Both the crude death rates and crude birth rates were moderately high, as noted in prior studies (Notestein 1977; Coale 1986; Diebolt and Perrin 2017).

According to some research (e.g., Fialová, Pavlík and Vereš 1990), after 1820, crude birth rate declined due to an increase in the age at first marriage and the proportion of women never married, implying rather moderate-high levels of natality. From 1831-1847, the Czech lands were experiencing natural fertility (Henry 1961). CBR was fluctuating at around 40 per thousand people.

The next stage of the demographic transition is characterized by the mortality decline (Rowland 2003). The mortality varied during this period. It was generally higher in cities during industrialization. Cities were called demographic sinks (Dyson 2010). In rural areas, mortality was lower than the natality, this generating population growth, which through migration supported the urban growth (Dyson 2010; Bocquier and Costa 2015).

The third stage of demographic transition (Rowland 2003) starts with a fertility decline. The fall in fertility did not occur evenly but with vast differences between districts. Peripheral districts are usually more disconnected from the communication system and the capital, thus having a higher "behavioral" autonomy and are more prone to follow and respect cultural norms and traditions. This finding is supported by the example of France (Diebolt and Perrin 2017).

The migration section shows clear trends of rural-urban migration. The growth of cities between 1869 and 1910 was significant. Cities had constant population gain due to in-migration; this was a common phenomenon across all Europe (Davis 1955; Davis 1963; Knodel 1974). Urban areas were the most attractive destinations, but also a part of the North of Bohemia, which was more industrialized (migration from agrarian to industrialized districts) (Brabencova 1989; Barlow, Dostal and Hampl 1994). During the urbanization, the districts around the cities (suburbs) started to be a destination for in-migration too.

Nevertheless, at the national level, the net migration rate was preponderantly negative. A possible explanation is the emigration. Although industrialization decreased the proportion of the population involved in agriculture from 2/3 to 1/3 (1850-1910), the standards of living were poor. This led to high emigration, mostly among young people aged 20-29 (Fialová 1989).

In general, the demographic transition in the Czech Lands follows the pattern of European countries; the fertility declined shortly after the mortality decline. The demographic transition started in the Northern districts and Prague, this being related to the higher economic development in this region due to industrialization. At the regional level, we see vast differences in crude death rates and crude birth rates among the districts at the beginning of the demographic transition, and also some geographical patterns are observed in the trends, specifically between the industrialized Northern regions and the Eastern regions of the country. Still, at the end of demographic transition, the districts became almost homogeneous.

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OTHER COMPARTIMENTS

REVIEW[1]
**to the monography "Diagnosis of the economic potential of the enterprise",
author Nelli AMARFII-RAILEAN, PhD in Economics, Associate Professor,
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The monograph investigates the possibilities of adapting international factorial models to local analytical practice, as well as the possibilities of implementing modern information technologies in the diagnosis and estimation of the economic potential of the enterprise. The research aims to argue the importance of diagnosing the economic potential of the enterprise in the conditions of a sustainable activity, delimiting and establishing the components and factors influencing the economic potential of the enterprise, studying the models applied in this field. At the international level and the possibilities of their use in the practice of domestic enterprises, as well as the use of modern information technologies in the researched field.

Keywords: *financial diagnosis, economic potential, analysis models, informational technologies.*

In the context of the increasingly intensive implementation of information technologies in the practical activity, the diagnosis of the economic activity of the enterprises becomes one of the basic functions of the information-decision system. Based on the diagnosis, the internal reserves towards the increase of the efficiency of the enterprise operational activity can be detected, which, in the process of the performed activities, is achieved by elaborating certain concrete measures, ensuring the increase of the financial results, the indicators of the profitability of the production, the financial stability, the payment capacity and the enterprise credibility.

Harnessing the potential of production and commercialization, estimating the efficiency of using the production factors, assessing the rates of financial management, payment capacity and financial stability, as well as elaborating the measures to improve the financial situation, requires performing a complex economic-financial analysis.

In this context, the existing activity conditions of the local production units determine the need for theoretical and applicative changes in the methods of examining the results of the activities carried out, in order for the domestic producers to become compatible with the demands of the world economy, and to follow an effective development strategic policy.

The work "***Diagnosis of the economic potential of the enterprise***" – author Nelli Amarfii-Railean – is a constructive contribution, welcomed in the specialty literature, constituting a practical support for economists, auditors, evaluators and an original way of dealing with the economic-financial problems faced by the production units under the conditions of a sustainable development.

The author presents a specific area in the paper – the diagnosis of the economic activity of the enterprise, based on which the stability and increase of financial results can be ensured.

The diagnosis and estimation of the economic potential of the enterprise represents an effective tool for determining the "health" state of the production units at a given time and for evaluating their development prospects.

The purpose of the paper consists in the argumentation of the importance of diagnosing the economic potential of the enterprise under the conditions of a sustainable activity, delimitation and establishment of the component elements and of the factors of influence, the study of the application models in this field at the international level, along with the possibilities of their use in the practice of the local companies, as well as the implementation of modern information technologies in the nominated field.

The scientific novelty of the obtained results aims at: delimiting the conceptual framework of the notion "the economic potential of the enterprise"; establishing the component elements of the economic potential and determining the reciprocal links between them; systematizing the theoretical visions of different schools and economic currents regarding the examination and estimation of the economic potential; arguing and selecting a system of resultant indicators for diagnosing the performance status of local enterprises; recommending certain improved factorial models for the express diagnosis and analysis of the activity of local enterprises; approval and use of the software for diagnosing the economic potential of the enterprise.

The theoretical significance and the applied value of the paper contribute to deepening the methodological basis of the diagnosis and estimation of the economic potential of the enterprise; identification of international and national practices and experience in diagnosing the performance status of the production units; improving the diagnostic methods and models used in the local practice; adjusting the factorial analysis models to the competitive conditions of activity in the market economy; capitalizing on the possibilities of using software programs and programming languages in economic and financial analysis and diagnosis; implementation of the automated model for processing information sources in the diagnosis of economic potential in the context of increasing the competitiveness of the domestic enterprises.

In the paper, structured in three chapters, having a rich theoretical material, with practical examples, tables, figures, document forms, the models of analysis applied in the domestic and international analytical practice were presented, as well as the presentation of a case study regarding the implementation of modern information technologies in diagnosing the economic potential of the enterprise.

Chapter I "Defining, characterizing and estimating the economic potential of the enterprise" is dedicated to generalizing the theoretical visions on the concept and structure of the economic potential of the enterprise. The methods of diagnosis and estimation of the economic potential, presented in the specialized literature by foreign and local authors, are examined, and the main trends and economic schools are delimited, consistent with the problem approach in the research field. Within this chapter, the author's own vision on the importance of the diagnosis and estimation of the economic potential for increasing the competitiveness of the domestic enterprises is set out.

In chapter II "Methods of diagnosing the economic potential of the enterprise under the conditions of a sustainable development" the factorial models of diagnosis used in world practice are presented, the positive aspects and the deficiencies of these models are revealed, as well as the possibility of their use in practice. Also, the diagnostic model is examined, based on a system of economic-financial indicators, selected and determined by the author for the diagnosis of the performance status of the local companies, including in the context of the express analysis.

Chapter III "Implementation of information technologies in the diagnosis and estimation of the results of the enterprise activity" is devoted to the research of the possibilities of using the programming language in the diagnosis of the economic potential of the enterprise. Own diagnostic model of economic potential is presented and proposed for use: The aggregate index of the company economic potential and its automated version, based on the implementation of modern information technologies. As an example, the software program for diagnosing the economic development potential of the enterprise "Diagnosis" was proposed.

This work is intended for teachers, master students who study at the economic specialty. Also, we find it useful, equally, for students from educational institutions with an economic profile,

accountants, auditors, managers and practitioners preoccupied with the capitalization of the economic potential of production entities and who want to improve and update their knowledge in the field of economic-financial analysis.

The presented work is original due to its complexity, the way to question and solve the problems of the enterprise activity in the context of market economy relations.

The organization of the monograph is a classic one. The paragraphs of the monograph were judiciously used to present, define and explain the analyzed problems. There is a logical thread of the presentation and argumentation of the material (starting from the presentation of the topics, its specifications, the proposed methods and programs are applied step by step and their application with the interpretation of the results) make the monograph easy-to-follow.

The language used is scientifically correct, can be easily read and understood by specialists in the field. The author's style and expression are clear and coherent, the figures accompanying the analyzes are suggestive and highlight the main elements of the research.

The ideas and conclusions drawn from the monograph are relevant and can be starting points for new research in the field, possibly for the development of methods and models for diagnosing economic potential based on software and digital platforms.

The objectives of the monographic research were properly described and achieved through the studies and results presented. The analyzed issue is important since the diagnosis of economic potential provides efficient information for micro and macroeconomic policymakers, because through the diagnosis of economic potential coherent economic-financial management measures can be taken.

The theoretical aspects regarding the economic potential of the enterprise, its estimation in sustainable conditions, the content of the contemporary research in this field, approached in the paper, will serve as a guide for many readers. The problem proposed by the author is not only the problem that is required and needs to be solved, but the formulation of the problem itself is a scientific novelty of great practical importance. On the way to solving the problem in the paper, theoretical and methodological bases are brought in to diagnose the economic potential of the enterprise.

Of particular interest from the reviewed work constitutes the methods of diagnosis of the economic potential of the enterprise under the conditions of sustainable development, the application of the factorial models in the system of the state of performance of the local enterprises. As the target of this analysis, the local company from the agro-industrial sector J.S.C "EXPOSISTEM NORD" was chosen, which comprises three branches.

The author has theoretically and practically argued conclusions can be used in the most diverse situations of enterprises from the factual sector of the national economy.

In the monograph, the author offers an original way of determining the aggregate indicator regarding the degree of use of the production factors, the dimensions of the liquidity indicator of the balance sheet, the diagnosis of the enterprise economic potential in the context of an express analysis.

Another scientific contribution is found in the implementation of modern information technologies in the diagnosis and estimation of the results of the enterprise activity.

The author offers her own vision on different methods of directing the enterprise activity in order to obtain advantageous results, taking into account all the significant factors, combined in the activity of the company by their content, both quantitative and qualitative, which are presented in figures and tables.

The central idea of the paper revolves around the diagnosis of the enterprise, because in the paper the author emphasizes the elaboration of the diagnostic program in three stages – determining the size of the aggregate index of the economic potential of the enterprise and constructing the diagram of this index for the analyzed enterprise.

Even if the paper appears to be academic, strictly analytical, the paper may constitute the basis of any practical work.

The monograph "Diagnosis of the economic potential of the enterprise", author Nelli Amarfii-Railean, has important theoretical and practical value and can be recommended to readers with the most diverse interests in the field of economic-financial analysis.

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