

e-ISSN 2353-0758

**MODERN |
MANAGEMENT |
REVIEW |**

Quarterly, Volume XXV
(January - March)
Research Journal 27
(1/2020)

Volume Editor
Elżbieta Kurzepa

**MMR Journal indexed, among others, on the basis of the reference of the Minister of Science
and Higher Education in ERIH PLUS and Index Copernicus Journal Master List 2018**

Issued with the consent of the Rector

Editor in Chief
Publishing House of Rzeszow University of Technology
Grzegorz OSTASZ

Composition of the Scientific Papers Council
of the Faculty of Management of Rzeszow University of Technology
„Modern Management Review”

Stanisław GĘDEK – chairman (Poland)
Joanna WIAŻEWICZ – editorial assistant (Poland)

members:

Gerhard BANSE (Germany), Joe BOGUE (Ireland), Gérard Kokou DOKOU (France)
Andriy GERASYMCHUK (Ukraine), Aleš GREGAR (the Czech Republic)
Danuta HÜBNER (Poland), Andrzej KALETA (Poland), Jerzy KISIELNICKI (Poland)
Dušan MALINDŽÁK (Slovakia), Johan van OPHEM (Holland)
Aleksandr RAZIN (Russia), Sergej SERIOGIN (Ukraine), Antonio STASI (Italia)
Róbert ŠTEFKO (Slovakia), Josu TAKALA (Finland), Tamara TKACH (Ukraine)
Karsten WEBER (Germany), Gabriel WEISS (Slovakia), Leszek WOŹNIAK (Poland)

Editor in Chief

Stanisław GĘDEK (Poland)

Editorial Committee (Thematic editors)

Andrzej GAZDA (Poland), Igor LIBERKO (Poland), Zhanna POPLAVSKA (Poland)
Janusz STROJNY (Poland) Mirosław ŚMIESZEK (Poland), Leszek WOŹNIAK (Poland)

Statistical editor

Paweł HYDZIK (Poland)

Members of editorial staff

Nataliia GERASYMCHUK (Poland), Agata GIERCZAK (Poland), Grzegorz LEW (Poland)
Marcin MERKWA (Poland), Paweł PERZ (Poland), Justyna STECKO (Poland),
Dariusz WYRWA (Poland), Beata ZATWARNICKA-MADURA (Poland)

Volume editor

Elżbieta KURZĘPA

Language editors

Glyn David GRIFFITHS (The United Kingdom), Tatiana GUGNINA (Poland)
Alewtina ŁAWRINIENKO (Russia), Ruth MALOSZEK (Germany)
Magdalena REJMAN-ZIENTEK (Poland), Piotr CYREK (Poland)

Project of the cover

Damian GĘBAROWSKI

The electronic version of the Journal is the final, binding version.

e-ISSN 2353-0758

Publisher: Publishing House of Rzeszow University of Technology
12 Powstańców Warszawy Ave., 35-959 Rzeszow (e-mail: oficyna@prz.edu.pl)
<http://oficyna.prz.edu.pl>

Editorial Office: Rzeszow University of Technology, The Faculty of Management,
10 Powstańców Warszawy Ave., 35-959 Rzeszów, phone: +48 17 8651383, e-mail: kwart_wz@prz.edu.pl
<http://mmr.prz.edu.pl/>

Additional information and an imprint – p. 105

CONTENTS

From the Editorial Committee	5
Parimal Chandra Biswas, Dilip Kumar Chakraborty: A study of industrial relations in manufacturing industries in the Royal Kingdom of Bhutan ..	7
Olena Cherednichenko: An analysis of the current state of the food industry of Ukraine and determining the prospects for its development	13
Sergiy Kvitka, Oleksandr Mazur: Directions of development of digital society in Ukraine: by case of Dnipropetrovsk region.....	21
Justyna Lipińska: "No" security of information technology.....	31
Tareq Lubbadah: Emotional intelligence and leadership – the dark and bright sides ..	39
Piotr Makowski: Identification of components of operational risk generated by internal factors in the company.....	51
Tetiana Mirzoieva, Olga Tomashevska: Economic assessment of concentration and monopolization of the market of spices and essential oil plants in Ukraine	59
Grzegorz Roślan: Conditions for mental resistance in difficult situations	73
Olga Sorocean, Neli Dilan: Socio-economic dynamics of cee countries within the European Union.....	85
Ludmila Stepasyuk, Zoia Titenko: Financial and organizational implementation of state support for livestock producers.....	95
Additional information	105

From the Editorial Committee

We are giving you the next 27th (1/2020) issue of the Quarterly of the Faculty of Management of the Rzeszow University of Technology entitled “Modern Management Review”.

The primary objective of the Quarterly is to promote publishing of the results of scientific research within economic and social issues in economics, law, finance, management, marketing, logistics, as well as politics, corporate history and social sciences.

Our aim is also to raise the merits and the international position of the Quarterly published by our Faculty. That is why we provided foreign Scientific Council, as well as an international team of Reviewers to increase the value of the scientific publications.

The works placed in this issue include many assumptions and decisions, theoretical solutions as well as research results, analyses, comparisons and reflections of the Authors.

We would like to thank all those who contributed to the issue of the Quarterly and we hope that you will enjoy reading this issue.

With compliments
Editorial Committee

Parimal Chandra BISWAS¹
Dilip Kumar CHAKRABORTY²

A STUDY OF INDUSTRIAL RELATIONS IN MANUFACTURING INDUSTRIES IN THE ROYAL KINGDOM OF BHUTAN

Manufacturing Industries form the backbone of a developing economy like Bhutan. They are one of the most important factors of socio-economic development of the country and an important provider of employment. They contribute 42% of GDP (2017–2018 Annual Report of Royal Monetary Authority of Bhutan) with around 11 percent of Bhutan's workforce. Bhutan's overall development philosophy is based on the concept of Gross National Happiness (GNH), which challenges the conventional concept of GDP for measuring the progress of the country. Instead it considers the psychological and social wellbeing of the citizens and the need to balance between economic growth and social development.

Industrial Relations in manufacturing industries in Bhutan simultaneously contribute to development of GDP and GNH. Industrial Relations directly reflect Bhutan's national culture, socio-economic development, political-administration, newly developed democracy, corporate culture and integration of Bhutan into global economic process. However, the literature is silent on the study of Industrial Relations (IR) practices in the Bhutanese manufacturing industries. Thus, the researchers' interest is in taking up a study on this vital topic for the economy of Bhutan.

Keywords: Industrial Relations, Labour Laws, Organizational Culture, Employee Satisfaction, Gross National happiness.

1. INTRODUCTION

We all are witnesses of social and industrial unrests in neighboring countries, like India, Bangladesh, Nepal and in other countries in South East Asia. But something holds together people of this small country and something drives them to be happy with life's minimum in Bhutan. We are familiar with the great teaching of Buddha on life that life is a series of sufferings and problems. Bhutan is a Buddhist country with rooted ancient culture but it has an optimistic outlook concerning life. The country ranks one of the highest peaceful and

¹ Parimal Chandra Biswas, Ph.D., Professor, School of Management, Adamas University, Kolkata, India; e-mail: parimalchandrabiswas@adamasuniversity.ac.in (corresponding author). ORCID: 0000-0002-3377-1878.

² Dilip Kumar Chakraborty, Ph.D. Research Scholar, School of Management, Adamas University, Kolkata, India; e-mail: kumardilip1652@gmail.com. ORCID: 0000-0002-0114-6111.

happiest countries in the world and boldly preaches Gross National Happiness to the world as a national goal. It is encouraging to learn how labour class copes with life challenges in order to keep and support harmony with one another and pursues happiness in life in this wonderful country.

2. BHUTAN CONTEXT

The Royal Kingdom of Bhutan is a small country with monarchy ruling system, located between two large and powerful nations, China and India. Bhutan has a total land area of 38,394 square kilometers, roughly about the same size as Switzerland. It is a mountainous country, where only three per cent of the land is cultivatable, about four per cent of the land is pasture land, and 70 per cent is covered with forest. The total population of Bhutan is recorded 768 577 in 2016. Population Density (Person per sq. km) is 20 as per office record in the year of 2016. Buddhism continues to play a central role in shaping social values and culture in Bhutan. The majority of the population are Buddhists whilst people in the southern part of Bhutan are mostly Hindus.

Bhutan is one of the few countries in Asia which was never colonised by the British Empire. In terms of gender equality, in fact in terms of property rights women have more property rights in some parts of Bhutan than the men. For instance, in the western part of Bhutan, daughters inherit more land than sons. Bhutan is a high ranking peaceful and happy country in the world.

3. RESEARCH OBJECTIVES

Though IR practices comprise of multiple issues, the researchers have put following major objectives in the study, which contribute to development of GDP and GNH of Bhutan.

1. To study IR practices in manufacturing industries in Bhutan.
2. To do comparative analysis of IR practices in manufacturing industries of different ownership in Bhutan.

4. RESEARCH DESIGN AND FINDINGS

The researchers have studied Industrial Relations (IR) practices in nine manufacturing industries of different ownerships in Bhutan using one set of questionnaires. Total respondents were 294 people including managers and employees. The questionnaires were framed and structured using 5 Point Likert Scale. For comparative analysis only three manufacturing industries of different ownership have been chosen for the study.

For each of the above sections, the common 5 point rating scale goes like this:

- | | | |
|----------------------------|---|----------------|
| Strongly Disagree | – | indicated by 1 |
| Disagree | – | indicated by 2 |
| Neither Agree nor Disagree | – | indicated by 3 |
| Agree | – | indicated by 4 |
| Strongly Agree | – | indicated by 5 |

Table 1. Questionnaire for studying Industrial Relations (IR) Practices

Attributes	Questions
IR1	Worker/employee grievances in the company are handled by the authority concerned with due care.
IR2	HR/IR executives are delegated to look after the employee welfare administration.
IR3	Collective bargaining process is the method to safeguard, protect and improve the employer and employee relationship in the company.
IR4	Management is always active for communicating and discussing day to day operational problems/issues with the trade union or workers' association/workers' representatives.
IR5	Management of the company always promotes workers' participation in decision making process of the organization.
IR6	Management believes in Win-Win situation in any negotiation/collective bargaining process.
IR7	Trade Union/workers' associations/local workers' representatives encourage and cooperate to reach in 'Win-Win' situation in any negotiation/collective bargaining process.
IR8	Management representatives especially HR/IR executives are very active to participate in any events/occasions/rituals organized by the workers/employees of the company.
IR9	Both the management and workers representatives /trade union always prefer amicable settlement of any company disputes/conflicts without conciliation proceedings/adjudication by labor tribunal.
IR10	IR practices are influenced by GNH culture of Bhutan.

Frequency distributions for Industrial Relations (IR) practices in the industries

Table 2. Frequency distributions of Industrial Relations (IR) Practices (%)

Attributes	1	2	3	4	5
IR1	5	7	15	53	20
IR2	4	10	20	50	16
IR3	3	7	28	49	13
IR4	6	11	23	46	14
IR5	11	25	21	36	7
IR6	4	10	26	37	23
IR7	10	21	31	32	6
IR8	6	10	22	40	22
IR9	4	6	32	43	15
IR10	5	7	23	35	30

The maximum number of respondents agree that worker/employee grievances in the company are handled by the authority concerned with due care, which is supported by 53%

respondents. The minimum number of respondents agree that Trade Union/workers' associations/local workers' representatives encourage and cooperate to reach in 'Win-Win' situation in any negotiation/collective bargaining process, which is supported by 32% respondents.

An analysis of IR practices by main domains

Table 3. Survey of Industrial Relations Practices by main domains

Main Domains	Questions	Total Agree %	Total Disagree %	Neutral %
Collective Bargaining	IR3 Collective bargaining process is the method to safeguard, protect and improve the employer and employee relationship in the company.	62	10	28
	IR6 Management believes in Win-Win situation in any negotiation/collective bargaining process.	60	17	23
	IR7 Trade Union/workers' associations/local workers' representatives encourage and cooperate to reach in 'Win-Win' situation in any negotiation/collective bargaining process.	38	31	31
Grievance Handling	IR1 Worker/employee grievances in the company are handled by the authority concerned with due care.	73	11	16
	IR9 Both the management and workers representatives /trade union always prefer amicable settlement of any company disputes/conflicts without conciliation proceedings/adjudication by labor tribunal.	58	10	32
Relationship Building	IR2 HR/IR executives are delegated to look after the employee welfare administration.	67	13	20
	IR4 Management is always active for communicating and discussing day to day operational problems/issues with the trade union or workers' association/workers' representatives.	60	17	23
	IR5 Management of the company always promotes workers' participation in decision making process of the organization.	43	36	21
	IR8 Management representatives especially HR/IR executives are very active to participate in any events/occasions/rituals organized by the workers/employees of the company.	62	16	22
	IR10 IR practices are influenced by GNH culture of Bhutan.	65	12	23

Collective Bargaining process in manufacturing industries in Bhutan is in the beginning stage of development. 38% respondents believe that Trade Union/workers' associations/local workers' representatives encourage and cooperate to reach in 'Win-Win' situation in any negotiation/collective bargaining process. 73% agree that worker/employee grievances in the company are handled by the authority concerned with due care. Only 43% respondents agree that Management of the company always promotes workers' participation in decision making process of the organization. But 65% believe that IR practices are influenced by GNH culture of Bhutan.

A comparative analysis of IR practices in industries of different ownership

Table 4. Survey of Industrial Relations in manufacturing industries of different ownership

Main Domains	Questions	Government Company BBPL			Private Company Lhaki Steel			Joint Venture BFAL		
		TA (%)	TD (%)	N (%)	TA (%)	TD (%)	N (%)	TA (%)	TD (%)	N (%)
Collective Bargaining	IR 3	50	7	43	63	0	37	45	17	38
	IR 6	37	17	46	41	4	45	55	17	28
	IR 7	37	10	53	41	10	49	55	13	27
Grievance Handling	IR 1	77	10	13	90	0	10	58	12	30
	IR 9	60	0	40	34	10	56	50	12	38
Relationship Building	IR 2	57	10	33	72	0	28	45	20	35
	IR 4	33	17	50	72	24	4	43	20	37
	IR 5	67	0	33	63	7	31	55	22	23
	IR 8	50	7	43	45	10	45	53	22	25
	IR 10	73	10	17	35	10	55	55	20	25

Note: BBPL: Bhutan Boards Products Limited, Govt Owned Company
Lhaki Steel Private Limited Company
BFAL: Bhutan Ferro Alloys Limited, Joint Venture Company
TA: Total Agreed, TD: Total Disagreed, N: Neutral

Collective Bargaining process in all industries is not understood correctly. 41% respondents believe that Trade Union/Workers' Associations/local workers' representatives encourage and cooperate to reach in 'Win-Win' situation in any negotiation/collective bargaining process (IR6) in the Private company Lhaki Steel, 37% respondents in the government owned company BBPL and 55% respondents in the joint venture BFAL.

Grievance handling is better performed in the private company than in both of the government owned company and the Joint venture. 90% respondents agree that worker/employee grievances in the company are handled by the authority concerned with due care (IR1) in Lhaki Steel, 77% respondents in BBPL and 58% respondents in the joint venture BFAL.

Only 63% respondents agree that Management of the company always promotes workers' participation in decision making process of the organization (IR5) in the private company Lhaki Steel, 67% respondents in the government owned company BBPL and 55% respondents in the joint venture BFAL.

Only 35% respondents believe that IR practices are influenced by GNH culture of Bhutan (IR10) in in the private company Lhaki Steel, 73% respondents in the government owned company BBPL and 55% respondents in the joint venture BFAL.

5. CONCLUSIONS

The study concludes that IR practices under new democracy in manufacturing industries are developing but without huge public and social conflicts and unrests, which are common in other neighbouring countries. Due to good human relations among people, rooted in their national culture employees cope with life challenges more softly in order to keep and support harmony with one another and pursue happiness in life in this wonderful country. With minimum level of salaries, wages, moderate working conditions, less economic and social benefits they are content with their jobs and management people. The research proves that Bhutan is a peace seeking country and it pursues successfully Gross National Happiness as their national goal.

REFERENCES

- Gallenkamp, M. (2011). The history of institutional change in the kingdom of Bhutan: A tale of vision, resolve, and power. "*Heidelberg Papers in South Asian and Comparative Politics*", Vol. 61.
- Turner, M., and Tshering, J. (2014), *Is Democracy Being Consolidated in Bhutan?* "*Asian Politics & Policy Journal*", Vol. 6(3).
- Tshering Yangden (2009), *Gender, Culture and Development: In the Paradigm of Gross National Happiness in Bhutan*, School of Social and Political Sciences, University of Canterbury, Christchurch, New Zealand.
- Ugyen Tshewang (2015), *Civil Service HRM Reforms in a new Democracy: The Case of Bhutan*, School of Management, QUT School of Business, Queensland University of Technology, Brisbane, Queensland, Australia.

DOI: 10.7862/rz.2020.mmr.1

The text was submitted to the editorial office: March 2020.

The text was accepted for publication: March 2020.

Olena CHEREDNICHENKO¹

AN ANALYSIS OF THE CURRENT STATE OF THE FOOD INDUSTRY OF UKRAINE AND DETERMINING THE PROSPECTS FOR ITS DEVELOPMENT

The aim of this work is to analyze the current state of the food industry of Ukraine and consideration of its development prospects under the set priorities of national economy development and the preconditions for establishing favorable entrepreneurial climate in the food sector of national economy.

The main trends and factors contributing to the further development are outlined, the structure and the dynamics of characteristic indicators of activity of food industry enterprises; the author also outlines the directions and factors in increasing the efficiency of food industry enterprises functioning within the industrial complex of Ukraine. State regulation of the food industry should be focused on the development of production of high-tech innovative products with the highest possible added value, which will increase the competitiveness of food products and the level of industrial processing.

Keywords: industrial complex; food industry; meat; sausage products; processing; innovation.

1. INTRODUCTION

An effective activity of the domestic food industry enterprises is the basis for the stable development and necessary increase in the volume of food production, and, accordingly, the guarantee of an adequate level of food security of the country.

The production and provision of high quality foodstuffs to the population is the main goal of the socio-economic development of society. Accordingly, the prospects for the development and functioning of the food industry of the country are always relevant and priority. Ukraine's food industry is capable of delivering significant GDP growth and occupying one of the first positions in the global food market.

The author investigates the current state and prospects of the meat industry. Given the current problems of the economy, new approaches in the field of meat technology and healthy human nutrition, it is extremely important to realize the tasks that will contribute to the transition of the domestic food industry to a new level and sustainable development of the country, preserving the health of the Ukrainian nation, enhancing food security and improving the level of competitiveness of the national economy.

¹ Olena Cherednichenko, PhD, Department of Economics, Faculty of Economy, National University of Life and Environmental Sciences of Ukraine; e-mail: ya1971@ukr.net. ORCID: 0000-0001-8908-4113.

The purpose of the study is to substantiate the peculiarities of the development and to identify promising directions of development of the food industry of Ukraine. Previous studies analyzed various aspects of the development of the food industry in Ukraine and the meat processing industry in particular, and suggested recommendations for improving its efficiency. However, the development of the food industry requires constant monitoring of problems with political, financial, innovation and other aspects that are not sufficiently covered in scientific studies.

2. METHODS OF RESEARCH

The problem can be solved on the basis of the use of the dialectical method, as well as the application of the evolutionary approach – gradual development, which is based on continuous, gradual quantitative change. Economic-mathematical modeling is an effective tool for substantiation of perspective directions of development.

3. RESEARCH RESULTS

According to the author's conception of the approach, the realization of promising directions of development of the food industry with a stimulating role of the state should be carried out in all major areas simultaneously:

- improvement of tax, credit, monetary, customs and tariff policy, investment policy in order to create and maintain mutually beneficial cooperation between the state and enterprises, to create prerequisites for sustainable growth of the industrial economy, protection of domestic producers and the internal market of food products;
- changing the role and forms of direct economic regulation with a view to more closely linking the interests of different levels and business entities;
- improvement of the legislative policy aimed at creating a single and more or less stable legal space;
- development of state-owned enterprise in industry with the purpose of direct influence on the state on the management of industrial enterprises, first of all they form the scientific and technical potential of the industrial sector.

The importance of the meat industry is that it is, on the one hand, an indicator of the state of development of other sectors of agriculture, and on the other, characterizes the purchasing power and well-being of the population of the country. As the incomes in the structure of consumption of the main foodstuffs by the population increase, the share of products of the meat and fishing industries increases. Consumption of meat by one Ukrainian per year in recent years remains almost unchanged with slight fluctuations: in 2017 – 48.98 kg, or 4.08 kg per month, in 2018 – 48.45 kg and, accordingly, 4.04 kg, and in January–April 2019 – an average of 3.8 kg of meat per month. The overall structure of meat consumption is also stable, with a dominant proportion of poultry meat accounting for almost half of the diet of Ukrainians. In 2017, poultry meat consumption was 24.34 kg per person, or 49.7% of total meat consumption per year, in 2018 - 25.15 kg per person, or 51.9%, in January–April 2019 – 8.24 kg per month, or 54.3%.

The largest domestic producer of poultry meat is the agro-industrial holding “Mironovsky Hliboproduct” with a market share of 38%. The five major producers in the domestic market also include the Agromars complex, which occupies 12% of the poultry meat market, the Agro-Aries company with a 6% share of the market, the Dniprovsky Poultry Complex, Vladimir-Volyn Poultry Farm and Gubin Poultry Complex.

Pork and beef also traditionally occupy a leading role in the structure of meat consumption. Pork consumption in 2017 was 13.8 kg per person, or 6.76% of total meat consumed per year, in 2018 – 12.6 kg per person, or 6.1%.

The largest pork producers in Ukraine are companies such as APK-Invest, Danosha, Nyva Pereyaslavshchyna, Globinskiy Pig Complex and Agroprodservice.

Outbreaks of African swine fever have continued to be a major problem for producers of this type of meat and continue to be recorded throughout Ukraine, leading to mass destruction of livestock. For example, the company with foreign investment “Galicia-West”, which is one of the TOP-10 largest domestic producers of pork, is forced to dispose of tens of thousands of pig carcasses in 2018 because of the detection of this disease. Accordingly, it has significantly affected the processors who suffer from underutilization of production facilities.

But many pork processing companies are still expanding and improving their own production facilities. For example, in the Lviv region, LembergMit opened a new meat processing plant in 2018, investing more than 20 million UAH in production in 2016–2018.

Domestic production of pork almost completely provides the domestic market of the country, and export potential is limited due to the spread of African swine fever.

Beef consumption in 2017 was 3.09 kg per person, or 6.3% of total meat consumed per year, in 2018 – 5.4 kg per person, or 2.62%. The volume of lamb production in the country is small.

Despite the fact that the most expensive and time consuming type of meat is beef, domestic production here can be highly competitive, provided the necessary requirements for the safety performance of this type of product are met. In addition, these products have great market potential for a wide range of consumers, almost unbounded by religious views such as pork. However, fattening and in-depth processing of beef meat is one of the most unrealized niches of Ukrainian business today.

Modern processing in Ukraine is mostly primary, not adapted to specific markets. Therefore, deep, expensive and efficient processing is required to expand the markets for sales, improve the quality of products, increase their product range.

Overall, in 2019, domestic beef and lamb production decreased by a quarter. Nodular dermatitis in cattle, which has been recorded in Ukraine, played a significant role in this.

It was the reduction of beef and pork processing that led to structural changes in the type of meat production in favor of poultry meat (Table 1).

Table 1. Meat production in Ukraine by types, thousand tons

Product	2012	2014	2016	2018	2018 to 2012, %
Meat in slaughter weight	2209,6	2359,6	2323,6	2354,9	106,6
Beef and veal	388,5	412,7	375,6	358,9	92,4
Pork	700,8	742,6	747,6	702,6	100,3
Poultry meat	1074,7	1164,7	1166,8	1258,9	117,1
Mutton and goat	20,0	14,4	13,4	14,3	71,5
Other types of meat	25,6	25,2	20,2	20,2	78,9

Source: Bulletin of Statistical service of Ukraine (2019).

In all, by 2012, the production of slaughtered meat in Ukraine increased by 6.6%, or by 145.3 thousand tons, from 2012 to 2018. Although the largest production volume was observed in 2014. In 4 challenging years for the country, this figure was not reached in 2018.

The largest negative changes were recorded in lamb and goat production, volume decreased by 28.5%, and rabbit and horse meat production – by 21.1%. Beef and veal was also less produced by almost 30,000 tonnes, or 7.6%.

Significant increase in production was observed only for poultry meat, namely by 184.2 thousand tons or by 17.1%. Such positive changes have led to an increase in overall indicators.

Much of the raw material is used for the production of canned meat and semi-finished products, but the largest amount is for the production of sausages.

Sausage production makes up about 14.5% of the total meat production in Ukraine and 30% of the finished meat production. Consumption of sausage products can also be considered as an indicator of the well-being of the population.

The largest producers of sausage products in Ukraine are LLC Globinsky meat-packing plant, LLC “Ukrpromstach-95”, meat-processing complex “Ukrainian bacon”, Meat factory “Favorit plus”, meat-packing plant “APK-Invest”, Yatran Combine, Meat Guild Meat Factory, Alan Meat Processing Plant.

Due to the decrease in livestock population, nodular and nodular dermatitis in cattle, the epidemic in African swine fever pigs decreases the production of sausage products.

The most popular among domestic consumers are boiled and smoked sausages, which account for 69.2% and 17.3% of the total sausage production, respectively.

One of the most expensive segments of the sausage market are raw and smoked products that can be attributed to the delicacy market. The high prices for such products are due to the complexity of their production and the high proportion of meat in the structure of the finished product. But, in this case, consumers are focused first on taste and quality, and then on ingredients and value. The leaders of this market are JSC Yatran, Globino Corporation, Alan Meat Processing Plant.

Table 2 presents the dynamics of changes in the production of sausage products by meat processing enterprises in Ukraine.

Table 2. Production of sausage products by meat processing enterprises of Ukraine, thousand tons

Product	2012	2014	2016	2018	2018 to 2012, %
Sausage products	294	267	239	254	86,4
liver and similar products	6,2	6,9	6,2	5,6	90,3
boiled, sausages, wipes	188	171	156	168	89,4
semi-smoked	54,9	47,7	40,5	41,1	74,9
cooked smoked, semi-dried, uncooked, smoked	23,5	24,7	23,9	24,1	102,6
smoked and baked	8,7	4,9	3,2	3,4	39,1

Source: Bulletin of Statistical service of Ukraine (2019).

In the period from 2012 to 2018, the total production of sausage products in Ukraine decreased by 13.6%, namely by 40 thousand tons. The biggest negative changes are noted

in the production of smoked and baked sausage products. Compared to 2012, their production decreased by almost 61%. As the sausage products boiled, sausages and sausages are the largest component of all sausage products produced, it is precisely the decline in their production that has influenced the total volume of all sausage products. During the period considered, the production of cooked sausages, sausages and sausages decreased by 20 thousand tons, ie this decrease accounts for half of the changes in the total production of sausage products.

Positive changes are noted only in the production of cooked, smoked, semi-dried, uncooked and smoked sausages by 2.6%, which only confirms the fact that there is a stable circle of consumers of these products, which give preference to its consumption, not paying attention to the various problems in society. This is a driving factor for manufacturers to expand this segment of the sausage products market.

In addition, 30% of the home-cooked and smoked sausages market in the domestic industry are in the shadow. Such a market is provided by small producers, mainly in the western regions of the country, who do not report to the fiscal service, selling products on the markets, as well as illegal transportation of sausages from Italy and Poland.

Consumption of meat delicacies is always the lowest due to high prices and occupies less than 10% of the market. The production of such products strongly depends on the level of welfare of the population. The most popular are ham, bacon, brisket and carbonate, which make up 84% of the total demand for delicacies. At the same time, this particular segment of the market remains more or less stable, since the buyers of these products do not abandon it either in the reduction of the general level of welfare or in times of crisis. The decline in beef and pork production, as well as the high supply of chicken in Ukraine contributed to the emergence of a variety of poultry delicacies such as smoked wings, rolls and more.

The largest manufacturers of delicacies in Ukraine are Firm Garmash, LLC Globinsky Meat Factory, PJSC "Kremenchuk Myaso", JSC "Yatran", Meat Factory "Favorit Plus". Negative factors affecting the development of the industry may be a decrease in livestock, rising prices for raw materials and energy, reducing the purchasing power of the population, the loss of enterprises located in the Crimea and eastern Ukraine, the development of the shadow market segment.

In general, it should be noted that the modern domestic market for meat and meat products is consolidating. Large manufacturers create vertically integrated structures that fully cover the cycle of production and marketing of products, from livestock to retail sale of finished products. With regard to the meat market, its leading trends are a decrease in the production of basic raw materials and an increase in the share of cheaper meat, namely poultry, in its structure.

The meat market has been volatile lately due to many reasons, such as rising prices for animal feed and falling livestock due to the spread of disease. A gradual but rapid transition to the dominance of the meat substitutes market, namely vegetable proteins, laboratory meat and more, is projected to lead to a 70% fall in demand for beef in the next ten years.

Issues of quality and environmental safety of foodstuffs remain acute for Ukrainian producers and consumers, as their main criterion is their price. Most consumers have low solvency, and manufacturers are forced to use cheaper substitutes for raw materials. Food safety standards have not changed in state standards for many decades, and the lack of rigid government controls has led to the irresponsible attitude of many producers and the production of low quality products that could not compete in the world market.

The level of supply of raw materials, the relationship between suppliers of raw materials and processing enterprises, and the purchasing power of the population have a significant impact on the development of the food industry and the production of high value-added products.

The level of self-sufficiency of the Ukrainian food industry is quite high: most needs reach more than 90%. However, the level of supply of meat, fish and fruit and berry products due to the import of these food products is insufficient.

One of the promising areas of effective operation of the industry is the development of comprehensive integration links and the formation of integrated associations with a closed production cycle, which allows you to regulate costs, save costs, rational use of human and material resources.

The level of prices for foodstuffs and household incomes is always closely interconnected. The main driving force in market conditions is demand, so only solvent demand leads to an increase in supply from producers. In today's realities in Ukraine, the low standard of living of citizens is low, leading to changes in the structure of consumption of food by the population in favor of cheap and substandard foods. Accordingly, one of the main directions of development of the Ukrainian food market should be the production of high quality products, but at a reasonable price for a wide range of consumers. Therefore, food companies need to maintain their existing competitive position in the market and win new ones, improving product quality, modernizing production technologies, improving product marketing and providing affordable food prices for the population.

State regulation of the food industry should be focused on the development of production of high-tech innovative products with the highest possible added value, which will increase the competitiveness of food products and the level of industrial processing. In order to achieve this goal, the state must create favorable conditions for attracting investment.

In 2017, only 17.8% of the large and medium-sized food industry companies were engaged in innovative activities, most of which spent money on the purchase of machinery, equipment and software. On the whole, the expenditures of large and medium-sized enterprises for innovative activity in the field of food, beverage and tobacco production amounted to 1,402 million UAH, out of which 1,274.34 million UAH were enterprises' own funds, 113.29 million UAH – credits, and other funds – this is from local budgets and other sources.

Only 158 large and medium-sized enterprises in the food industry innovated, of which 98 introduced innovative processes, 89 innovated products, of which only 19 introduced new products for the market. 117 large and medium-sized enterprises sold innovative products worth 4711.87 million UAH, of which only 25 produced products that were new to the market worth 436.25 million UAH. Out of Ukraine, in 2017, 37 enterprises were sold innovative products worth 335.83 million UAH.

On the whole, the level of innovation activity in the food industry is very low. Insufficient working capital, lack of adequate state support and investment are reflected in the level of implementation of modern science and technology, which, in turn, adversely affects the technical equipment, production capacity of manufacturers and the quality of products produced. Therefore, the most important reasons for the lack of activation of innovative activity at the domestic food industry enterprises are: insufficient funds for the implementation of the latest innovative projects; high level of wear and tear of production facilities and outdated technologies, which requires considerable expenses for updating the

technical and technological base and attracting highly qualified specialists; long payback period, etc. The good export potential of the domestic food industry attracts foreign investors, the industry ranks second after metallurgy in terms of foreign direct investment.

In recent years, Ukraine has faced major challenges due to economic and political shifts that have led to significant changes in trade and economic relations. The implementation of the FTA with the EU countries dramatically changes the direction of development of foreign trade relations, and trade preferences for Ukrainian enterprises contribute to the growth of food industry exports.

According to the Ministry of Agrarian Policy and Food of Ukraine, Ukrainian exporters have not been able to use all tariff quotas in full. In 2018, the under-utilized quota for poultry and poultry semi-finished products is underused – 59.2%, for eggs and albumins – 48.3%, for bran, waste and residues – 43.2%, for processed cereal products - 40, 1%, oats – 36.5%, milk powder – 24.1%, processed milk products – 22.1%, barley, barley flour and granules – 16.6%, other sugar products – 15.9%, milk, cream, condensed milk and yoghurts – 15%, processed sugar products – 13.9%, ethanol – 10.4% and basic sugar tariff quota – 85% (Cherednichenko, 2017).

The main reasons for this situation were the inability of domestic producers to meet the requirements for compliance with standards of sanitary and phytosanitary measures and food safety due to differences in the standards of the system of standardization and certification of food products; the complexity of the situation directly on the EU market due to Russia's sanction regime against food imports and, consequently, oversaturation of its own production. Therefore, the orientation of increasing exports of food products needs to be extended not only to the available markets of the CIS and EU countries, but also to the Middle East, Asia and Africa. For example, dairy producers, such as PJSC “Zolotonisky Oil and Gas Plant”, PJSC “Yagotinsky Butter Plant”, have been certified by the European Commission and supply their products to the EU, China, UAE and other countries. Today Ukrainian producers supply products to markets of almost 190 countries.

4. CONCLUSION

According to these factors, the prospects for the development of food industry enterprises are as follows:

- reducing the cost of processing raw materials, the use of the latest technologies to improve the quality of food and reduce the price for the end consumer;
- creation of innovative products for additional income of the producer, expansion of the range of consumers of different contingent groups and maximum satisfaction of their needs;
- the formation of agro-industrial clusters that would ensure a continuous technological process of production, starting with the cultivation of agricultural products, their processing, production and sale of food;
- attraction of foreign investments for expansion of product range, updating of material and technical base, modernization of production process, introduction of resource-saving and low-waste productions and improvement of results of activity of enterprises;
- ensuring compliance with standards of sanitary and phyto-sanitary measures and food safety; implementation of the HACCP food safety system and other certification

systems; Orientation of domestic producers to foreign markets, increasing the competitiveness of products at the global level;

- improvement of the national regulatory policy in the sphere of foreign trade relations in order to increase the competitiveness of export of foodstuffs, to continue the protectionist policy towards the domestic commodity producer.

The realization of these tasks will help the transition of the domestic food industry to a new level and sustainable development of the country, preserve the health of the Ukrainian nation, enhance food security and increase the level of competitiveness of the national economy.

REFERENCES

- Cherednichenko, O.O. (2007). *On the issue of production and preservation of quality of meat and meat products*. "Scientific Bulletin Of the National Agrarian University", No. 110, Part 2.
- Cherednichenko, O. (2017). *Economic aspects of manufacture and consumption of meat and meat products*. "Agricultural and Resource Economics: International Scientific E-Journal" [online], Vol. 3, No. 3. Access on the internet: available at: www.are-journal.com.
- Dragan, O.I. (2010). *Preconditions and problems of development of meat industry enterprises in Ukraine*. „Formation of market relations”, № 6 (109).
- Fedulova, I. (2015). *Methodical approaches to the determination of intra-productive prices on enterprises of the meat processing industry*. "Ukrainian Journal of Food Science", Vol. 3. Issue 2.
- Kolyadenko, S.V. (2011). *Organizational and economic principles of livestock production in Ukraine*. "Sustainable economic development", № 6.
- Naumova, E.A. (2011). *Current state and prospects of development of the sausage products market in Ukraine*. "Business Inform.", № 8.
- Rudenko, M.V. (2010). *Problems of Meat Processing Enterprises of Ukraine in the Crisis*. "Bulletin of KSU named after M. Ostrogradsky", Vip. 2 (61). Part 1.
- Rusnak, P.P., Cherednichenko, O.O. (2007). *Activation of innovative activity in agro-industrial production*. "Economics of AIC", Vol. 3.
- Sedinkova, I.O. (2015). *Current status and management system of the meat complex*. "Scientific Bulletin of the Kherson State University", Vip. 15. Part 3.
- Yankov, V.O. (2010). *Meat Processing Industry, Status and Prospects for Development*. "Food Science and Technology", № 11.
- Yemtsev, V.I. (2011). *Features of Formation of Competitiveness of Meat Industry Enterprises of Ukraine*. "Scientific Bulletin of Uzhgorod Univ."
- Zaremba, P.A. (2007). *The strategy of stabilization and development of meat processing enterprises*: [monograph] Donetsk: NAS of Ukraine, Institute of Industrial Economics.

DOI: 10.7862/rz.2020.mmr.2

The text was submitted to the editorial office: March 2020.

The text was accepted for publication: March 2020.

Sergiy KVITKA¹
Oleksandr MAZUR²

DIRECTIONS OF DEVELOPMENT OF DIGITAL SOCIETY IN UKRAINE: BY CASE OF DNIPROPETROVSK REGION³

The current stage of the information society has been investigated by the authors. Under the influence of development of new technologies, it has clear signs of a transition to a digital society. It has been proven in the article that the widespread use of mobile devices in the life of social individuals alters dramatically the interaction between public authorities and stakeholders. It has been argued in the article that not all administrative processes and procedures can be automatized during the digital transformation. It has been shown by the authors that the positive example of the development of digital society's foundations at the regional and local level is becoming a factor for the digitalization of all public administration bodies of Ukraine. The results of an expert survey on assessing the digital development of Dnipropetrovsk region has been presented in the article.

Keywords: information society, digital society, digital transformation, electronic readiness, electronic governance, electronic democracy.

1. INTRODUCTION

The aim of the article is to identify the problems and directions of digital society's development in Dnipropetrovsk region of Ukraine.

The research methodology is aimed at studying the state of transition of the information society to the digital one using logical analysis, synthesis and comparison, as well as conducting an expert survey by the Delphi method.

¹ Sergiy Kvitka, Associate Professor, Dr., Dnipropetrovsk Regional Institute of Public Administration of the National Academy of Public Administration under the President of Ukraine, 29, Hoholya St., Dnipro, 49044, Ukraine; e-mail: skvitka14790@gmail.com. ORCID: 0000-0003-3786-9589 (corresponding author).

² Oleksandr Mazur, PhD-student, Dnipropetrovsk Regional Institute of Public Administration of the National Academy of Public Administration under the President of Ukraine, 29, Hoholya St., Dnipro, 49044, Ukraine; e-mail: ukraine.mazur@gmail.com. ORCID: 0000-0002-7569-214X

³ The article has been written on the results of the research conducted in 2019 as a part of the scientific theme "Assessment of the e-readiness of districts, cities and united territorial communities of Dnipropetrovsk region" (state registration number 0119U101996).

The scientific originality of the article is that the factors of the transition of the information society to the digital one, which can be used both at the regional and local levels, have been identified.

The practical significance of the article is that the peculiarities of digital society's development in one of the industrialized regions of Ukraine have been identified based on the study of territorial communities' e-readiness.

The result of the study is the identification of the main priorities for the development of digital society in Dnipropetrovsk region of Ukraine.

2. TRANSITION FROM THE INFORMATION SOCIETY TO THE DIGITAL SOCIETY

Many authors give different interpretations of the concept of the "information society", but what they all have in common is that such a society is based on information and communication links. By the encyclopedic definition, the "information society" is "community in which information and communication technologies are central to social and economic activity" (Dutton, 2003). A more specific wording is "the information society is a neo-manufacturing society in which information is both the raw material we produce and the manipulate and the finished good we consume" (Floridi, 2014).

The initial milestones of the information society date back to the days when writing, printing and then media were invented. The final formation of the information society occurred when the development of information and communication technologies (hereinafter – ICT) enabled the processing of information through means of transmission and recording (Floridi, 2014). In the pursuit of the rapid spread and adoption of ICT, it is necessary to understand that one of its important aspects is the adaptation of humans to technology.

On the other hand, further large-scale development of ICT influenced on a society. This impact needs the ethical and intellectual basis of ICT's use to be understood and justified (Floridi, 2014). In this sphere, scientists assume the interconnection of digital and physical worlds, that is, they make researches, which show that the human perception of the technology world can determine human's possible future activities (Dufva & Dufva, 2019).

The use of information and communication technologies transformed the society of a particular country into an information society. Moreover, public administration was made with the help of ICT and the public and became, in fact, the e-government (Floridi, 2014). That is, the e-government became the ground for the future introduction of the latest technologies. And it is the digital transformation that leans on this previous experience.

Digital ICTs are making closer the overcoming of the digital divide between territories and are tied to big data, social networks, the e-voting, information and cybersecurity, blockchain, the Internet of Things and more. The significant for these digital technologies is the use of the technology of the artificial intelligence.

Studying the development of technologies in the evolutionary context, digital ICTs are transforming the information society into a digital community (Floridi, 2014). From now on, each of us feels that digital technology entered the everyday life of the most of individuals. Modern cell phones, information networks and other things, which was only predicted by authors in science fiction books several decades ago, are a reality today (Dufva & Dufva, 2019). In our deep conviction, the beginning of the transformation from the information society to the digital one started with the launch of Apple's phones, namely

I-phone. The concept of the mobile phone of such type changed the possibilities of digital technologies' use radically. The smartphone opened the opportunity to work without being tied to its owner's location, by accessing 3G/4G broadband mobile Internet.

An example of the interest of the population to smartphones and digital technologies is the growing number of Internet users worldwide. For example, according to Eurostat, in the European Union countries the amount of people aged 16 to 74 who frequently use the Internet (daily or almost daily on average) accounted for 38% of their total in 2007, and for 76% in 2018. Moreover, statistics considered the use of the Internet network, which includes all places and ways of access for private or work purposes (Individuals frequently using the internet, 2018).

For comparison with the Ukrainian realities of Internet penetration in Ukraine, the number of Internet users increased by 59% for almost 15 years, from 12% (in 2004) to 71% (in third quarter of 2019). The rate of Internet access in villages and small towns is increasing gradually, coming closer to the regional cities. The big growth over the last three years happened as for the vast majority of users who have connected to the Internet in 2019, the smartphone is the first and only one mobile device to access the network. 22% of users access the Internet exclusively through their smartphones. Most of the population under 35 are Internet users (Internet penetration in Ukraine, October 2019). Thus, population's "smarting" contributes slowly to the digital transformation of citizens.

During recent years, the gradual transition from the information society to the digital one has become more tangible. In Ukraine, at the state level, a number of defining regulatory documents were adopted, namely concepts: the development of the e-governance, the development of the e-democracy, as well as the development of the digital economy and society. Therefore, it should be noted that the state is trying to act systematically in the studying and implementation of the latest digital technologies in public administration (including local governments).

It should be noted also that there is a digital transformation in the public administration, which aims to change the organizational and bureaucratic aspects of the activity, taking into account interests of the stakeholders – business and citizens. The speed of the digital transformation will depend on many factors. At the same time, the use of the latest technologies by the stakeholders will require promptness in the activity of the authorities. This, in turn, will lead to the adaptation of administrative processes for the provision of services to external needs. In these circumstances, stakeholders play not only a role of a customer, but become a partner in transformation via the use of the latest technologies in service delivery. In this context, scholars interpret "digital transformation is a holistic effort to revise core processes and government services beyond the traditional digitization efforts" (Mergel, Edelmann & Haug, 2019). Considering the human factor, it can be assumed that digital transformation in public authorities will be slower than expected.

In general, the automation of processes in public administration is an attractive field for the introduction of digital technologies, in particular the artificial intelligence technology. In some cases, optimism in the implementation of the artificial intelligence in public administration is faced with the impossibility of automating of administrative processes and procedures from a technical point of view. That's why arises the question to outline the capabilities of such automation, as "from the multitude of thousands of administrative procedures, decision makers must select those processes that are appropriate for partial or full automation" (Etscheid, 2019). We believe that the implementation of the artificial

intelligence in public administration will require changes in existing administrative models of the organization, somewhere without the human staff in automatic mode.

Artificial intelligence is a technology that allows computer systems fulfilling tasks, close to the level of the human intelligence. The availability of data, analytics and cloud computing has a positive impact on the development of the artificial intelligence technology. This accessibility is an opportunity for the machine learning and the development of algorithms for this technology (UN E-Government Survey 2018).

We believe that the artificial intelligence, being a major factor in the digital society, should a priori be taken into account when designing and implementing digital ICT in public administration.

Public administration resources should be directed to the fulfillment of one of the main tasks – the provision of qualitative administrative services. That's why, the technology of the artificial intelligence is designed to effectively allocate resources in public administration's bodies, the operation of software bots for the provision of certain administrative services, the automation of decision making on minor everyday issues, responding to templates of citizens, adjusting flexibility in responding to emergencies, forecasting changes in environments, traffic management, and also in recognition and translation of different languages (UN E-Government Survey 2018).

In Ukraine's realities, the introduction of digital technologies, including the artificial intelligence, is a benchmark for the Government's strategic goals in the long-term future. But with all positive intentions, this situation needs to stimulate the development. The necessity to solve all existing issues related to technical support and shortage of the specialist staff does not hasten the adoption of digital technologies in public administration. Positive experience of digital society's development at the regional and local levels can be a driving force for the advancement of digital deployments at the national level. To that end, the evaluation of the electronic readiness of districts, cities and united territorial communities has been made in Dnipropetrovsk region of Ukraine.

3. PERSPECTIVES OF DIGITAL SOCIETY'S DEVELOPMENT IN DNIPROPETROVSK REGION OF UKRAINE

The determination of perspectives of digital society's development in Dnipropetrovsk region was conducted by the remote method under the creation of the regional program "Electronic Dnipropetrovsk region" for 2020–2022 years and engaged an expert survey of 554 persons who included the authorities, business, science and the public.

The Delphi survey questionnaire was designed on the basis of the results of a preliminary analysis of the condition of "informatization" in the region. The experts were asked to answer questions about the level of development of the digital society of Dnipropetrovsk region by the following estimates:

- 1 – not important / incredibly / very low
- 2 – little important / little likely / low
- 3 – important to some extent / probably to some extent / medium
- 4 – important / probably / high level
- 5 – very important / very likely / very high level
- 0 – difficult to answer

The research results given below, made it possible to include significant aspects of public administration digitization to Dnipropetrovsk Region Electronic Informatization

Program for 2020–2022 (Dnipropetrovsk Region Council, 2019). In fact, the draft program of Dnipropetrovsk Regional Council, which was approved in October 2019, is a roadmap for the implementation of the idea of digital society in the region in accordance with world standards, which takes into account the interaction of government, business and civil society institutions.

The following digital development indices defined by the International Telecommunication Union and other specialized UN units were taken as the basis of the research:

- ICT development index (2017) – Internet access, digital inequality issues;
- E-Government Development Index (2018) – Information and Communication Structure and Document Management;
- E-Participation Index (2018).

4. RESULTS

The research allowed suggesting a number of conclusions regarding the digital development of one of the most industrial regions of Ukraine (Electronic Dnipropetrovsk region 2020–2022, 2019). The peculiarity of the research was that there were more than 29% of business representatives and 30% of representatives of civil society institutions among the experts. Other experts were representatives of public authorities and budgetary institutions. This provided a qualitative presentation of different opinions and, accordingly, a synergistic effect of the cross-sectoral interaction.

According to data of Table 1. by experts' opinions, the level of Internet access in Dnipropetrovsk region is at a rather low level, although it is a bit higher than the index of the International Telecommunication Union for the whole country. At the same time, the level of the information security is poor. One can even say that cyber threats are an urgent

Table 1. Level of Development of Information and Communication Infrastructure

Quality of the Internet access	Score	0	1	2	3	4	5
	Survey data		0,6%	0,6%	4,5%	21,2%	35,8%
Quality of Internet providers services	Score	0	1	2	3	4	5
	Survey data		0,0%	1,7%	6,2%	31,3%	43,6%
Quality of 3G/4G mobile internet services	Score	0	1	2	3	4	5
	Survey data		2,2%	1,7%	8,4%	38,0%	36,3%

Detailed description of the pie chart: The pie chart represents the survey data for the 'Quality of 3G/4G mobile internet services'. It is divided into six segments. The largest segment is green, representing a score of 3 at 38.0%. The next largest is purple, representing a score of 4 at 36.3%. Other segments include light blue (score 5, 13.4%), orange (score 2, 8.4%), and blue (score 0, 2.2%). A small red segment (score 1, 1.7%) is also present. A legend to the right of the chart maps colors to scores: 0 (blue), 1 (red), 2 (orange), 3 (green), 4 (purple), and 5 (light blue).

Table 1 (cd.). Level of Development of Information and Communication Infrastructure

Degree of informational systems' protection	Score	0	1	2	3	4	5
	Survey data	7,8%	8,4%	15,6%	43,6%	18,4%	6,2%
Degree of cyber-threats	Score	0	1	2	3	4	5
	Survey data	7,3%	3,4%	15,6%	24,0%	28,5%	21,2%
Degree of software piracy	Score	0	1	2	3	4	5
	Survey data	7,8%	3,9%	8,9%	22,9%	25,1%	31,3%
The degree of enterprises and organizations' innovation activity in the sphere of digital technologies	Score	0	1	2	3	4	5
	Survey data	5,0%	7,3%	20,7%	43,6%	19,6%	3,9%
The possible speed of Internet access in the region in 2022	Survey data						
Over 30 Mb/sec	3,9%						
Over 50 Mb/sec	25,7%						
Over 100 Mb/sec	70,4%						

Table 1 (cd.). Level of Development of Information and Communication Infrastructure

The necessity to implement the “cloud” technologies	Score	0	1	2	3	4	5
	Survey data	3,4%	2,2%	6,1%	16,8%	27,4%	44,1%
The level of potential demand for digital goods, jobs and services among the population	Score	0	1	2	3	4	5
	Survey data	0,6%	1,1%	7,3%	25,1%	41,3%	24,6%
The level of use of digital technologies by budget organizations	Score	0	1	2	3	4	5
	Survey data	1,1%	4,5%	27,9%	35,2%	23,5%	7,8%
The level of potential demand for digital goods, products and services among enterprises and organizations in general	Score	0	1	2	3	4	5
	Survey data	3,4%	0,6%	6,7%	29,1%	45,3%	15,1%
The level of potential demand for digital products, jobs and services in budget organizations	Score	0	1	2	3	4	5
	Survey data	2,8%	5,0%	11,7%	29,1%	35,8%	15,6%
The level of innovative activity of enterprises and organizations in the sphere of digital technologies	Score	0	1	2	3	4	5
	Survey data	5,0%	2,8%	15,1%	37,4%	32,4%	7,3%

Source by materials of Electronic Dnipropetrovsk region 2020–2022, 2019.

problem in Ukraine. The same applies to assessing the level of the digital piracy. Too high figures indicate a clear shortcoming on the part of the authorities to end such criminal practice.

The level of the e-democracy in any country is linked closely to the characteristics of traditional democracy and, above all, to the peculiarities of the rule of law and civil society. Taking into account the development of these two factors, Ukraine occupies a very middle place in the world ranking. These is reflected also by the results of the research. At the same time, it is necessary to mention the great demand and willingness for the e-democracy from the population.

Table 2. The Level of Electronic Democracy

The level of use of information technologies by the population	Score	0	1	2	3	4	5
	Survey data	0,6%	6,1%	13,4%	43,6%	29,1%	7,3%
The readiness of the authorities for electronic communication with the public	Score	0	1	2	3	4	5
	Survey data	2,8%	10,1%	21,2%	36,9%	20,1%	8,9%

Table 2 (cd.). The Level of Electronic Democracy

The readiness of the population to get electronic services	Score	0	1	2	3	4	5
	Survey data	1,1%	7,8%	16,2%	46,9%	21,8%	6,1%
Level of awareness and readiness of the population to use elements of e-democracy and governmental information resources	Score	0	1	2	3	4	5
	Survey data	3,4%	10,6%	28,5%	43,6%	11,7%	2,2%
Level of use of the Internet and telecommunications by the public to interact with the authorities and get public services	Score	0	1	2	3	4	5
	Survey data	0,6%	10,1%	24,0%	43,0%	19,0%	3,4%
Level of use of information technologies by public authorities for public consultations	Score	0	1	2	3	4	5
	Survey data	3,9%	11,7%	25,7%	35,2%	17,9%	5,6%
Level of access to public information, transparency and accessibility of information on the activities of public authorities	Score	0	1	2	3	4	5
	Survey data	1,1%	11,2%	16,2%	33,0%	29,1%	9,5%
Need for citizens' training on how to use the e-democracy tools	Score	0	1	2	3	4	5
	Survey data	0,0%	1,7%	1,1%	15,6%	22,9%	58,7%
Need for school training for young people on the use of the e-democracy tools	Score	0	1	2	3	4	5
	Survey data	0,6%	0,0%	2,8%	7,3%	14,5%	74,9%
Quality of public budget use (budget of participation)	Score	0	1	2	3	4	5
	Survey data	7,8%	11,2%	16,2%	40,8%	17,3%	6,7%

Source by materials of Electronic Dnipropetrovsk region 2020–2022, 2019.

E-Government in Ukraine is developing actively during the last 4 years. It happened mostly thank to international grants. Meanwhile, in 2 years from 2016 to 2018, Ukraine's international rating dropped by 20 points. No clear explanation for this situation has been given yet. According to all expectations of specialists, counting the high volume of advancement of digital technologies, it should be the opposite. Perhaps this is somehow correlated with the general assessment of country's public authority corruption and influences directly the attitude to the e-gov.

The results of this study have rather raised a number of questions, which need further research, than gave a clear vision of ways to solve the described problems.

Table 3. Level of Electronic Governance Development

	Score	0	1	2	3	4	5
	Level of e-government development in general	Survey data	2,2%	6,1%	19,0%	43,0%	26,3%
Quality of the site of the authority	Score	0	1	2	3	4	5
	Survey data	2,8%	3,4%	10,1%	30,2%	39,1%	14,5%
Quality of provision of electronic administrative services	Score	0	1	2	3	4	5
	Survey data	5,0%	6,1%	15,1%	35,2%	30,7%	7,8%
Level of use of electronic document flow (including electronic signature)	Score	0	1	2	3	4	5
	Survey data	2,2%	11,2%	15,6%	36,3%	25,7%	8,9%
Quality of e-procurement system	Score	0	1	2	3	4	5
	Survey data	8,9%	5,0%	11,7%	35,2%	29,1%	10,1%

Source by materials of Electronic Dnipropetrovsk region 2020–2022, 2019.

5. CONCLUSIONS

The peculiarities of country's digital society development in one of the industrialized regions of Ukraine have been determined on the example of research of territorial communities' electronic readiness.

Experts from three sectors of society – authority, business, civil society – took part in the research. The expert survey was conducted using the Delphi method. The roadmap of the further development of information society in the region was presented in the form of Dnipropetrovsk region's informatization program "Electronic Dnipropetrovsk region 2020–2022".

The results of the research showed important problems and directions for further work on the development of digital economy and digital society in the region, such as:

- the level of access to the high-speed Internet in rural areas is far behind urban indices. The situation can be characterized as digital inequality, which leads to a restriction of population's access to e-services and is an obstacle to the development of the e-government in the local government. Experts see the solution to the issue in the dissemination of 4G mobile network access technologies through public-private partnerships.

- along with the great desire of population to develop the e-democracy, there is a problem of improper work of relevant digital resources. Another actual problem is the lack of necessary knowledge and skills among the representatives of the civil society and population in general.
- e-Government is developing actively in terms of technology and software, but its efficiency is still very low. By experts' opinion, it is caused by the low level of digital competencies of public officials and this requires special training programs and retraining of employees of public administration bodies.

REFERENCES

- Dnipropetrovsk Region Council* (2019). Access on the internet: <https://oblrada.dp.gov.ua/rishennia/sklikannia-7/xviii-sesiya> [in Ukrainian].
- Dufva, T., Dufva, M. (2019). Grasping the future of the digital society. *Futures*, No. 107.
- UN E-Government Survey 2018*. Access on the internet: <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018>.
- Dutton, W.H. (2003). Information Society. *Encyclopedia of International Media and Communications*.
- E-Government Development Index (2018). *UN E-Government Survey 2018*. Access on the internet: <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018>.
- Electronic Dnipropetrovsk region 2020–2022* (2019). Access on the internet: <https://rpi2020-22.dp.gov.ua/storage/app/sites/70/dridu/result%20ex.pdf>. [in Ukrainian].
- E-Participation Index (2018). *UN E-Government Survey 2018*. Access on the internet: <https://publicadministration.un.org/egovkb/en-us/About/Overview/E-Participation-Index>
- Etscheid, J. (2019) Artificial Intelligence in Public Administration. *Springer, Cham, vol 11685*.
- Floridi, L. (2014). The Fourth Revolution: How the Infosphere is Reshaping Human Reality. *Oxford University Press*, 248.
- ICT development index (2017). *Measuring the Information Society Report 2017*. Access on the internet: https://www.itu.int/en/ITU/Statistics/Documents/publications/misr2017/MISR2017_Volume1.pdf.
- Individuals frequently using the internet (2018). *Eurostat*. Access on the internet: <https://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tin00092>.
- Internet penetration in Ukraine, October (2019). *Factum Group Ukraine*. Access on the internet: https://inau.ua/sites/default/files/file/1910/dani_ustanovchyh_doslidzhen_iii_kvartal_2019_roku.pdf. [in Ukrainian].
- Mergel, I., Edelman, N., Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*, No. 36(4).

DOI: 10.7862/rz.2020.mmr.3

The text was submitted to the editorial office: December 2019.

The text was accepted for publication: March 2020.

Justyna LIPIŃSKA¹

"NO" SECURITY OF INFORMATION TECHNOLOGY

Using the Internet is inseparably connected with building the awareness of its users, hence the tasks that arise for a modern man in relation to information technologies, especially in terms of online threats. Children are particularly vulnerable. The most common threats include: contact with pornographic content, contact with violent materials, contact with pedophiles, internet addiction, contact with online cheaters, unconscious participation in illegal activities, financial consequences, unconscious disclosure of information. The purpose of the article was to indicate tasks for parents along with identification of dangerous situations affecting children's behavior. Readers will also learn about forms of sexual abuse of children on the Internet and methods of filtering Internet content. The adopted research method is a qualitative analysis supported by the retrospective analysis technique.

Keywords: information technologies, Internet threats, child pornography on the Internet.

1. TASKS OF MODERN MAN TOWARDS INFORMATION TECHNOLOGIES

The intensive development of information technologies is primarily the development of a global computer network – the Internet. It is practically an unlimited source of information, an ideal way to communicate and work. A contemporary man is no longer enough to just find and process information, the ability to select, eliminate and build a coherent image from elements scattered in many areas and resulting from information available on the web is becoming more and more important. The basic problem today is the ability to communicate with other people and the products of their civilization. Therefore, not only an adult but also a small child using Internet resources must acquire and consolidate, throughout their life, certain universal skills. Learning from network information resources is a basic skill of learning how to use Internet resources in technical and logical terms. This skill forces the network user to master more and more ways of communicating using online tools. Communication via the network is not the same as communication in the real world. It requires the acquisition of new language and non-language skills and skills. The third skill necessary to master is the ability to process information on the web. There is information chaos in the network, from which in order to “shell out” one should have ways to filter this information. To be able to possess these skills, it is a must for every human being in the “information society” to meet the tasks posed by information technology. In the “information society”, the focus is above all on openness to new technologies and thus the ability to use them efficiently and the ability to choose. These

¹ Professor Justyna Lipińska, PhD, The Faculty of Management and Command, The War Studies University, I. gen. A. Chruściela „Montera” 103, 00-910 Warszawa-Rembertów; e-mail: j.lipinska@akademia.mil.pl. ORCID: 0000-0001-8233-6971.

tasks become indispensable features of a full and conscious member of the information society. They change our skills but above all change our mentality. For many people, these are great challenges that not only teachers, educators, but most of all parents have to face. These changes occur because children and adolescents require this from adults. In addition, the greater our awareness of the tasks ahead of us, the less unpleasant events can be encountered by children and young people using the resources of the Internet. The competition that parents and teachers involuntarily enter does not tear up today only in the fight against the media but, or perhaps, primarily on the Internet. This internet network creates an environment that modern parents and teachers must learn. In order not to be afraid of him, you should understand them. That is why it is so important.

- realizing that parents and teachers cease to be the main source of information for children and young people,
- realizing that there is competition with the media and computer forms of education, and it is much more difficult than fighting other addictions,
- accepting the fact that the teacher and parent should take on a new role – a guide to the world of information,
- teachers and parents learning counseling in the learning process using new media (<https://szkolnictwo.pl/>).

2. THREATS ON THE WEB

When using the Internet, we are often not aware of the threats it may pose. Despite the fact that we hear about Internet pornography, pedophile gangsters or scammers who are prowling the Internet, it seems to us that this does not apply to us and our loved ones. This is usually due to our (parents and teachers) ignorance of network threats. Therefore, you should be especially attentive on the Internet, especially when children use it.

The purpose of these considerations is to make parents and teachers aware of the importance of teaching children appropriate behaviors, shaping their habits and being sensitive to the dangers of the network.

The most common threats to which children are exposed include:

- contact with pornographic content,
- contact with violent materials,
- contact with pedophiles,
- Internet addiction,
- contact with online scammers,
- unknowingly participating in illegal activities,
- financial consequences (e.g. use of dialers, i.e. programs connecting the computer to the Internet via numbers 0-700),
- unconscious sharing of information (e.g. card numbers, addresses, passwords) (Barabach, http).

Unlike the Internet, the judicial institutions have strictly defined limits of impact, which is associated with the existence of different definitions of illegal content in different countries. In accordance with the law in force in Poland, it is prohibited to publish:

- pornographic content involving a minor, pornographic content related to the presentation of violence or the use of an animal;

- content publicly promoting a fascist or other totalitarian state system or inciting hatred against national, ethnic, racial, religious differences or because of religious denominations;
- content that publicly insults a group of people or an individual because of their national, ethnic, racial, religious affiliation or because of their non-denominational status (<http://statystyka.policja.pl/st/kodeks-karny/>).

In addition, it is unlawful to publicly present pornographic content in such a way that it may impose its reception on a person who does not want it and to present pornographic content to a minor under 15 years of age or to provide him with items of this nature or to disseminate pornographic content in a manner that allows a minor getting to know them.

The vast majority of psychologists are of the opinion that frequent contact of minors with pornography has a profound, multidimensional and harmful effect on them. Pornographic content is a source of experience that surpasses young people's adaptability and provides them with pathological behavior patterns. They shape a distorted and negative image of the world, interpersonal relations (e.g. instrumental treatment of other people), perpetuate a false image of femininity and masculinity. As a result of contact with pornography, eroticism of the child's psyche and its premature sexual arousal, as well as an increase in the level of anxiety in the child, tension, attention deficit hyperactivity disorder, and the occurrence of neurotic and depressive symptoms may occur. The correlation between the frequency of contact with violence and hard pornography and the strength of their impact is well documented.

The more often children in preschool and school age come into contact with violence in films or games:

- the more often he violates the law in adolescence and adulthood;
- the more often the conflict with the law results from the use of violence, the more violent it is, especially when under the influence of alcohol;
- the more often he also uses it in his future family – towards his spouse and children;
- the greater the tendency towards alcoholism, promiscuity, trivialization of cruelty;
- even more so in adult life, women are willing to accept men's violence against themselves and incorporate elements of violence into sexual fantasies and behavior (Wortal Jana Pawła II Wielkiego - Pokolenie JP2, <http://www.jp2w.pl/pl/42118/>).

It is also worth mentioning a number of other threats and examples of dangerous content that children and young people surfing the Internet may encounter:

- cyberbullying - this is violence based on challenging, ridiculing, blackmailing or spreading compromising materials on the network using information and communication technologies (messengers, chats, websites, blogs, SMSs and MMSes). Gemius (2007) research shows that more than half of teenage Internet users in Poland, aged 12–17, have been the victims of any of the above acts of cyberbullying;
- grooming – is the seduction of children by adults via the Internet. “Cybercriminals” mainly use instant messengers and chats to establish a close contact with children. They try to convince children to talk about sex, which can be an introduction to the further trapping and harassment of the youngest users. An adult, often pretending to be the peer of his victim, gradually gains her trust, personal data, photos, and sometimes becomes a “good friend”. He urges the child to watch pornography and

insists on meeting in the real world. When a meeting occurs, the child is usually sexually abused and often becomes a victim of the porn industry;

- content promoting religious movements considered sect;
- content promoting anorexia and bulimia as a lifestyle, not a serious illness;
- content inciting suicide or self-harm;
- content promoting drugs and other stimulants – most often by emphasizing their supposedly healing qualities or indicating that they open man to spiritual reality (<https://www.enisa.europa.eu/publications...>).

3. DANGEROUS SITUATIONS AND BEHAVIOR OF CHILDREN

The appearance of a new medium in the child's life, which is the Internet, can affect his behavior and way of looking at the world. For children, the web is a place where they can find both entertainment and knowledge (although they will usually look for the first one). Here he can also meet new friends. Such versatility of the Internet, abundance of information, potential contacts may affect the child's behavior or even his development.

A very important task for a parent is to pay attention to the behavior of the child who uses a computer connected to the Internet. Sometimes, noticing unusual behavior can prevent unpleasant and even dangerous events. Typical behaviors that can be observed by the parent at home and the teacher at school include such behaviors as:

- the child often talks about a new friend that you have never heard of before,
- the child spends a lot of time on the Internet, and each parting with the computer causes him sadness or anger,
- the child begins to use words that are negatively marked – terms that are directly or indirectly related to violence or sex,
- the child becomes aggressive towards the environment,
- the child talks about his new idol – a super hero who e.g. defeated all enemies,
- the child is contemptuous of their friends who do not use the Internet,
- the child tells strange, imaginary, amazing stories in which the motive is fight or violence,
- the child asks questions related to spheres that have not been of interest to him so far (e.g. questions related to eroticism or sex) Pastuch, http).

4. FORMS OF SEXUAL EXPLOITATION OF CHILDREN ON THE INTERNET²

The internet is currently the favorite site for victims of pedophiles and other scammers. They often impersonate children using chats and instant messengers, which the youngsters love to hang out on. As a rule, a child is trustful and gullible and can be tempted to meet.

A review of the literature related to the dangers of the Internet for its youngest users allows the specification of basic phenomena associated with broadly understood sexual abuse. Those are:

- presenting pornographic material on the Internet,
- producing and presenting child pornography on the internet,
- use of websites by pedophiles for the purposes of communication and exchange of information,

² See: Raport Fundacji „Dzieci Niczyje”: *Pedofilia i pornografia dziecięca w Internecie* – Ł. Wojtasik.

- the use of websites by pedophiles to contact potential victims (<https://depot.ceon.pl/bitstream/handle/123456789/3651/...>).

In accordance with the laws of most countries, presenting pornographic material on the Internet under appropriate conditions is not prohibited. In practice, most of the security of pages containing such content is ineffective, which results in the wide availability of this type of material for the youngest users of the network. This is a serious problem, often raised in debates on the safety of children on the Internet. However, this issue goes beyond the subject of this article and will not be analyzed here. There are two basic threats associated with the phenomenon of child pornography on the Internet:

- (1) children may be involuntary recipients of pornographic content of this nature and
- (2) may also become the subject of pornographic films and pictures (Calcetas-Santos, 2001)

An indirect threat is also caused by the fact that watching child pornography by adults may stimulate them to engage in sexual activity with minors (Jenkins, 2001). The harmfulness of the reception of child pornography by children, and even more the use of children in porn business is obvious. The distinction in such cases of the guilty and aggrieved party seems to be beyond dispute. However, there is some controversy in the situation of the more and more frequently noted phenomenon of intentional access of children to child pornography and their collection of this type of material. According to experts, such behavior is often associated with the fact that the child remains in sexual relations with the adult or is encouraged to do so, and pornographic materials suggested by the perpetrator are to tame them in such a situation. Therefore, a child should be considered a victim rather than a perpetrator. The issue of minors collecting child pornography in circumstances other than those mentioned above is more difficult to resolve, but it is postulated that in no case should children be treated as adults as perpetrators (Taylor, 2002). From a technical point of view, child pornography distributed via the Internet takes the form of text, graphics or movies. Its dissemination takes place via popular network tools enabling data transmission. The popularity of child pornography on the web consists of the following factors (Calcetas-Santos, 2001):

- frequent and easy updating of resources,
- coverage not provided by any other media,
- much cheaper than printing them, publishing digital photos,
- the quality of digital photos and videos, which do not deteriorate over time and as they are sent to others,
- recipients,
- the anonymity of distributors of child pornography and the possibility of avoiding the legal consequences of their actions.

In addition to the wide availability of child pornography, the Internet enables pedophile environments (Spiegel, 2003):

- constant contact with other people interested in sexual exploitation of children,
- an opportunity to discuss your sexual preferences,
- the opportunity to exchange information on how to obtain victims,
- support for your sexual preferences,
- constant access to potential victims,
- the ability to impersonate a potential victim,

- ease of obtaining data on potential victims (e.g. home address, e-mail address, telephone number etc.),
- the possibility of establishing long-term Internet acquaintance for the purpose of subsequent sexual contact with minors.

Pedophile activities on the Internet can be individual or organized into structures known as pedophile rings. Pedophilic vertebrae operate by applying appropriate security measures to prevent access to the structure by unwanted persons. Due to the specificity of the Internet, membership in organized pedophile structures is geographically unlimited.

5. INTERNET CONTENT FILTRATION - CONCLUSIONS

The results of the tests carried out regarding Internet content filtering programs allow the formulation of several general conclusions:

- 1) filtering applications are not able to monitor all Internet content. Their design is based on static solutions, while the Internet is a medium that is constantly changing. Effectively, you can only filter a section of the global network. The main limitation is the multilingualism of websites – the quality of filtering depends, among others, on a set of fixed criteria (keywords), the number of which is practically unlimited,
- 2) filters are not able to intelligently recognize the context and graphics. Illegal or harmful content can be mislabeled, placed in a neutral context, or described using neutral keywords. At the same time, the filtering application can block educational portals or encyclopedias due to the fact that passwords related to human sexual development will be identified by it as prohibited content,
- 3) filtering programs do not sufficiently recognize the content of Web 2.0 – social networking sites, blogs, photoblogs and portals containing music and movie files,
- 4) most applications do not contain a list of blocked categories, which may make it difficult for administrators (parents, guardians, teachers) to configure the program, which is desirable for the good of the child,
- 5) it is good practice to create independent settings profiles for different users, which gives the administrator the opportunity to modify them (e.g. adjustment to the child's age) and allows him to better control the activity of individual users,
- 6) there is no universal, perfect technical solution that could replace a parent / teacher in the process of raising a child and learning to use the Internet carefully; in the absence of proper education, the effectiveness of the filtering application is significantly reduced – especially for older children,
- 7) the filtering program is not able to convince the Internet user to avoid dangerous or laid-back online behavior, because a young Internet user does not necessarily have to be aware of the scale of potential threats,
- 8) an important element of the filtering application is the correct description of the page blocking message, which should perform not only a deterrent but also an educational function.

Using filtering applications can help you better protect children from unwanted and unwanted content on the Internet. Parents should use filter programs and at the same time be aware of what content or people their child may encounter while surfing. That is why they have the greatest responsibility for the online education of children. Parents should accompany children in the process of learning the Internet, sensitizing them to threats, and teaching them responsible and ethical behavior. They can conclude a type of “contract” for

using the Internet with their child, which will be the basis for shaping good habits (examples of contracts can be found at www.dzieckowsieci.pl). Parents should not, however, interfere excessively in the way a child uses the web. It should also be remembered that the advantages of the Internet outweigh its disadvantages, and the child's curiosity is natural.

Effective protection of children and young people against harmful and illegal content requires support from government institutions, schools and internet service providers. On April 11, 2007, the Sejm adopted a new law, which provides, inter alia, introduction of regulations regarding the problem of protecting children against content that may pose a threat to their proper mental and moral development.

REFERENCES

Barabach, M., www.junior.dialog.

Calcetas-Santos, O. (2001). *United Nations Documents Index: April-June, Vol. 4, Edition 1, Part 2*.

<http://statystyka.policja.pl/st/kodeks-karny>.

<https://depot.ceon.pl/bitstream/handle/123456789/3651/Toczyski-Jak-bardzo-niebezpieczny-jest-internet-2008.pdf?sequence=1&isAllowed=y>.

<https://szkolnictwo.pl/>.

<https://www.enisa.europa.eu/publications/CyberBullying%20and%20Online%20Grooming>.

Jenkins, P. (2001). *Child Pornography on the Internet*, Access on the internet: http://www.ncdsv.org/images/COPS_Child-Pornography-on-the-Internet_5-2006.pdf.

Pastuch, J., www.junior.dialog.

Raport Fundacji „Dzieci Niczyje”: Pedofilia i pornografia dziecięca w Internecie – Ł. Wojtasik.

Spiegel, J. (2003). *Sexual Abuse of Males: The SAM Model of Theory and Practice*. NY: Brunner-Routledge.

Taylor, M. (2002). *The role of cognitive distortions in paedophilic offending: Internet and contact offenders compared*. Access on the internet: <https://www.tandfonline.com/doi/abs/10.1080/10683160601060564?scroll=top&needAccess=true&journalCode=gpcl20>.

Wortal Jana Pawła II Wielkiego – Pokolenie JP2, <http://www.jp2w.pl/pl/42118/>.

DOI: 10.7862/rz.2020.mmr.4

The text was submitted to the editorial office: March 2020.

The text was accepted for publication: March 2020.

Tareq LUBBADEH¹

EMOTIONAL INTELLIGENCE AND LEADERSHIP – THE DARK AND BRIGHT SIDES

Emotional intelligence (EQ), as any set of abilities or skills has two sides, bright and dark ones. A person can employ their social abilities and high emotional skills for prosocial behavior or could use it in maladaptive ways to manipulate others to achieve self-centered outcomes. The current paper explores the relationship between emotional intelligence (EQ) and leadership through a literature synthesis. It discusses the dark side of emotional intelligence, the negative aspects of emotional intelligence. It also provides an overview of emotional intelligence and leadership concepts, and discusses the three primary constructs of emotional intelligence, their augmentation to the theory. Finally, it closes with hypothetical synopses of the leader's usage of emotional intelligence.

Keywords: Emotional intelligence, leadership, dark side, prosocial behavior.

1. INTRODUCTION

For ages life has been saturated with requests that required not only mental and physical abilities but also social and emotional capabilities. Emotional intelligence is one of the recent theories that have appeared in the field of management and as one of the most modern types of intelligence in the field of psychology.

After the publication of the best seller book *Emotional Intelligence* by Daniel Goleman (1995), the concept has become an influential theory that captivated the attention of various scientific fields, including management (Bar-On, 2006). According to Golman (1995), the cognitive intelligence quotient (IQ) contributes only by 20 percent of the factors that influence and direct success in life, while the other 80 percent relates to additional factors that the individual has, including the emotional intelligence (Goleman, 1995).

The concept of leadership is one of the most well-known principles of human sciences with an administrative nature. Leadership is a social role presented by the leader throughout its interaction with other members of the group (Kerr et al., 2006). Where the leader provides the guidance and direction for the individuals to achieve the group's goal and the leader is responsible for understanding the emotions of individuals and what has a touch on their behavior, and do what he can to monitor these emotions and regulate them (Kerr et al., 2006). Here the good role of emotional intelligence emerges between

¹ Tareq Lubbadah, Ph.D. candidate, at the University of Pécs, Faculty of Business and Economics, University of Pécs, Pécs, Rákóczi út 80, 7622, Hungary; e- mail: Tareq.Lubbadah@yahoo.com; ORCID: 0000-0002-8118-8775.

the quintessential skills that provide the leader with the ability to manage these emotions positively.

On the other hand, some experts and researchers are debating about the shady side of emotional intelligence. A person can employ their social abilities and their high emotional intelligence to dominate the perceptions of others, manipulate them, guide them to the wicked path, or use those skills to advance at the cost of others (Kilduff, Chiaburu and Menges, 2010; Côté et al., 2011; Nozaki and Koyasu, 2013; Austin et al., 2014; Chamorro-Premuzic and Yearsley, 2017).

Accordingly, this research aims to canvass the relationship between emotional intelligence and leadership, to obtain a more profound understanding of both terms, to investigate the leader's usage of EQ and to what extent the EQ plays a role in the success of leaders. In addition, the paper looks into the dark side of the EQ the negative aspects of emotional intelligence. Thus, the present article offers an overview of the idea of emotional intelligence and leadership by reviewing the most relevant previous literature.

The paper is formed as follows. Within the first section, we endeavor to wage an overview of the emotional intelligence concept, definition, and the most influential models. Follow this the relationship between the two concepts. Furthermore, we explore the dark side of emotional intelligence — finally, Conclusion, contribution, and possible future research studies.

2. WHAT IS EMOTIONAL INTELLIGENCE?

The concept of emotional intelligence is one of the significant theory that captivated the attention of scientists and scholars (Mayer, Dipaolo and Salovey, 1990; Goleman, 1995; Mayer and Salovey, 1997; Goleman, 1998; George, 2000; Petrides and Furnham, 2001; Bar-On, 2004, 2006; Singh, 2006). Scientists and researchers have presented multiple definitions and various models of emotional intelligence since its inception. The areas of agreement between these definitions and models are more than the differences; however, a number of those definitions have been emphasized on a set of abilities, while other explanations have been stressed on a set of personality traits, social, and emotional skills.

In 1920, Edward Thorndik laid the earliest seeds of this theory when he suggested that humans possess different sorts of intelligence, one of them called “social intelligence”, and defined it as the ability to understand and interpret one's own and others' emotions and behavior so that they can function effectively in human relations (Salovey and Mayer, 1990; Singh, 2006). Later, Howard Gardner (1983), dropped the traditional concepts of intelligence, in his book *Multiple Intelligences* when he developed the theory of multiple intelligence to comprises two types of personal intelligence; the interpersonal (social), and intrapersonal (emotional) intelligence, which is equally essential to the typical type of intelligent (Cherniss, 2001; Bar-On, 2006). Then, Salovey and Mayer (1990), who initially coined the term of “Emotional Intelligence” to express emotional characteristics; this was the first use of this concept, which later began to spread among interested scholars (Salovey and Mayer, 1990). Salovey and Meyer define emotional intelligence as: “subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions” (Salovey and Mayer, 1990).

Mayer and Salovey assume that every task in life is abundant with emotional information, and this information must be processed to guide our thought and behavior. Later Meyer and Salovey (1997) revised their definition of emotional intelligence and divided into four abilities: Perceiving Emotion, Integrating Emotion, Understanding Emotions, and Managing Emotions (Mayer and Salovey, 1997).

According to Goleman (1995), emotional intelligence is a collection of skills and abilities that enable an individual to understand his or her feelings and those of others, which are necessary for our interaction with others and to success in professional communications (Goleman, 1995). While Bar-On (1997), defines Emotional-Social Intelligence as: “a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands” (Bar-On, 2006). Bar-On refers to emotional intelligence as Emotional Social Intelligence (ESI), as his definition combines both psychological and social competencies. George (2000) defined emotional intelligence as: “the ability to perceive feelings through thinking, understanding emotional knowledge and organizing emotions so that the individual can influence the feelings of others” (George, 2000).

Many definitions have addressed emotional intelligence in the recent period; these definitions agreed on one or more of the following:

1. The ability to understand, harmonize, and display one's feelings and emotions.
2. The ability to recognize, interpret, and communicate with other people's feelings and emotions.
3. Employing these capabilities can help the individual to manage and control impulses and stress, resolving interpersonal and intrapersonal complexities, and make the appropriate decisions.

Thus, an emotionally intelligent person is more able to cope with the variations that affect their surroundings more equipped to succeed in personal relationships and to build a social support network, compared to other (Mayer et al., 2001).

3. EMOTIONAL INTELLIGENCE MODELS

Researchers and scholars have produced four primary models of emotional intelligence, each with its novel forms and instruments for measuring EQ. The models are: the ability EQ model (Salovey and Mayer, 1990) which uses a self-assessment tool called the MSCEIT. Two mixed; models the Goleman model or the “competency model” (Goleman, 1995) that uses the 360-degree assessment Emotional and Social Competency Inventory (ESCI), and the Bar-on model (Bar-On, 1997, 2000) which uses the Emotional Quotient Inventory (EQi). The fourth model is the trait model or the “trait emotional self – efficacy” (Petrides and Furnham, 2001).

The main variation between the three models is whether the model focuses on a set of mental abilities or a set of personality traits. The ability model focuses on emotions themselves, while the EQ mixed model focuses on both emotions and personality traits as one (Mayer, Caruso and Salovey, 2000). In contacts, the trait model focuses on self-perceptions personality traits (Petrides, 2010).

3.1. The ability model

The ability model of emotional intelligence indicates that emotions provide the person with relevant information; the person will process the information, then benefit from it, and finally respond to them to cope with the problem or the tense situation more intelligently. Being aware of emotions makes our thinking smarter (Mayer et al., 2001; Mayer, Salovey and Caruso, 2004).

Mayer and Salovey conceptualized a four branch model to apprehend emotional intelligence as a cognitive ability; it presents four levels through which a person becomes emotionally intelligent (Mayer and Salovey, 1997).

The ability four-branch model comprised *perceiving emotions*: the person's ability to utilize his or her emotions or the emotions of others and combine these emotions into the thinking process to facilitate the performance of various tasks. *Using emotions*: refers to a person ability to utilize his or her emotions or the emotions of others and combine these emotions into the thinking process to facilitate the task. *Understanding emotions*: which is the ability to understand emotional language and identify complicated relationships among emotions, and the readiness to classify emotions, to determine their causes and outcomes. *Managing emotions*: the ability to compose compelling strategies for managing one's own and others' emotions to help in achieving the desired result, rather than being affected by it in unpredictable ways (Mayer, Salovey and Caruso, 2004; Mayer, Caruso and Salovey, 2016). In 2016, Mayer, Caruso, and Salovey updated the ability model; by introducing more significant areas of problem-solving to the ability model (Mayer, Caruso and Salovey, 2016)

Mayer et al. (1990), distinguished between the ability model and other models (mixed model), that these alternatives models combine a wide variety of non-ability and traits variables, as opposed to the ability, model, which focuses on actual abilities, perceiving, using, understanding, and managing emotions (Mayer, Caruso and Salovey, 1999).

3.2. Goldman's Competency Model

Daniel Goleman, a psychologist, and journalist, known best for his work on emotional intelligence. Goleman was the first to use the notion of emotional intelligence to business through his article (1998) in Harvard business review, "What makes a leader?" (Gayathri and Meenakshi, 2013).

Goleman's (1998) model of emotional intelligence outlines four branches. Each branch composes a variety of extensive competencies and skills that boost performance: the first two dimensions, *self-awareness*, and *self-management* described as personal Competence. *Social awareness* and *relationship management* described as social competencies. According to Goleman, these competencies are learned abilities that emerged from the fundamentals (Goleman, 1998).

The four-branch model comprised *self-awareness*, which is the ability to know what we are feeling, why we think this way, and how we react to those feelings. *Self-management* reflects the ability to manage our distressing emotions and impulses in practical ways. *Social awareness* refers to the ability to know, understand, and respond to other people's feelings. *Relationship management*, which means the ability to combine the first three branches to influence, inspire, and to manage conflict (Goleman, 1998, 2002).

The Goleman model differs from Salovey and Mayer's model of emotional intelligence is that he added several personality characteristics like Leadership, Collaboration, and Conscientiousness (Gayathri and Meenakshi, 2013).

3.3. Bar-On's Emotional Social Intelligence model

Bar-On introduced the first self-report measure of EQ the *Emotional Quotient Inventory* (*EQ-i*), which attempts to estimate emotional intelligence (Bar-On, 2006; Singh, 2006). Bar-On refers to EQ as the “Emotional Social Intelligence” (ESI), where it combines emotional and social competencies. The model outlines five key elements: *intrapersonal*, *interpersonal*, *adaptability*, *stress management*, and *general mood*; each one of these elements contains several skills and competencies. These skills and competencies focus on the potential for success (Bar-On, 2004).

Bar-On recognizes emotional intelligence as five non-cognitive competencies: *Interpersonal* (covering Empathy, Social Responsibility, and Interpersonal Relationship); *Stress Management* (covering Stress Tolerance and Impulse Control); *Adaptability* (covering Reality-Testing, Flexibility, and Problem-Solving); and *General Mood* (covering Optimism and Happiness) (Bar-On, 2006).

The distinction between the two models (Bar-On and Goleman), is that the Bar-On model includes stress management and general mood elements (Gayathri and Meenakshi, 2013).

3.4. The Trait model

The trait EI model or “trait emotional self – efficacy”, was developed by Petrides and Furnham (2000, 2001), as a type of measurement that defines the constitution of the model (Petrides and Furnham, 2000, 2001). According to Petrides and Furnham (2003), the Trait EI model refers to a constellation of emotion-related self-perceptions and dispositions, assessed through self-report (Petrides and Furnham, 2003).

Petrides and Furnham proposed a conceptual contrast between the ability model and the trait model of emotional intelligence. The critical foundation for this distinction between the two models is that the trait model involves emotion related to self-perceptions personality traits like “optimism”, measured through established self-report measures. In contrast, the ability model focuses on emotion-related to mental ability like “Using emotions” (cognitive ability), measured through maximum performance tests that have shown to be resistant to scientific standards (Petrides and Furnham, 2000, 2001, 2003).

Petrides views the Trait model as a construct composed of four significant scales: *Emotionality*, represent the self-efficacy in perception and interpretation of emotions. *Sociability*, represent the self-efficacy in interpersonal interactions, management, and regulation of others' emotions. *Well-being*, outline traits linked to personality dispositions. *Self-control*, consisting of self-efficacy in feeling, and impulse regulation (Kaliská and Kaliský, 2016; Petrides and Mavroveli, 2018).

Based on what has displayed above, we can state that emotional intelligence consists of a set of emotional and social skills. That provides the individual with the ability to understand self and others' emotions, which provide him with the aptitude to involve and interact with others and enable him to succeed on the personal, professional, and social level.

One of the most influential criticisms faces the theory of emotional intelligence is the multiplicity of methods and approaches that explain the EQ; there is not only one model that the researchers rely upon when studying this phenomenon, besides, the lack of agreement among researchers on the definition of emotional intelligence (Emmerling and Goleman, 2003).

4. EMOTIONAL INTELLIGENCE AND LEADERSHIP

Leadership is one of the most used concepts in which emotional intelligence has been correlated with (Higgs and Aitken, 2003; Kerr et al., 2006). In the domain of EQ and leadership, Daniel Goleman, consider as a pioneer in this field. He questioned the supremacy of intelligence quotient (IQ), through expanding the awareness of EQ importance as a component in leadership and organization success (Goleman, Boyatzis and McKee, 2002).

Golman (1995) suggested that EQ plays an indispensable role in the success of a person in the work environment, job performance, and leadership (Goleman, 1995). Goleman et al. (2002) used the idiom “primal leadership”, which indicates leading by emotion, the best leader is who can assist other people in reaching and staying in the most desirable emotional mood (Goleman, Boyatzis and McKee, 2002). According to Goleman et al. (2002), several studies have shown that the leader's feelings and emotions are contagious to the other in the group. If the leader is in an “upbeat” mood, people will catch that mood, become more confident about their ability and skill to perform, creativity improves, and decision-making improves. In contracts, if the leader in a “downbeat” mood, people will catch that mood, and performance goes down (Goleman, Boyatzis and McKee, 2002).

George (2000) suggested that EQ plays an essential role in leadership effectiveness. George explains that EQ heightens the leader's ability to solve, organize, and approach issues and opportunities that challenge them, their followers, and their organization. Specifically, George suggests that leaders high on emotional intelligence are more effective in influencing and understanding their followers' emotions, thereby gaining their support and responsiveness toward the organization's goals and objectives (George, 2000). Caruso et al. (2001) have also discussed the relationship between EQ and leadership effectiveness. The authors used the four branch model (the ability model), developed by Mayer and Salovey (1997), to ground the EQ role in expediting the work of an effective leader. For example, understanding emotions provide the leader with the ability to recognize the relationship between complicated feelings. Also, this ability offers the leader information on why people behave like this. Managing emotions, allows the leader to control his emotions and feelings, such as stress, fear, and joy (Caruso, Mayer and Salovey, 2001).

Gardner and Stough (2002), in their study, investigated the relationship between EQ and the leadership style (transformational, transactional, and laissez-faire). They surveyed 110 high- level managers. The study found a clear connection between transformational leadership and overall emotional intelligence, while no correlation found between emotional intelligence and transactional and a negative relationship between laissez-faire leadership and emotional intelligence has been obtained (Gardner and Stough, 2002).

Wong and Law (2002), in their article, developed a compact EQ measure that can be applied in management and leadership researches. Besides, they investigated the effects of EQ of the leader and follower on performance and satisfaction. The study found that the emotional intelligence of the leaders influences reimbursement and extra-role behavior of the followers. Nevertheless, the study reported no connection between the EQ of the leaders and the subordinate job performance, while the emotional intelligence of followers affects both job performance and satisfaction (Wong and Law, 2002).

In a different study, Rego et al. (2007) investigated the correlation between leader EQ and employee creativity. The study sample consisted of 138 top and middle managers, from 66 various businesses running in the EU. The exploratory study reached remarkable results, the most prominent of which is that the leader EQ explain significant variance in creativity dimensions. The research revealed that emotionally intelligent leaders operate in ways that inspire creativity among their followers (Rego et al., 2007). Likewise, Castro et al. (2012) conducted a study to investigate the connection between emotional intelligence and employee's creativity. The study sample consisted of 7 leaders and 66 followers from the most significant healthcare organization operating in the Iberian Peninsula. The study reached several results; the most important of the results were; finding a positive relationship between the EQ of managers and the creativity of the employees. Also, they found a connection between creativity and emotional intelligence outlined in the self-encouragement and understanding of their own emotions (Castro, Gomes and de Sousa, 2012).

Furthermore, Bratton et al. (2011), examines the influence of elements of EQ, on the self-other agreement and leadership performance. The study sample consists of 146 managers and 1,314 subordinates working in a large international technology company in North America. The study reached some results, the most distinguish result of which is that the relationship between EQ and leader performance is most reliable for managers who underestimate their leadership abilities. Moreover, it seems to be a negative correlation between EQ and leader performance for managers who exaggerate their leader capabilities (Bratton et al., 2011). Finally, Rosete and Ciarrochi (2005) examined the relationship between emotional intelligence and leadership effectiveness, among a sample of 41 senior managers. The study used the Ability-based measure (MSCEIT) to evaluate EQ, and an objective measure of performance and a 360 assessment to assess leadership effectiveness. The study reported that higher EQ scores were correlated with more leadership effectiveness (Rosete and Ciarrochi, 2005). Olakitan (2014) also examined the influence of emotional intelligence on the leader's perceived effectiveness. The study administered on a purposeful sample of 232 respondents from an organization in Lagos city. The most significant findings of the research were that leadership is a critical factor in the success or failure of an organization. The study reported a positive relationship between EQ and perceived leadership effectiveness and outcomes. Furthermore, the study implies that leaders who use EQ to establish well-built relationships also do well in their jobs (Olakitan, 2014).

All in all, these studies demonstrate luculent evidence of the advantages of higher EQ to leadership efficiency. Developing EQ skills among leaders could have a significant influence on performance, decision-making, employee support, and relationships within the organization.

5. THE DARK SIDE OF EMOTIONAL INTELLIGENCE

In contrast, to the scrutinize view of EQ as definite clout in work, health, and relationships. (Goleman, 1995, 1998; George, 2000; Caruso, Mayer and Salovey, 2001; Cherniss, 2001; Gardner and Stough, 2002; Goleman, Boyatzis and McKee, 2002). Researchers have neglected the possibility that EQ can have a dark side. Simultaneously, a growing number of researchers are debating about the potential that people who have high EQ can employ their abilities in more malignant and dishonest ways, to meet their

interests, even at the expense of others (Côté et al., 2011; Austin et al., 2014). For example, Kilduff et al. (2010) suggested that people with high EQ – in case of limited resources in an organization – are likely to use their high EQ to promote their best interests or even to manipulate others for strategic outcomes. Kilduff et al. (2010) hypothesized four dark-side approaches based on (Salovey and Mayer) four branches' ability model, which can be used by high EQ people. For example, disguising and expressing emotions for personal gain, here, a leader can frame his self-interests action or goal as indifferent action (Kilduff, Chiaburu and Menges, 2010). Likewise, Nozaki and Koyasu (2013), in their empirical study, investigated how trait EQ linked to interacting with ostracized others who try reprisal. They found that people with high interpersonal EQ try to manage others' emotions based on their own goals (Nozaki and Koyasu, 2013). By the same token, Nagler et al. (2014) investigated the relationship between socio-emotional intelligence (SEI) – consist of social intelligence, emotional intelligence, and various ability and traits- and the Dark Triad (narcissism, Machiavellianism, and psychopathy) that would predict emotional manipulation. The study found that the dark triad narcissism could expedite the use of EQ skills to manipulate other people's emotions. However, a mixed association with psychopathy and negative with Machiavellianism and EQ. Also, the study posits that EQ skills and ability can be used for wicked intentions (Nagler et al., 2014). Adam Grant (2014), in his essay for *The Atlantic*, “The Dark Side of Emotional Intelligence” explained that the person who could understand people's emotions could use it for evil or ethical purposes. He provides an example of the dark EQ in his article about “one of the most influential leaders who spent years studying the emotional effects of his body language. Practicing his hand gestures and analyzing images of his movements allowed him to become' a spellbinding public speaker,' 'His name was Adolf Hitler”. Through this ability to display emotions, he was able to fascinate his followers so much that they stopped thinking and just responded. According to Grant, a person can utilize his social abilities and their high emotional intelligence to dominate the feelings of others, manipulate them, guide them to the wrong path, or use these skills to advance at the expense of others (Adam, 2014).

Similarly, Davis and Nichols (2016), in their article, present a survey of EQ literature to examine whether the trait and ability EQ models contribute to adverse intrapersonal (e.g., Stress reaction) and interpersonal (e.g., emotional manipulation) outcomes. The study found adverse outcomes across multiple contexts (academic, health, and professional life). However, these results were indirect and frequently connected to the personality traits of the person (Davis and Nichols, 2016). Uniquely, Chamorro-Premuzic et al. (2017), in their article “The Downsides of Being very Emotionally Intelligent”, they discuss several drawbacks of having high emotional intelligence. According to the authors, various EQ traits are associated with a lower level of creativity and innovation at work. Creativity has long been attached with attributes that describe low emotional intelligence, such as artistic temperament, incompatibility, aggressive impulse. Also, people who allow their feelings and emotions to interfere with their judgments substantially will not be able to deliver or receive negative feedback for concerns of hurting the feelings of others. The researchers also added that the shady side of emotional intelligence could assist individuals with wicked ends into manipulating other people's emotions in a way that serves their agenda (Chamorro-Premuzic and Yearsley, 2017).

These theoretical and empirical studies argue the existence of dark emotional intelligence. EQ is like any set of skill and ability – have two faces – can be used to

advance oneself and others or can be directed or used for corrupt and selfish intentions. Also, leaders like everybody can eff a dark or personal agenda. Here the leader can utilize his emotional skills to create a subordinate relationship with employees and gain their support to accomplish self-centered goals. This is something that must bear in mind.

6. CONCLUSION

Drawing from the present review of emotional intelligence and leadership, we can hypothesize two scenarios of the leader's usage of EQ. The best scenario is that a leader high on emotional intelligence can translate and actualize the reactions and emotions of the employees, and its upshot on their behavior while keeping these emotions under control. Thus, he will be able to maintain the harmony between the employees, energies them, and encourage them. Besides, this will help him to build the necessary trust between the employees. The EQ of the leader plays an essential role in influencing his relationship with the employees, affecting their level of performance, their level of motivation, and their interaction in the work environment. Having a high EQ will help the leader to create an interactive environment, employee commitment, and direct each employee into a more productive and engaging environment.

On the other hand, a leader with high EQ might not be able to direct these skills in the aspired way. For example, his over sensitivity to employees' emotions might make it harder for him to make decisions that touch the employees' feelings. Another example, being too involved with the employee's emotions, could make the leader feel more responsible for the employees' emotions, which might increase his stress level.

The worst scenario, a leader with exalted EQ, utilizes his emotional skills for immoral conduct or morals that pour in his advisable interest. The leader, in this case, can manipulate his employee's emotions to do certain things such as doing unethical practice in his favor. However, the researcher believes that the use of emotional intelligence skills in evil or functional purposes depends on the traits and characteristics of the person himself (dark personality), not on the assumption that he has a high emotional intelligence or not.

The current paper value stems from exploring and providing an understanding of the relationship between EQ and leadership from a conceptual point of view. The paper also presents a thorough examination of the most prominent models of EQ (ability, mixed and traits models), and the differences between these models. Additionally, the study highlighted what is known as the '*dark side*' of EQ and its potential adverse effects on leadership.

Based on the current examination, distinct areas of prospective research have been identified. Various researchers have emphasized the importance of EQ in leadership, but these researchers did not address what considered a suitable level of EQ for selecting effective leaders the leader. Furthermore, investigation in the area of the dark side of EQ should be done, such as how the shady side of EQ manifests, or why some leaders with high EQ may decide to use it in adverse ways. Finally, throughout the research, the researcher developed an interest in investigating the relationship between the dark side of EQ and job burnout where the majority of studies investigated the role of EQ in buffering the negative effect of job burnout and stress (e.g.(Mérida-López, Extremera, 2017; Szczygiel Mikolajczak, 2018)) while non-investigated the EQ as a source of burnout.

REFERENCES

- Adam, G. (2014). *The Dark Side of Emotional Intelligence*, *The Atlantic* [Access: 28.03.2018]. Access on the internet: <https://www.theatlantic.com/health/archive/2014/01/the-dark-side-of-emotional-intelligence/282720/>.
- Austin, E.J. et al. (2014). *Associations of the managing the emotions of others (MEOS) scale with personality, the Dark Triad and trait EI*. "Personality and Individual Differences". Elsevier Ltd, 65. DOI: 10.1016/j.paid.2014.01.060.
- Bar-On, R. (2004). *The Bar-On Emotional Quotient Inventory (EQ-i): rationale, description and summary of psychometric properties* [in:] Geher, G., ed., *Measuring emotional intelligence: Common ground and controversy*. Nova Science Publishers.
- (2006). *The Bar-On model of emotional-social intelligence (ESI)*. "Psicothema", No. 18(Suppl).
- Bratton, A.V.K. et al. (2011). *The impact of emotional intelligence on accuracy of self – awareness and leadership performance*. "Leadership & Organization Development", No. 23(2). DOI: 10.1108/01437731111112971.Made.
- Caruso, D.R., Mayer, J.D., Salovey, P. (2001). *Emotional Intelligence and Emotional Leadership* [in:] Riggio, R.E., Murphy, S.E., Pirozzolo, F.J., eds, *Multiple Intelligences and Leadership*. New Jersey: Taylor & Francis.
- Castro, F., Gomes, J., de Sousa, F.C. (2012). *Do Intelligent Leaders Make a Difference? The Effect of a Leader's Emotional Intelligence on Followers' Creativity*. *Creativity and Innovation Management*, No. 21(2). DOI: 10.1111/j.1467-8691.2012.00636.x.
- Chamorro-Premuzic, T., Yearsley, A. (2017). *The Downsides of Being Very Emotionally Intelligent*. "Harvard Business Review Digital Articles".
- Cherniss, C. (2001). *Emotional Intelligence and Organizational Effectiveness* [in:] Goleman, D., Cherniss, C., eds, *The Emotionally Intelligent Workplace*. San Francisco: Jossey-Bass.
- Côté, S. et al. (2011). *The Jekyll and Hyde of Emotional Intelligence: Emotion-Regulation Knowledge Facilitates Both Prosocial and Interpersonally Deviant Behavior*. "Psychological Science", No. 22(8). DOI: 10.1177/0956797611416251.
- Davis, S.K., Nichols, R. (2016). *Does Emotional Intelligence have a "Dark" Side? A Review of the Literature*. "Frontiers in Psychology", No. 7(8). DOI: 10.3389/fpsyg.2016.01316.
- Emmerling, R.J., Goleman, D. (2003). *Emotional Intelligence: Issues and Common Misunderstanding*. "Issues and Recent Developments in Emotional Intelligence", No. 1(1). Access on the internet: <http://www.eiconsortium.org>.
- Gardner, L., Stough, C. (2002). *Examining the relationship between leadership and emotional intelligence in senior level managers*. "Leadership & Organisation Development Journal", No. 23(2). DOI: 10.1108/0143773021041919.
- Gayathri, N., Meenakshi, K. (2013). *A Literature Review of Emotional Intelligence*. "International Journal of Humanities and Social Science Invention", No. 2(3).
- George, J.M. (2000). *Emotions and leadership: The role of emotional intelligence*. "Human Relations", No. 53(8). DOI: 10.1177/0018726700538001.
- Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. New York: Bantam Books.
- (1998). *Working with emotional intelligence*. New York: Bantam Books.
- (2002). *An EI-Based Theory of Performance* [in:] Goleman, D., Cherniss, C., eds, *The Emotionally Intelligent Workplace*. San Francisco: John Wiley & Sons.

- Goleman, D., Boyatzis, R., McKee, A. (2002). *Primal leadership: realizing the power of emotional intelligence*. Boston, Mass: Harvard Business School Press.
- Higgs, M., Aitken, P. (2003). *An exploration of the relationship between emotional intelligence and leadership potential*. "Journal of Managerial Psychology", No. 18(7–8). DOI: 10.1108/02683940310511890.
- Kaliská, L., Kaliský, J. (2016). *The Potential of Emotional Intelligence in Personality Space*. "The New Educational Review", No. 46(4). DOI: 10.15804/tner.2016.46.4.22.
- Kerr, R. et al. (2006). *Emotional intelligence and leadership effectiveness*. "Leadership and Organization Development Journal", No. 27(4). DOI: 10.1108/01437730610666028.
- Kilduff, M., Chiaburu, D.S., Menges, J.I. (2010). *Strategic use of emotional intelligence in organizational settings: Exploring the dark side*. *Organizational Behavior*. Elsevier Ltd, 30(C). DOI: 10.1016/j.riob.2010.10.002.
- Mayer, J.D. et al. (2001). *Emotional Intelligence as a Standard Intelligence*, "Emotion". DOI: 10.1037//1528-3542.1.3.232.
- Mayer, J.D., Caruso, D.R., Salovey, P. (1999). *Emotional intelligence meets traditional standards for an intelligence*. "Intelligence", No. 27(4). DOI: 10.1016/s0160-2896(99)00016-1.
- (2000). *Models of emotional intelligence* [in:] Sternburg, R.J., ed., *Handbook of intelligence*. Cambridge: Cambridge University Press.
- (2016). *The Ability Model of Emotional Intelligence: Principles and Updates*. "Emotion Review", No. 8(4). DOI: 10.1177/1754073916639667.
- Mayer, J.D., Dipaolo, M., Salovey, P. (1990). *Perceiving Affective Content in Ambiguous Visual Stimuli: A Component of Emotional Intelligence*. "Journal of Personality Assessment", No. 54(3/4). DOI: 10.1080/09540250600667892.
- Mayer, J.D., Salovey, P. (1997). *What Is Emotional Intelligence?* [in:] Salovey, P., Sluyter, D.J., eds, *Emotional development and emotional intelligence: Educational implications*. New York: Basic Books.
- Mayer, J.D., Salovey, P., Caruso, D.R. (2004). *Emotional Intelligence: Theory, Findings, and Implications*. "Psychological Inquiry", No. 15(3). DOI: 10.1207/s15327965pli1503_02.
- Mérida-López, S., Extremera, N. (2017). *Emotional Intelligence and Teacher Burnout: A Systematic Review*. "International Journal of Educational Research". Elsevier, 85(July). DOI: 10.1016/j.ijer.2017.07.006.
- Nagler, U.K.J. et al. (2014). *Is there a "dark intelligence"? Emotional intelligence is used by dark personalities to emotionally manipulate others*. "Personality and Individual Differences". Elsevier Ltd, 65(1). DOI: 10.1016/j.paid.2014.01.025.
- Nozaki, Y., Koyasu, M. (2013). *The relationship between trait emotional intelligence and interaction with ostracized others' retaliation*. "PLOS ONE", No. 8(10). DOI: 10.1371/journal.pone.0077579.
- Olakitan, O.O. (2014). *Emotional Intelligence and Perceived Leadership Behaviour Effectiveness in Organizations*. "International Journal of Humanities and Social Science", No. 4(2).
- Petrides, K.V, Furnham, A. (2000). *On the dimensional structure of emotional intelligence*. "Personality and Individual Differences", No. 29(2). DOI: 10.1016/S0191-8869(99)00195-6.
- (2001). *Trait Emotional Intelligence: Psychometric Investigation with Reference to Established Trait Taxonomies*. "European Journal of Personality", No. 15(6). DOI: 10.1002/per.416.

- (2003). *Trait Emotional Intelligence: Behavioural Validation in Two Studies of Emotion Recognition and Reactivity to Mood Induction*. "European Journal of Personality", No. 17(1). DOI: 10.1002/per.466 Trait.
- Petrides, K.V., Mavroveli, S. (2018). *Theory and Applications of Trait Emotional Intelligence*. "Psychology", No. 23(1).
- Petrides, K.V (2010). *Trait Emotional Intelligence Theory*. "Industrial and Organizational Psychology", No. 3(2). DOI: 10.1111/j.1754-9434.2010.01213.x.
- Rego, A. et al. (2007). *Leader Self-reported Emotional Intelligence and Perceived Employee Creativity: An Exploratory Study*. "Creativity and Innovation Management", No. 16(3). DOI: 10.1111/j.1467-8691.2007.00435.x.
- Rosete, D., Ciarrochi, J. (2005). *Emotional intelligence and its relationship to workplace performance outcomes of leadership effectiveness*. "Leadership and Organization Development Journal", No. 26(5). DOI: 10.1108/01437730510607871.
- Salovey, P., Mayer, J.D. (1990). *Emotional Intelligence*. "Imagination, Cognition and Personality", No. 9(3). DOI: 10.2190/dugg-p24e-52wk-6cdg.
- Singh, D. (2006). *Emotional Intelligence at Work: A Professional Guide*. 3th ed. New Delhi: New Delhi Sage Publications. DOI: 10.1017/CBO9781107415324.004.
- Szczygiel, D.D., Mikolajczak, M. (2018). *Emotional Intelligence Buffers the Effects of Negative Emotions on Job Burnout in Nursing*. "Frontiers in Psychology", No. 9 (December). DOI: 10.3389/fpsyg.2018.02649.
- Wong, C., Law, K.S. (2002). *The effects of leader and follower emotional intelligence on performance and attitude: An exploratory study*. "The leadership quarterly", No. 13(3). DOI: 10.1016/S1048-9843(02)00099-1.

DOI: 10.7862/rz.2020.mmr.5

The text was submitted to the editorial office: February 2020.
The text was accepted for publication: March 2020.

Piotr MAKOWSKI¹

IDENTIFICATION OF COMPONENTS OF OPERATIONAL RISK GENERATED BY INTERNAL FACTORS IN THE COMPANY

The article is devoted to the issues of identifying the components of operational risk in the company, the source of which are the threats caused by internal factors, with attention paid to the possibility of improving the company's internal control system and internal audit in the implementation of the tasks of identifying the risk in question by proposing an additional source of information about adverse events in the form of a system of anonymous individual employee reports. Conclusions from pilot studies carried out among the managerial staff of selected companies were also presented, concerning the conditions necessary to achieve a possible success of implementation of such a system in companies where its functioning is considered necessary.

Keywords: operational risk, audit, internal control.

1. INTRODUCTION

The management of a company usually requires making decisions in conditions of certainty, measurable uncertainty (risk) and uncertainty (in the strict sense – not measurable), whose aim is to achieve the assumed objectives resulting from the adopted strategy and its mission. The assessment of the significance of the impact exerted by a portion of autogenic threats on the achievement of these objectives involves the assessment of an important component of operational risk. The very identification of this risk, which is the task of the company's managerial staff, increases situational awareness, necessary for the implementation of the company management process. Regardless of the applied standards of risk management, each company needs to develop its own methods and tools to identify this risk, which are tailor-made to some extent. It can be assumed that in companies where tasks related to operational risk management are carried out, there exist and are used key risk indicators (KRI) in order to provide early warning about the degree of probability of materialisation of known threats in different areas of company's functioning. They are used to monitor risk factors and the state of protective barriers to prevent increased exposure of the company's potential to threats. Moreover, there are known symptoms which are precursors of unacceptable negative phenomena, so called key performance targets – KPT, which prove the need to implement corrective actions.

¹ Professor Piotr Makowski, PhD, Faculty of Management of Command, War Studies University, 00-910 Warsaw, Al. gen. Antoniego Chruściela „Montera” 103, e-mail: makowski.p.j@gmail.com; ORCID: 0000-0002-3045-3495.

Whereas the development of companies forces the implementation of widely understood changes. They also determine the level of operational risk. Taking into account changes is an important challenge for risk management entities in a company. A necessary condition for effective assessment of operational risk in such situations is to provide current, comprehensive and objective information on the values defined by KRI and KPT allowing to draw conclusions on the level of operational risk, as well as on negative phenomena which, as a result of analyses, must be qualified to these categories.

The aim of this article is to present a proposal of a systemic way of using already known tools supporting management in companies to perform this identification, such as the internal control system and audit in connection with the results of the postulated system of anonymous individual employee reporting. The addressees of these proposals are medium and large companies, where it is possible to use them (in small companies it is difficult to keep the postulate of anonymity of notifications).

2. OPERATIONAL RISK, RISK IDENTIFICATION

“Operational risk is the risk of material and reputational loss and legal liability arising from inadequate or unreliable processes and their necessary resources (personal, material, informational and financial), and arising from disruptions resulting from internal and external threats” (Zawiła-Niedźwiecki, 2013).

Similarly, Michał Thlon (2016) believes that “Operational risk is treated as the possibility of incurring losses due to insufficient or defective systems, incorrect procedures and methods of operation, human errors, technical failures and external events”.

These definitions clearly define the internal factors of operational risk, while external events are less precisely defined. E.g. For example, Krzysztof Maderak (2010) includes losses resulting from natural occurrences such as: earthquakes, floods, hurricanes, but also criminal activities such as: terrorism, robbery, theft, vandalism, physical and virtual burglaries. The risk associated with these threats is the so-called “pure risk”, which can usually be insured or mitigated by using physical and technical safeguards. The field of interest of this article leaves only that part of the operational risk which is derived from internal factors, and its identification and mitigation is the responsibility of the company. It is worth noting that this part of the operational risk does not have to be solely pure risk. The introduced changes in companies are usually sources of both opportunities and threats, which generates the so-called “speculative risk”.

Risk identification is presented as the second stage of risk management in the division of this process proposed by Michał Thlon (2016). It is preceded by the stage of defining objectives. Assuming that defining the organization's objectives is the task of the organization's manager, it can be considered that they should be known to the risk managers. In order to identify risks effectively, it is more important to determine the horizon and context of risk assessment in the first stage of risk management, which takes into account a general example of a risk management scheme according to one of the known risk management standards compliant with the PN-ISO 31000 standard (2018, p.V, fig. 1), according to which risk assessment stages are preceded by determining scope context criteria. In risk assessment, on the other hand, the following stages are distinguished: risk identification, risk analysis and risk evaluation.

The location of risk identification as a stage of risk management shows that its aim is to create conditions for effective implementation of the next stage. As far as pure risk is concerned, this is well reflected by the following statement:

“The purpose of the risk identification is to compile a complete list of risks resulting from possible events which, depending on the circumstances, may create, prevent, limit, accelerate, delay or hinder achievement of a goal. Risk identification is a continuous activity, because the risk not detected on time or its factors may not only prevent the achievement of a goal, but also pose a threat to the organization” (Abgarowicz et al. 2015).

Similarly, according to Tadeusz T. Kaczmarek (2006) “...risk identification includes the identification of causes and sources of threats and circumstances that may contribute to failure to achieve a goal”.

The need to identify both pure and speculative risk is taken into account by the ISO:2018 standard: „The purpose of risk identification is to find, recognize and describe risks that might help or prevent an organization achieving its objectives. Relevant, appropriate and up-to-date information is important in identifying risks” (PN-ISO, 2018).

The definitions quoted reflect the material scope of the risk identification.

Looking at the risk identification from the executive side, it can be concluded that it concerns the collection of information on risk factors and symptoms² and, with regard to phenomena previously known for which KRI and KRT were defined, the identification of the intensity of these indicators in the company. In practice, the acquired information refers to widely understood inconsistencies in the procedures for the company-wide implementation of processes or facts (phenomena) that indicate a decrease in the quality of the obtained effects of these processes. Treating the risk identification as a stage of information security of the analysis stage, it needs to be noted that not always the acquired information is sufficient to define quantitative relationships between the causes and the forecasted effects, but it also needs to be pointed out that it allows to increase the situational awareness of decision-makers of a given company.

If a new symptom of a so-called “Top Event” is detected, both its possible causes and its possible consequences must be identified in the long term. A natural tool to organize the search for a solution is the so-called “event trees” and “error trees” or their combination in the so-called “Bow Tie” analysis. On the side of the causes, risk factors (threats), the state of preventive barriers, escalating factors and the state of barriers weakening their influence (so-called Escalation Factor Barriers) are analysed. On the side of the forecasted effects, possible consequences and the application of rational corrective barriers are analysed. The essence of this approach is illustrated in Figure 1. Whenever possible, efforts should be made to attribute specific values of the corresponding probabilities as **components of operational risk** to the individual consequences.

² A symptom of risk is to be understood here as observable phenomena, behaviours, of symptoms nature, which are precursors to possible future consequences associated with taking a risk, as opposed to risk indicators showing the intensity of the impact of a given risk factor on its level (KRI).

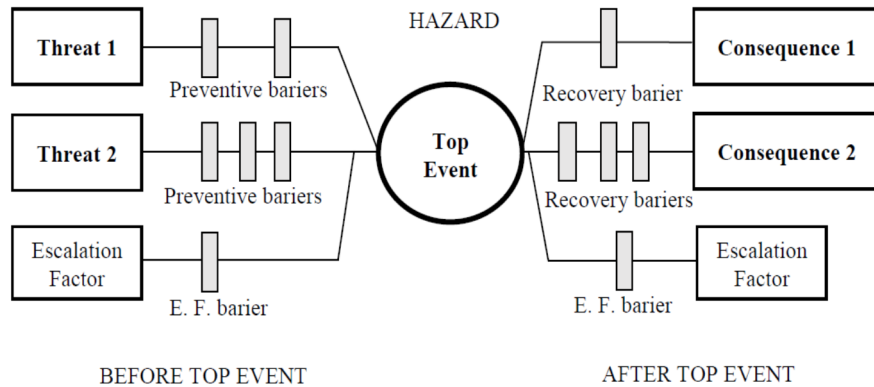


Fig. 1. Illustration of the essence of Bow Tie analysis
 Source: Own study based on (Fabbri, Struckl, Wood, 2005).

The Bow Tie diagrams may be subject to necessary updates and additions, including, where possible, the results of identifying the KRI values regarding risk factors (threats) and the KPT intensity that can be attributed to them.

The result of risk identification should be lists of risk factors, and the resulting cause-effect relationships, including KRI and KPT appropriate to the relevant processes taking place in the company and their stages.

3. SOURCES OF INFORMATION IN THE COMPANY ABOUT NEGATIVE PHENOMENA AND POSSIBILITIES OF THEIR USE

When distinguishing within the company: the management subsystem, the executive subsystem and the information subsystem that binds them together, it can be seen that the task of risk identification lies with the latter. In general, the information subsystem is responsible for collecting and distributing information, including meeting the needs of the management subsystem. Information about hazards and symptoms of risk has to be, to some degree, actively sought. It is obtained as a result of the day-to-day supervision of processes in the company by the management and all the entities employed in therein within the framework of their duties, as laid down in the internal regulations. This creates a kind of a system of mandatory reporting on the occurring events, including perceived risks (defined as an internal control system). It should be a sufficient source of information for company management about internal operational risk factors. Practice shows that it also requires periodic control of its operation and improvement, usually in the area of the quality of the performance of internal audit tasks. According to the definition developed by the Institute of Internal Auditors (2016):

„Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes”.

The results of the internal audit may therefore supplement the already existing knowledge of the identified components of the operational risk in the company with new content, thus increasing the situational awareness of the management and leaders.

In tab. 1. a comparison of internal auditing and internal control is presented as viewed by Kazimiera Winiarska (1997).

Table 1. Comparative characteristics of internal auditing and internal control

Term	Internal audit	Internal control
<i>Time criterion</i>	Supervision is effected occasionally and generally later than processes	Day-to-day supervision, continued and parallel in relation to processes
<i>Personnel criterion</i>	The supervising body is independent from the course of economic processes	Supervising body is directly or indirectly dependent from the course of processes
<i>Content-related criterion</i>	Revision is planned and effected through a special instruction	Control is automatically linked to the economic process or effected thorough special instruction
<i>Organizational criterion</i>	Directions derived from a revision are transferred directly or indirectly to the company's management	Directions derived from a control are transferred to the managers of the supervised processes.

Source: own translation based on (Winiarska, 1997).

The effectiveness of these tools in identifying operational risks can be improved by activating the entire staff of the company. Employee reports are rarely the source of information about negative phenomena. This results, among others, from the fact that informing the management about negative phenomena is often limited in scope and knowledge about them is sometimes held by a limited group, especially in organizations where the principles of fair assessment of the guilt degree ("Just Culture") have not been implemented in practice. This is confirmed by the results of pilot studies conducted using the diagnostic survey method, using the expert interview technique³. For example, in certified civil aviation organizations (according to the requirements of EU law) there is an obligation to maintain, in addition to the obligatory one, also an anonymous system of individual employee reports about observed irregularities threatening the safety of air operations. Therefore, in these organizations, the process of functioning of the rules ("Just Culture") has been going on for years and there, the system of anonymous reports, as it results from the research, is a source of a smaller stream of information about negative phenomena in comparison with the system of obligatory reports, but many of these reports are important in identifying new phenomena. Moreover, this system is an information supplement to facilitate the analysis of cause and effect relationships necessary for the

³ Preliminary research, of a pilot nature, was conducted among the managerial staff and employees of selected civil aviation organizations and companies of the Polska Grupa Zbrojeniowa (PGZ S.A.), in 2017–2019. The subject of the research concerned the determinants of success of anonymous systems and mandatory incident reporting in civil aviation organizations and the needs and possibilities of their implementation in PGZ S.A. and other companies. The research was not funded.

assessment of risk. According to experts from civil aviation organizations, the usefulness of this system is the result of the successive increase in awareness of their staff regarding the validity of these systems. In civil aviation organizations, this system is an effective source of information relevant for identifying safety risks, including operational risks.

In companies not obliged by law to apply these solutions, where the effects of unidentified operational risk are postponed, it is difficult to determine the existence of similar solutions, all the same, as declared by respondents in many PGZ S.A. companies, there is an occasional interface used to submit good employee ideas (in the form of a mailbox).

Information from the postulated system of anonymous individual submissions may increase the effectiveness of supervisory control by the managerial staff and its effectiveness in identifying phenomena important for specifying factors and symptoms of operational risk. Moreover, this information should also be taken into account when planning the scope of internal audits. Focusing auditors on verifying information on previously identified negative phenomena has the potential to increase the effectiveness of this tool in implementing the tasks related to the identification of internal operational risk factors, and to check the effectiveness of corrective actions taken previously.

4. SELECTED CONDITIONS FOR IMPLEMENTATION OF THE ANONYMOUS EMPLOYEE REPORTING SYSTEM

According to the opinion of the respondents, who are members of the management boards of the companies, management representatives and employees, the implementation of the anonymous individual reporting system in the companies is to be preceded by the implementation of “Just Culture” rules within the organizational culture, if such rules have not been implemented. These principles should be clearly defined, made public and tested in practice in a given company. This is a long-term process. The company postulates to organize a system of individual, anonymous employee reporting. Its functioning should be sanctioned in the company documents. This system should consist of an interface for the reporting entities, ensuring a high level of security of maintaining anonymity and a subsystem for analysing such reports. A proposal to respond to a report after acceptance and approval by the authorised managerial entity should be implemented.

In order to further disseminate the intentions of the entity reporting the incident, the respondents proposed to integrate the interface of this system with complaints and objections systems, good employee ideas etc. Information – reports concerning: threats, irregularities, dangerous events, which, after verification and analysis in e.g. the team dealing with risk management issues and after acceptance of the results of this analysis by the management, should be qualified as information archived in the company's database e.g. as risk indicators, KRI, in connection with risk factors or as symptoms of risk. Such a type of risk, being a component of operational risk identified in the context of its causes and symptoms, would facilitate its further monitoring within internal control and internal auditing. And linking it to a process or an organizational unit would constitute an element of the “operational risk map of the company”.

The involvement of employees is a necessary prerequisite for the effectiveness of the proposed system. Among the factors that give hope of increasing this involvement were those that ensure the satisfaction of the reporting entities:

- the speed and accuracy of the response to a report in line with “Just Culture” principles;
- ensuring free access for all workers to information about the content of a relevant report assessed as useful for identifying risks and information about preventive or corrective actions taken, treated as information about the disclosure clause: “for official use”;
- promoting awareness of the risk management methodology adopted among management and employees;
- development of observational worksheets for employees on previously identified disorderly phenomena;
- introduction of the principle of periodical rewarding of employees within organizational units with the best results in risk management, as opinioned by the management.

The second prerequisite is to appoint a competent interdisciplinary team of analysts, capable of selecting applications in terms of their usefulness in risk management, verifying the truthfulness of applications, and above all, using the most important of them to identify specific components of operational risk.

The respondents also expressed concerns about misguided use of the system of anonymous reports, e.g. for personal attacks. On the other hand, such events are signs of deterioration in the quality of human relations and their intensity may indicate the value of KPT in this component of operational risk.

The results of the analysis should be archived in the company's database for a limited period of time determined through evaluating their usefulness.

5. CONCLUSION

Based on the success of the proposed system of anonymous, individual employee reporting within civil aviation organizations, as an important tool in identifying risks to the safety of air operations, it can be concluded that similar solutions in other, medium and large companies should also yield successful results. The implementation postulates identified in the preliminary research are of general nature, in a way mitigating the process of implementation of the system in question and allowing to make the organizational cultures of companies without experience in using the system in question similar to the organizational cultures of civil aviation organizations. These postulates could be the basis for the formulation of problems and hypotheses within the framework of research relevant to this issue in relation to specific companies. If the above was effected, it would be a source of satisfaction for the author.

REFERENCES

- Abgarowicz, G. et. al. (2015), *Zarządzanie ryzykiem. Przegląd wybranych metodyk*, ed. D. Wróblewski. Józefów: Wydawnictwo CNBOP-PIB.
- Fabbri, L., Struckl, M., Wood, M. (2005). *Guidance on the Preparation of a Safety Report to Meet the Requirements of Directive 96/82/EC as Amended by Directive 2003/105/EC (Seveso II)*, European Communities.
- Kaczmarek, T.T. (2006), *Zarządzanie ryzykiem. Ujęcie interdyscyplinarne*. Warszawa: Difin.
- Maderak, K. (2010), *Ewolucja metod kwantyfikacji ryzyka*. „Miesięcznik Finansowy Bank”.

PN-ISO 31000:2018-08. Zarządzanie ryzykiem – wytyczne. Warszawa: PKN.

THE INSTITUTE OF INTERNAL AUDITORS (2016) [Access: 20.02.2018]. Access on the internet: https://www.iaa.org.pl/sites/default/files/definicja_kodeks_standardy_pl_en_2017_final_0.pdf.

Thlon, M. (2016), *Podstawy zarządzania ryzykiem operacyjnym*. Kraków: Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie.

Winiarska, K. (1997). Kontrola finansowo-księgową a auditing wewnętrzny. ZT No. 40. Warsaw: SKwP.

Zawiła-Niedźwiecki, J. (2013). *Zarządzanie ryzykiem operacyjnym w zapewnianiu ciągłości działania organizacji*. Kraków–Warszawa: Edu-Libri.

DOI: 10.7862/rz.2020.mmr.6

The text was submitted to the editorial office: March 2020.

The text was accepted for publication: March 2020.

Tetiana MIRZOIEVA¹
Olga TOMASHEVSKA²

ECONOMIC ASSESSMENT OF CONCENTRATION AND MONOPOLIZATION OF THE MARKET OF SPICES AND ESSENTIAL OIL PLANTS IN UKRAINE

The article is devoted to the study of modern economic trends in the Ukrainian market of spicy and essential oil plants. The measurement of market concentration is carried out using concentration coefficients (indices), Lind, Herfindahl – Hirschman, relative concentration, entropy, variance of market shares of firms, Gini and Hall-Tideman. To study the degree of dominance of the largest participants in the Ukrainian market of essential oil and spice plants, the rigidity of its oligopoly core was determined. The results obtained allow us to conclude that when developing a strategy for the development of medicinal crop production in Ukraine, special attention should be paid to the need to create a competitive environment in this industry.

Keywords: production of spice plants, production of essential oil plants, market concentration, market monopolization, oligopoly core.

1. INTRODUCTION

Nowadays the development of production of medicinal plants is rapidly increasing. A large group of medicinal crops that are distinguished in the scientific literature and practice is medicinal oil-bearing plants containing essential oils. They are called mixtures of volatile aromatic substances that are formed in plants and have the ability to be distilled with water vapor. The name comes from the XVIII century, when nothing was known about the chemical composition of these substances. They were called essential oils because they are volatile, like ether, and oils – because they are fat, lighter than water and do not mix with it. Although the term is not quite accurate, it is still used in the world. Nowadays essential oils are already included in thousands of medicines and attract more and more attention as a powerful means of preventing any diseases. It is not coincidentally that the world production of essential oils are constantly increasing and has already reached 250 thousand tons per year. Currently, the fields of application of essential oils

¹ Tetiana Mirzoieva, PhD, Prof. I.N. Romanenka Department of Economy of Enterprise, National University of Life and Environmental Sciences of Ukraine; e-mail: mirzoieva2018@ukr.net (corresponding author). ORCID: 0000-0002-0034-6138.

² Olga Tomashevska, PhD, Prof. I.N. Romanenka Department of Economy of Enterprise, National University of Life and Environmental Sciences of Ukraine; e-mail: tomashevska2011@ukr.net. ORCID: 0000-0002-2444-7259.

are: 1) food industry (mainly as food flavorings); 2) distillery industry; 3) tobacco industry (for flavoring tobacco products, flavorings and essences are used, which may include essential oils of peppermint, coriander, valerian, vanilla etc.); 4) soap industry; 5) pharmaceuticals (as medical supplies and medicines); 6) veterinary science; 7) perfumes and cosmetics (as components of perfumes and cosmetics); 8) aromatherapy; 9) household chemicals; 10) paint and varnish industry (as solvents); 11) production of rubber and plastics. The extremely wide use of essential oils obtained from essential oil plants is a strong argument in favor of further development of its production.

There is quiet a large group of medicinal plants that are produced in significant amount both in Ukraine and in the world called spicy crops. Their popularity is due to their value, primarily in cooking and the possibility of using them for medicinal purposes. There is even a version that humanity began to use spicy-aromatic plants to improve the taste of food earlier than salt (Melnychuk, 2016). The combination of spicy medicinal plants is also quite large. In particular, these are such crops as anise, basil, mustard, oregano, marjoram, coriander, cumin, fennel, parsnip, lovage etc.

The demand for medicinal herbs in general and for spices and essential oils, in particular, has been growing rapidly in recent decades around the world and in Ukraine. This is largely because the trend towards a healthy lifestyle is spreading more and more. Consequently, essential oil and spice medicinal herbs and products of their processing, due to their inherent healing properties, are in increasing demand. Agrarians' interest in the production of medicinal plants is also increasing significantly in the context of modern times. Firstly, the world is experiencing climate changes. Thus, in the southern regions of Ukraine, because of global warming, it is becoming more difficult to grow traditional agricultural crops – sunflower, corn, wheat and so on. Farmers face the need to re-focus on the production of drought-resistant and stress-resistant crops. That is why, there is increasing interest in the production of medicinal plants, a significant part of which can easily tolerate drought. Secondly, in Ukraine, because of intensive agricultural production in the last twenty years, as well as in the whole world, the soil condition has significantly deteriorated. As a result, the yield of traditional agricultural crops is reducing. World grain prices also tend to decline. For Ukraine, which is one of the leaders in grain production on the world stage, these facts are extremely negative. Consequently, Ukrainian farmers are increasingly considering the possibility of diversifying production and entering new market niches focused on exports (Mirzoieva, 2019). Thirdly, interest in the production of essential oil and spice medicinal herbs is growing, primarily in the sphere of Ukrainian small and medium-sized agricultural businesses. Its representatives often consider this direction as an opportunity to take a place in a highly profitable niche. The relevance of the research topic is due to the need to increase the production of essential oil and spice crops in order to develop a high-tech and export-oriented industry in Ukraine.

2. LITERATURE REVIEW

Many leading scientists have considered various aspects of the development of production of spices and essential oils in their research. Carrubba A. and Catalano C. (2009) consider the production of essential oil crops as an opportunity to obtain a strategic product, essential oils, for many industries. Scientists note that the value of essential oil plants is that: 1) they are suitable for various purposes; 2) even small producers in rural area can process them; 3) in many cases, they can be grown using environmentally

friendly or organic methods. The last argument provides significant economic advantages to etheric oil crops and makes it possible to use them in the segment of «natural» products (Carrubba, Catalano, 2009).

Derek Byerlee, Walter P. Falcon, and Rosamond L. Naylor (2017) investigate the versatility of essential oil medicinal plants in the context of growing tropical species for food, animal feed, and fuel production (Byerlee, Falcon, Naylor, 2017).

In a research, that was presented to the scientific community in 2015 regarding the production of essential oil crops and essential oils in South Africa, this segment is considered as an opportunity for development. In a study that was presented to the scientific community in 2015 on the production of essential oils and essential oils in South Africa, this segment is considered as an opportunity for the development of agricultural enterprises, as a means of livelihood in rural areas, as an example of partnership between poor rural communities (Rural enterprise partnerships. the case of essential amathole, 2015).

In 2019, the project Initiative of the agricultural productivity and commercialization (IAPAC) based on the example of Nepal, developed by the Austrian Development Agency with the support of the European Union, was published. The project contains suggestions and recommendations on income generation opportunities for rural families by the cultivation of essential oil and spice crops on unproductive land or within woodlands. The project experience shows that medicinal crops can be an important source of income and employment for the population. The main stress is on the fact that small farmers and landless farms can develop by producing medicinal plants (Essential Oil Crop Production in Private and Community Forest Land, 2019). Scientists Ramu Govindasamy, Surendran Arumugam, and James E. Simon (2013) study the overall global market for essential oils and the plants that produce them and provide UN statistics, according to which the main consumers of essential oils are the United States (40%), Western Europe (30%) and Japan (7%). Moreover, the trade volumes in essential oils and related products in the world is increasing by about 10% annually (Govindasamy, Arumugam, Simon, 2013).

In the modern scientific world, many publications are also devoted to the study of the economy of production of spice crops, which are the main source of spices. Thus, Arghya Mani and Arpan Kabiraj (2019) highlight the importance and necessity of spice crops and analyze the export of spices and spice-based products. And they focus on the fact that, first of all, these are products with added value (Mani, Kabiraj, 2019).

It is worth mentioning that in the development of spice production, it is advisable to focus on Indian producers, since in the modern world, India is the largest producer, consumer and exporter of spices.

In particular, this country produces about 75 of the 109 varieties of spice crops listed by the International Organization for Standardization (ISO) and accounts for half of the world's spice trade. Demand for primary and secondary spice crops is growing rapidly in both India and the world (2020) (Indian Spices Industry, 2020). The global spice and seasoning market is predicted to grow at an annual rate of 5%. According to the latest researches, spices are used in the process of production of food and cosmetic products, pharmaceutical products (Global Spices and Seasonings Industry, 2019).

In general, the authors-researchers of the production of spices and essential oils agree that this segment contributes to the development of small and medium businesses in the agricultural area, employment of rural populations and the creation of value-added

products. In Ukraine, these goals have not been fully achieved yet. Therefore, the author explores the possibility of solving the scientific and practical problem of forming an effective market for spices and essential oils in the framework of the strategic development of the medicinal plant industry in Ukraine. The purpose of this study is to assess the economic level of concentration and monopolization of markets for spice and essential oil crops in Ukraine.

3. METHODOLOGY OF RESEARCH

According to the author, an economic assessment of the level of concentration and monopolization of the medicinal plant market in Ukraine and research of trends in this market can be used as a methodological basis for forming a strategy for the development of medicinal plant production. In order to determine the number of enterprises that create a business environment in the field of medicinal plants and identify their impact on the development of the industry, a profound quantitative analysis was made.

In particular, the concentration of a particular market is measured using the following coefficients (indices) (Pervakov, 2009): concentration, Lind, Hergindahl-Hirschman, relative concentration, entropy, variance of market shares of firms, Gini, Hall-Tademanor, Rosenbluth etc.

In modern conditions, many enterprises operate at many markets, including quite a few large companies. But not all large enterprises have the same impact on the market. To study the degree of dominance of the largest participants in the Ukrainian market of essential oils and spices, it will be necessary to determine the rigidity of its oligopoly core, because only if it is present, there is a possibility of anti-competitive concerted actions. To do this, use the Lind index, which is an effective tool for determining the «border» of an oligopoly and it is calculated using the formula:

$$L = \frac{1}{k(k-1)} \times \sum_{i=1}^k Q_i \quad (1)$$

Where k – the number of significant business entities; Q_i – the ratio between the average market shares and business entities and $k+1$ business entities; i – the number of leading business entities among k significant business entities (Valitov, 2006).

$$Q_i = \frac{S_i}{i} + \left(\frac{S_k - S_i}{k - i} \right) \quad (2)$$

where S_i – total market share of i economic entities; S_k – market share of k significant entities. The Lind index is calculated in stages: firstly, for the two largest enterprises, then for the three, and so on until getting a violation of the continuity of reducing the indicator L , that is, until the result $L L k > -1$ appears. Violation of continuity states, that the last added to the computation enterprise, has significantly smaller market share than any of the previous (Okrepkyi, Myhal, 2016). Large significance in further analysis is the investigation of dispersion of oligopoly core. Because even in a highly concentrated market, there can be an active competition due to the uniform distribution of particles and the ratio of the sizes of individual subjects, that included in it. In order to be able to carry out research on the dispersion of the oligopoly core, it is necessary to calculate the share of each of the leading enterprises in the oligopoly core in the Ukrainian market of essential oils and spices. The results obtained will allow us to determine the uniformity of the

distribution of market shares between competing enterprises. This, in turn, will make it possible to assess the risks of collective monopolization, that is, the attainment of a dominant position in the market by leading enterprises through coordinated behavior. To do this, use a generalized the Herfindahl-Hirschman Index (HHI), that is calculated using the formula:

$$HHI = \sum_{i=1}^k S_i^2 \quad (3)$$

To determine the degree of market concentration the Hall-Tideman index or Rosenbluth index (IR) can be used. It demonstrates the number of competitors, the share of each of them in the total sales volume of products, and the ranks of these particles. It is calculated based on comparing the ranks of enterprises in a particular market:

$$I_R = \frac{1}{2 \sum_{i=1}^n i \cdot S_i - 1} \quad (4)$$

where i – rank of the company's share from maximum to minimum (Zaitseva, 2011). The maximum value of the Hall-Tideman index is one (under monopoly conditions). The minimum value is $1 / N$, where N – is the number of enterprises in the sector. The advantage of the Hall-Tideman index is the ability to rank businesses by their degree of significance, which contributes to a deeper analysis of a particular industry. The disadvantage is that this index cannot be calculated in full at a certain time, it must be considered in dynamics (Horniak, Filipovych, 2012).

In order to assess the possible market power of enterprises, taking into account the inequality of their size, the indicator of market share dispersion is used. This indicator reflects the degree of uneven distribution of enterprise shares in a particular market and is based on the formula:

$$\sigma^2 = \frac{1}{n} \sum_{i=1}^n (S_i - \bar{S})^2 \quad (5)$$

where σ – average square deviation of market shares of enterprises; S_i – share of i enterprise in the market; \bar{S} – average share of the enterprise in market; n – number of enterprises (Volkov, Horoshkova 2011).

In addition, the coefficient of variation is also used to assess the uniformity of distribution of production and sales volumes between market-leading enterprises (Pietieshova, 2011). It is calculated using the formula:

$$V = \sigma : \bar{S} \quad (6)$$

The greater unevenness of the distribution of shares of enterprises corresponds to the higher values of the indicators of variance and variation.

Pre-calculated indices will allow you to measure concentration directly and only indirectly competition in the market. Concentration means that there is a certain order in the market that is set by large enterprises. While competition is characterized by «promiscuous» movement of the enterprises and the market entropy. Due to this, entropy indicators can be used to measure the degree of competition directly. In other words, the entropy coefficient is used to assess the degree of disorderliness of a particular market. It

is the sum of the sales shares of enterprises that operate in the market, weighted by the natural logarithm of the inverse value:

$$E = \sum_{i=1}^n S_i \ln \frac{1}{S_i} \quad (7)$$

The value of the entropy index ranges from 0 to 1. The higher this indicator, the higher the level of competition in the market. Along with this coefficient, the relative entropy index is calculated (E0):

$$E_0 = \frac{E}{\ln(n)} \quad (8)$$

A mathematical indicator of the uneven distribution of a particular market is the Gini coefficient (index) (G). It allows to determine how evenly a particular variable is distributed among market participants. The value of the Gini coefficient varies in the range from zero to one. In the case that the coefficient is equal to zero, we can state the condition of absolute equality, and if the one – are absolute inequality.

The higher the coefficient value, i.e. the closer it approaches one, the greater the differentiation in the market distribution between individual producer enterprises. The calculation of this index for a set of enterprises that are part of the oligopoly core of the market of essential oil and spice crops should be carried out using the formula:

$$G = \frac{1}{n} \left(n + 1 - 2 \left(\frac{\sum_{i=1}^n (n+1-i)y_i}{\sum_{i=1}^n y_i} \right) \right) \quad (9)$$

where n –the number of enterprises in the aggregate; y_i is the market share of the i enterprise.

4. RESULTS

The direct research of the current state of medicinal plants production in Ukraine is complicated by the fact that statistical information is extremely insufficient. Centralized analysis of the current state of procurement and cultivation of medicinal plants in Ukraine is practically absent, a number of indicators regarding the functioning of the industry is simply not tracked. In addition, it is worth mentioning, that, since medicinal crop production is not distinguished as a separate industry, everything related to medicinal plants in the statistical collections of the State statistics service is displayed in the section «Technical crops». Secondly, only since 2016, the State statistics service of Ukraine began to reflect data in the context of individual medicinal crops, before that the distinction went to such groups as «medicinal plants», «etheric-oilseeds» and «coriander». Accordingly, information was provided in statistical yearbooks for these three groups. We assume that the selection of coriander in a separate line is due to its value as an essential oil culture. Thus, experts note that the volume of production of coriander essential oil is inferior to almost all the most famous crops, except, perhaps, roses and lavender. Its fruits contain up to 20–25% of fatty oil and 1,5–3% of essential oil. In addition, the composition of coriander essential oil is stable and almost does not differ depending on the variety or growing area (Koriandr: likarski ta korysni vlastyosti, [http](http://)). Since 2016, statistical

information in Ukraine has been enriched with information about the production of «spice crops» and medicinal plants in the context of individual crops, not just coriander.

A characteristic feature of the development of production of essential oil and spice crops in Ukraine is that the industrial production of a number of crops is gradually scaling up. These are crops that until recently were not grown on the territory of the country in general or in small amounts, or those that were not grown due to the fact that they needed other climatic conditions. But due to global warming, it is now possible to grow them in Ukraine.

Analysis of sales of spice crops by enterprises in Ukraine in 2018 showed that 66.2% of Ukrainian spices were sold by two enterprises (table 1). This fact indicates the existence of monopolistic trends in the production of spice crops in Ukraine.

Table 1. Spice sales by enterprise (2018)

Number of enterprise	Volume of products sold, centner	Share in total product sales, %
1	6 219	33,65
2	6 014	32,54
3	1 024	5,54
4	842	4,56
5	787	4,26
6	566	3,06
7	426	2,31
8	390	2,11
9	385	2,08
10	291	1,57
11	277	1,50
12	275	1,49
13	240	1,30
14	233	1,26
15	225	1,22
16	100	0,54
17	95	0,51
18	75	0,41
19	17	0,09

Source: Official site of the State Statistics Service of Ukraine (2019) (<http://www.ukrstat.gov.ua>) authors' own depiction.

In table 2 the results of the study of the rigidity of the oligopoly core in the segment of spicy medicinal plants using the Lind index are presented.

Table 2. Calculation of the Linda index for the spice market in 2018

k	$Q1$	$Q2$	$Q3$	$Q4$	$Q5$	$Q6$	$Q7$	L_k
2	1,034							0,517
3	1,767	5,973						1,290
4	2,368	6,556	5,24829					1,181
5	2,870	6,917	5,425	4,47877				0,985
6	3,368	7,600	6,040	5,210	5,26001			0,916
7	3,863	8,390	6,744	5,944	6,002	6,04533		0,881
8	4,332	9,095	7,338	6,500	6,463	6,312	5,959	0,821

According to the performed calculations, the breach of continuity has occurred at $k=3$ ($L_3 > L_2$), therefore, the oligopoly is created by the first in their market share of farms properties, which provide 66,2% of the sold products. The character of such an oligopoly is defined rather as «rigid». This is the evidence that two companies dictate the trends in the segment of production of spicy medicinal crops, all other manufacturers are largely dependent on this.

In order to carry out the research on the dispersion of the oligopoly core, the share of each of the leading enterprises within the oligopoly core in the Ukrainian segment of medicinal herbs was calculated (table 3).

Table 3. Market share of enterprises that are part of the oligopoly core

Number of enterprise	Market share, %	Share in the oligopoly core, %
1	34,61	50,84
2	33,47	49,16

The calculation of the shares of enterprises that belong to the oligopoly core allows us to emphasize the importance of the largest business entity in the total combination. The results show that the two leading enterprises in the spice market in Ukraine have almost the same weight.

Table 4. Spice market concentration indices in Ukraine in 2018

Indicator	Value
Herfindahl – Hirschman index	5001
Hall-Tideman index	0,504
The dispersion of market shares	0,7
The coefficient of entropy	0,734
The coefficient of relative entropy	1,058

The actual Herfindahl-Hirschman index indicates that there is a limited oligopoly in the Ukrainian spice market. The Hall-Tidman Index (Rosenbluth), which helps to take into account the size ratio of enterprises, is quite low (the minimum level for the surveyed enterprise population is 0.143), which indicates the limited market power of economic entities. The high value of the variance of market shares is caused by a significant gap between the market share of the largest manufacturer and other competitors. The same

circumstance explains the level of entropy coefficients and relative entropy, which measure the uneven distribution of market shares between economic entities. The lower the value of these indicators, the greater the ability of sellers to influence the market price.

The Lorenz curve shows the degree of uneven distribution of a certain market among the main manufacturing enterprises more clearly (fig. 1). As you can see from the figure, the actual Lorenz curve deviates from the line of uniform distribution. This means that there is an inherent difference in market shares for the studied set of enterprises.

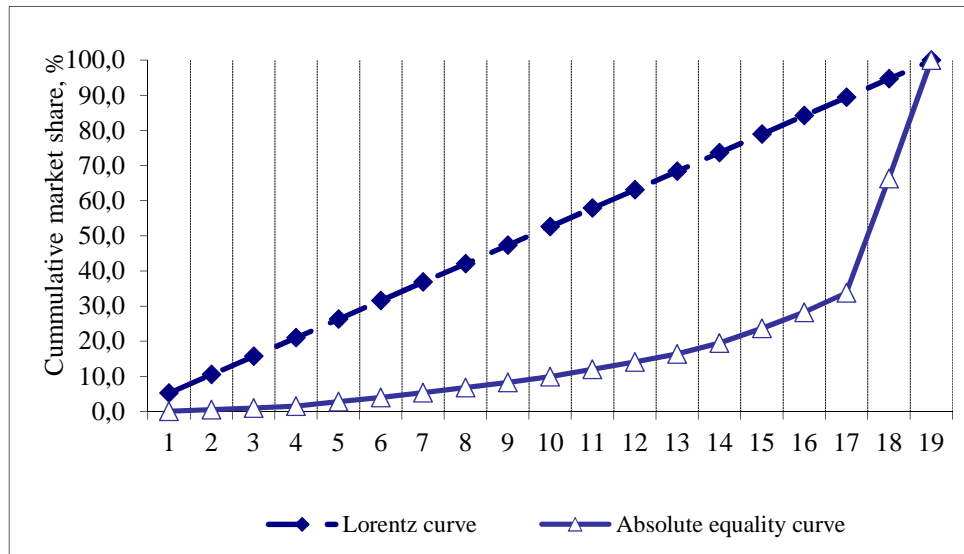


Fig. 1. Lorenz curve of the spice market in Ukraine

Source: own study.

The obtained value of the Gini index (0,508379) confirms the presence of unevenness in the distribution of the studied market among its participants, which increases the probability of a tendency to reduce competition and increase the monopolization of the market of spice crops.

The analysis of the sale of essential oil crops by enterprises in Ukraine in 2018 showed that 50,3% of Ukrainian spices were sold by two enterprises (table 5). This fact indicates that there are monopolistic trends in the production of essential oil crops, as well as in the production of spices in Ukraine, although to a lesser extent. Although it is a positive fact that according to official statistics the number of producers of essential oil crops in Ukraine is twice as large as the number of producers of spices. In addition, most of these enterprises can be attributed to small businesses, which can also be considered as a positive phenomenon, since small agricultural firms are the basis of agribusiness around the world (Herasyanchuk, 2011).

Table 5. Implementation of essential oil crops in terms of companies (2018)

Number of enterprise	Volume of products sold, centner	Share in total product sales, %	Number of enterprise	Volume of products sold, centner	Share in total product sales, %
1	20745	30,3	20	398	0,58
2	13705	20,0	21	323	0,47
3	5750	8,4	22	305	0,45
4	3960	5,8	23	294	0,43
5	3510	5,1	24	287	0,42
6	2458	3,6	25	230	0,34
7	2379	3,5	26	219	0,32
8	1874	2,7	27	209	0,31
9	1716	2,5	28	164	0,24
10	1570	2,3	29	163	0,24
11	1186	1,73	30	147	0,21
12	1121	1,64	31	128	0,19
13	1049	1,53	32	118	0,17
14	889	1,30	33	104	0,15
15	841	1,23	34	95	0,14
16	631	0,92	35	90	0,13
17	621	0,91	36	50	0,07
18	500	0,73	37	33	0,05
19	478	0,70	38	33	0,05

Source: Official site of the State Statistics Service of Ukraine (2019) (<http://www.ukrstat.gov.ua>) authors' own depiction.

The calculation of the Lind index for the market of essential oil crops in 2018 shows that the continuity violation occurred at $k = 7$ ($L_7 > L_6$), therefore, the oligopoly is created by the six first in their market share of farms that provide 73.3 % of the sold products.

Table 6. Calculation of the Lind index for the market of essential oil crops in 2018

k	Q_1	Q_2	Q_3	Q_4	Q_5	Q_6	Q_7	Q_8	L_k
2	1,514								0,957
3	2,133	2,996							0,855
4	2,658	3,548	3,384						0,799
5	3,082	3,909	3,588	3,145					0,686
6	3,530	4,395	4,049	3,700	3,8788				0,652
7	3,919	4,770	4,355	3,968	3,942	3,512			0,683
8	4,317	5,185	4,725	4,321	4,262	3,929	4,146		0,552
9	4,695	5,570	5,058	4,624	4,525	4,199	4,328	4,086	0,515

The calculation of the shares of enterprises that are part of the oligopoly core of the market of essential oil crops in Ukraine confirmed the preliminary calculations and showed that a significant impact on its development is carried out by two major enterprises, as well as 4 other manufacturers, whose importance in the market can be considered as quite significant.

Table 7. Market share of enterprises included in the oligopoly core

Number of enterprise	Market share, %	Share in the oligopoly core, %
1	30,3	41,4
2	20,0	27,3
3	8,4	11,5
4	5,8	7,9
5	5,1	7,0
6	3,6	4,9

The fact that, according to our calculations, the actual Herfindahl-Hirschman index has, indicates that a limited oligopoly has been established in the Ukrainian market of essential oil crops. The Hall-Tidman Index (Rosenbluth), which takes into account the ratio of the size of enterprises, has a relatively low value (the minimum level for the surveyed enterprise population is 0.143), which indicates the limited market power of economic entities. The high value of market share variance is explained by a significant gap between a share on market of the largest manufacturer (enterprise 1 has no name) and other competitors. This circumstance also explains the level of entropy coefficients and relative entropy, which measure the uneven distribution of market shares between economic entities. The lower the value of these indexes, the greater the ability of sellers to influence the market price.

Table 8. Indices of concentration of the market of essential oil crops in Ukraine in 2018

Index	Value
Herfindahl – Hirschman index	2727
Hall-Tideman index	0,283
The dispersion of market shares	187,9
The coefficient of entropy	1,329
The coefficient of relative entropy	0,742

As you can see from the figure, the actual Lorentz curve deviates from the line of uniform distribution. This means that there is an inherent difference in market shares for the studied set of enterprises.

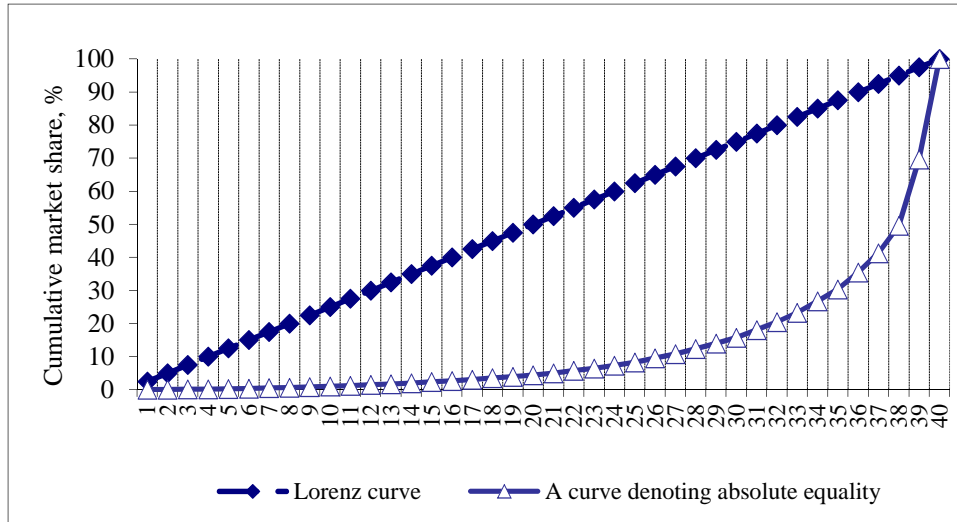


Fig. 2. Lorenz curve of the market of essential oil crops in Ukraine

Source: own study.

The obtained value of the Gini index (0.411646) confirms the presence of unevenness in the distribution of the studied market among its participants, which increases the probability of a trend to reduce competition and increase market monopolization.

5. CONCLUSIONS

Thus, the conducted assessment of concentration and monopolization of the markets of essential oil and spice crops in Ukraine indicates the actual absence of competition in these segments of the Ukrainian economy, the presence of a high-concentrated market and monopolistic trends. The market is actually created by 2-6 dominant firms, all the others play a quite minor role-both in terms of production volume formation and in terms of product price formation. A comparison of the markets showed that the spice market is more concentrated than the market of essential oils. In general, the presence of dominant firms within a certain market, as evidenced by world experience and the development of the world economy, does not contribute to the effective development of a particular industry. Therefore, for Ukraine, the issue of developing the production of essential oils and spices in particular and creating a strategy for the development of the industry of medicinal plants in general is extremely urgent. Activities in this direction will contribute to the expansion of areas for essential oils, spices and medicinal crops, the creation of a full-fledged processing subcomplex, which can include raw material processing plants, enterprises of the perfume and pharmaceutical industries, storage facilities and a sales system. With proper approach, further development of its own production of essential oil products and spices and medicinal plants raw materials can become one of the aspects of economic development of the country. At the same time, it should be noted that due to a complex of organizational, economic and technological problems, the dynamic development of the production of essential oils, spices and medicinal crops in Ukraine in general is quite problematic and requires thorough further research.

REFERENCES

- Arghya, M., Arpan, K. (2019). *Export potential of spices and its value added products*. Access on the internet: https://www.researchgate.net/publication/334771417_Export_potential_of_spices_and_its_value_add.
- Carrubba A., Catalano C. (2009). *Essential Oil Crops for Sustainable Agriculture – A Review*. Access on the internet: https://www.researchgate.net/publication/226188481_Essential_Oil_Crops_for_Sustainable_Agriculture_-_A_Review.
- Derek, B., Walter P.F., Rosamond L.N. (2017). *The Tropical Oil Crop Revolution: Food, Feed, Fuel, and Forests Oxford University Press*. Access on the internet: https://books.google.com.ua/books?id=mwc1DQAAQBAJ&pg=PT162&lpg=PT162&dq=The+dynamics+of+the+production+of+essential+oil+crops&source=bl&ots=hn0eKm1v45&sig=ACfU3U3sxhdMM7YXiPn5WjkOwyQ3xFx_Zg&hl=ru&sa=X&ved=2ahUKEwiYxJK67JDoAhUQposKHUpDBDM4ChDoATAEegQIChAB#v=onepage&q=The%20dynamics%20of%20the%20product ion%20of%20essential%20oil%20crops&f=false.
- Essential Oil Crop Production in Private and Community Forest Land* (2019). Access on the internet: <http://adranepal.org/wp-content/uploads/2018/09/1.-Essential-oil-crops-in-community-and-private-land.pdf>.
- Herasymchuk N.A. (2011). *Konkurentospromozhnist ahrarnoho sektoru Ukrainy v umovakh svitovoi prodovolchoi kryzy. „Ekonomika. Upravlinnia. Innovatsii”*, Vol. 2. Access on the internet: http://nbuv.gov.ua/UJRN/eui_2011_2_10.
- Global Spices and Seasonings Industry (2019). Access on the internet: <https://www.marketwatch.com/press-release/global-spices-and-seasonings-industry-2019-01-08>.
- Horniak V.O., Filipovych V.V. (2012). *Teoretychni pidkhody do vymiriuvannia rivnia kontsentratsii ta monopolizatsii na suchasnykh rynkakh*. Visnyk ONU imeni I.I. Mechnykova, Vol 1 (16).
- Indian Spices Industry* (2020). Access on the internet: <https://www.mbarendezvous.com/general-awareness/indian-spices-industry/2020>.
- Koriandr: likarski ta korysni vlastyvoli*. Access on the internet: <http://likarski-roslini.net.ua/koriandr-likarski-ta-korysni-vlastyvoli/>
- Melnychuk O. (2016). *Novi pryano-aromatychni kultury ta yikh vykorystannia*. Access on the internet: <https://kraskor.in.ua/kkgr/2016/06/26/novi-pryano-aromatychni-kultury-ta-yih-vykorystannya/>
- Mirzoieva T.V. (2019). *Tendentsii koniunktury rynku likarskykh roslin v Ukraini ta sviti*. Zbirnyk naukovykh prats NUK, Vol. 4.
- Official site of the State Statistics Service of Ukraine. Access on the internet: <http://www.ukrstat.gov.ua>
- Okrepkyi R.B., Myhal O.F. (2016). *Metodychni aspekty vykorystannia kilkisnykh indyikatoriv kontsentratsii tovarnoho rynku ta stupenia yoho monopolizatsii. „Ukrainian Journal of Applied Economics”*, Vol. 1 (4/2016).
- Pervakov O.S. (2009). *Analiz mozhlyvostei zastosuvannia pokaznykiv rynkovoho dominuvannia dlia otsinky zahrozy ekonomichnii systemi. „Nauka y ekonomika”*, Vol. 4(16).
- Pietieshova T.A. (2011). *Diahonostychni pidkhody do vyznachennia rivnia intensyvnosti konkurentsii na haluzevomu rynku. „Marketynh i menedzhment innovatsii”*, Vol. 4.
- Ramu, Surendran, James (2013). *An assessment of the essential oil and aromatic plant industry with a focus on Africa*. Access on the internet: <https://pubs.acs.org/doi/pdf/10.1021/bk-2013-1127.ch018>.

Rural enterprise partnerships. the case of essential amathole (2015). Access on the internet: https://www.ecsecc.org/documentrepository/informationcentre/essentialoilsweb_91156.pdf.

Valitov S.S. (2006). *Konkurentne pravo Ukrainy*: [navch. posibnyk]. Kyiv: Yurinkom Inter, 432.

Volkov V.P., Horoshkova L.A. (2011). *Metodolohichni pidkhody do vyznachennia tendentsii dominuiuchoho konkurentnoho pozytsionuvannia na haluzevykh rynkakh*. Visnyk Volynskoho instytutu ekonomiky ta menedzhmentu: zb. nauk. st. Lutsk: Volyn. in-t ekonomiky ta menedzh, Vol. 5.

Zaitseva N.O. (2011). *Otsinka intensyvnosti konkurentsii u vynorobnii promyslovosti Ukrainy*. Visnyk SumDU. Seriiia «Ekonomika», Vol. 4.

DOI: 10.7862/rz.2020.mmr.7

The text was submitted to the editorial office: March 2020.

The text was accepted for publication: March 2020.

Grzegorz ROSŁAN¹

CONDITIONS FOR MENTAL RESISTANCE IN DIFFICULT SITUATIONS

The work environment is an integral part of the professional functioning of every employee (soldier) and is one of the most important areas of human activity – it is almost everyday life in the modern world.

The theoretical and empirical considerations taken in the study relate to the functioning of employees in stressful and dangerous professions and their mental resistance to difficult and extreme situations. The purpose of the article was to determine the basic factors conditioning mental resistance to difficult situations and factors that affect the successful implementation of the tasks. The research method adopted in the article was a qualitative analysis supported by the technique of defining real meanings.

The effect of the publication is the opportunity to learn effective methods of coping with stress and pressure, which determine how to respond to difficulties in both professional and private life.

Keywords: mental resilience, stress, professional development, professional professionalization, resilience.

1. INTRODUCTION

Coronaviruses have been off the beaten track of scientists' interest for several years. It was caused by the fact that they caused a mild cold which disappeared without any intervention within a few days. The current epidemic, caused by a previously unknown, highly infectious coronavirus species, has also contributed to the intensification of interest in the issue of human mental resistance to difficult and extreme situations.

Mental resistance is the ability to deal effectively with challenges, stress and pressure. As D. Strycharczyk and P. Clough “rightly point out, she describes how to respond to difficulties in both professional and private life. People who are strong and mentally resistant believe in their own skills, are open to new challenges and persistently pursue their goals” (Strycharczyk, Clough, 2017). What's more, they cope better with stressful situations, endure criticism and unfavorable remarks more easily, and use a possible failure for personal development. They also succeed more often. In connection with the above, developing mental resilience enables adequate use of possessed skills, and its proper measurement allows to plan appropriate support. Today, the model of mental

¹ Professor Grzegorz Roslan, PhD, The Faculty of Management, Rzeszow University of Technology, 35-959 Rzeszów, al. Powstańców Warszawy 12; e-mail: g.roslan@prz.edu.pl. ORCID: 0000-0002-2566-5004.

resilience and a questionnaire for its assessment are widely used, among others in business and healthcare.

2. DEFINITION AND BASIC FACTORS CONDITIONING MENTAL RESILIENCE

In the psychological literature there are several concepts related to the issues discussed in the article, used interchangeably: “mental resistance”, “emotional resistance”, “stress resistance”, “tolerance to frustration”. It should be emphasized that the term “mental resilience” is understood differently by the authors dealing with this issue. According to the author, among the many definitions of this term, notions formulated by M. Tyszkowa and M. Jarosz deserve attention.

According to M. Tyszkowa,

“mental resistance to difficult situations is a function of: a) the quality of orientation in a psychological situation; b) the motivational power of the goals of the activity; c) the capacity for emotional control and self-control; d) the state of shape, properties and internal coherence of cognitive structures that make up the personality; e) habits of responding to difficult situations and symptoms of emotional tension” (Tyszkowa, 1978).

This author pays special attention to the perceptual, conceptual and emotional function of the situation, where she assigns the basic role to the cognitive aspects of reflecting difficult situations, which determine both emotional excitation and – above all – the further development of emotion or its inhibition (Przetacznik-Gierowska, Tyszkowa, 2020).

In turn, M. Jarosz combines the term “mental resistance” with the concept of “psychological stress” and synonymous terms such as “stress”, “stressor”, “stressful situation”, “frustration” and “conflict”. It expresses the view that “stressor”, “stressful situation” and “difficult situation” are unambiguous terms, the names of the factors causing stress, i.e. the state of stress. At the same time, he states that “of these terms” seems to be the most “difficult situation”. This author distinguishes between mental resistance to stressor (difficult and stressful situation) and mental resistance to stress (stressful state) (Jarosz, 1988).

According to the author, resistance to stressor manifests itself in relatively low emotional reactivity to threats, obstacles and other factors specific to difficult situations. In other words, man perceives the situation in which he finds himself difficult, but he responds to this situation with a relatively weak emotional reaction, such as fear, anxiety or anger. Resistance to stress, on the other hand, is based on the ability to function properly, despite emotional excitement. This means that a person experiences emotional excitement, experiences fear, anxiety, anger or other emotional states of significant intensity, and at the same time acts consciously, effectively, controls his behavior and aims to achieve the chosen goal (Jarosz, 1988).

It is worth mentioning here that the concept of “emotional resilience” is defined in a similar way in the publication edited by J. Hildt: *Ergonomics in the service of the army*. By emotional immunity we understand the stability of mental and motor functions in the conditions of emotional interactions. In a broader aspect, it is the ability to manage your

emotions, maintain high ability to work and perform complicated and dangerous activities without excessive tension, regardless of emotional impact (Hildt, 1972).

The quoted terms relatively broadly and comprehensively characterize the term 'psychological resistance'. The above-mentioned terms of mental resistance, to some extent, answer the question on what factors this resistance depends. However, it seems expedient, according to the author, to specify these factors more precisely. Therefore, the basic factors that determine human mental resistance to difficult situations, should include: the properties of the nervous system and some personality traits of the human. On the properties of the nervous system – for example, the strength and persistence of emotions and the type of emotional response depend. People with an anxiety attitude when experiencing a difficult situation can experience and often experience strong anxiety that prevents them from working efficiently. In contrast, people who are characterized by confidence in their strength and attitude to overcome difficulties, less often experience difficult situations of emotional arousal disorganizing their actions (Talaga, Sikorska, Jawor, 2018). In close connection with the above properties, there are:

- adaptation to the conditions and requirements associated with the occupation or function performed,
- level of motivation to achieve the intended goal, hierarchy of values and needs, level of aspiration etc.,
- personality maturity; mature personality is characterized by, among others its content, subordination of aspirations and side needs to the leading aspiration and the ability to restrain emotions; these properties co-condition organized and efficient functioning in difficult situations; and on the contrary – one of the manifestations of immature personality is low resistance to stressful situations (Sikorska, 2017).

Particularly important factors conditioning mental resilience also include human cognitive structures, the level of professional preparation, and psychological readiness for professional activity. From these factors include depend on: the way people perceive difficulties, i.e. how they are perceived and how they see themselves in a difficult situation.

Due to the limited possibilities of this publication, only some of these factors will be presented below.

3. ADAPTATION TO PROFESSIONAL CONDITIONS AND REQUIREMENTS AS WELL AS THE FUNCTION PERFORMED

Adaptation – it is the adaptation of the human body and personality to changes in the environment or to changing living conditions and activities. The proper adaptation process is of great importance for shaping mental resilience to difficult situations. The positive course of adaptation is, among others on increasing the adequacy of human behavior in relation to the impact of the new environment. Adaptation creates opportunities for a more optimal functioning of the body and personality in unusual conditions. However, if adaptation does not occur, additional difficulties arise in mastering both the subject and the conditions of activity, including the occurrence of disturbances in its regulation (Aleksander, 2017).

Research results and literature analysis show that, depending on external conditions and the level at which human and environmental interactions are made, various types of

adaptation can occur (Okoń, 2001): physiological – changes in the interaction of various physiological systems of the body, e.g. when increasing the intensity of work; biological – changes in the metabolism and functions of organs – according to the vital importance of stimuli, e.g. when acclimatizing (when sleep is disturbed, appetite – work performance decreases); psychological – adaptation to the conditions and tasks at the level of processes and mental functions, e.g. increased sensitivity of the eyesight in the dark or dulling of auditory sensitivity under the influence of noise and strong sounds (sensual adaptation), an increase in the pace of thinking at a time deficit; social – implementation into a new job, into a new social environment, adaptation to a new place of life (Doroszevska, 1995; Koczniewska-Zagórska, Nowacki, Wiatrowski, Bandura, 1986).

These types of adaptations can be more or less manifested simultaneously. Such processes occur, for example, in the initial period of young people's work in industrial plants and other institutions, young soldiers (officers) in the army, etc. A model example of the adaptation process and related difficulties should be the course of adapting young soldiers (conscripts) to the requirements of the service military.

After crossing the barracks gates, in their life and operation, fundamental changes take place: a change in the environment, new discipline requirements, regulatory order of the day, etc. They are faced with requirements for mastering new messages, skills and habits, new regularities of behavior, new elements and forms of relations. interpersonal, etc. All changes and new requirements may cause some negative mental states among some soldiers, especially at the beginning of their service, thus causing specific adaptation difficulties. They result from both the specificity of military service and the individual personality traits of soldiers.

According to the practice and literature on the subject, the process of adapting young soldiers to military service has a different course. Depending on the period and properties of the adaptation process, soldiers can be divided into three groups. For a significant proportion of soldiers, the adaptation period lasts 2–3 weeks. They show no major adaptation difficulties. These soldiers achieve good results in combat preparation. For soldiers in the second group, the adaptation period is longer. They have adaptation difficulties, which are accompanied by deterioration of well-being, and reduction of physical and mental fitness. Soldiers of the third group have significant adaptation difficulties. They find, among others expression in mental disorders requiring treatment (Nowosielski, 2009).

Considering the above issues, which concern, among others soldiers (military commanders), the main subject of further considerations will be professional adaptation, which W. Szewczuk describes as the "process of adaptation of an employee starting work in a given profession to the requirements of the work environment; this kind of adaptation occurs in adult workers in the event of a change of profession ..." (Szewczuk, 1979).

Graduates of military schools and academies, commanders appointed to subsequent official positions, and professional soldiers appointed to perform many other responsible functions are also adapted to professional activity. The process of professional adaptation is accompanied by the process of social adaptation, which consists in adapting a person to specific living conditions and activities in a given environment. In further considerations, both these processes will be considered together.

In this sense, the process of professional and social adaptation includes: adaptation to professional requirements; to new working conditions; to the new social environment, its customs, norms and traditions. It should be particularly emphasized here, however, that

the process of professional adaptation is not a passive act of subordination to professional requirements, but rather an active and creative involvement in professional activity. There are many general features specific to any adaptation process in professional adaptation. Therefore, it is a process that takes place thanks to energetic, psychological and moral mobilization of a person in accordance with professional and environmental requirements. The possibilities of such mobilization and mastering new tasks are different for individual people. Therefore, there are individual properties in the process of their adaptation in terms of time, relevance and accuracy (Kwiatkowski, 2003).

There are two groups of factors conditioning adaptation. The first group includes factors related to human personality traits. These are such properties as: general and special preparation, character, temperament, cognitive processes, functional states, age and others (Dang, Ian Nuberg, Bruwer, 2019). For example, people characterized by a slow response to external stimuli, calm, reasonable (phlegmatic) exhibit great difficulties in adapting to complicated living and operating conditions. However, their adaptation is more durable compared to people who react quickly and strongly to the environment, emotional, prone to frequent changes in general condition (spitfire, sanguine). The melancholic is even different. Under the same conditions, he experiences deeper complicated events, is inclined to increase difficulties, sees (and expects) something bad and dangerous in everything. New living conditions can make him completely lost.

The course and results of professional adaptation depend primarily on the level of readiness to complete tasks and motivation. At the same time, high prosocial motives, a sense of duty, responsibility, can to a certain extent compensate for the lack of experience, impact on the adaptation of unfavorable temperament traits, etc., because these motives favor the manifestation of activity and adequate functioning of mental processes, and on the contrary, the weakening of prosocial motivation leads to the breakup of valuable forms of adaptation.

The second group consists of such factors that exist objectively, e.g. measures that facilitate familiarization with the nature and working conditions, properties and examples of managers, social environment, educational work and others (Strelau, 2006).

Adaptation to new conditions is more efficient if initial work is carried out to familiarize man with possible situations in his activities. An important element of the preparatory work is the activation of pro-social behavior motives, maintaining a high level of cognitive activity, shaping missing skills and habits (Penuel, Fishman, Yamaguchi, Gallagher, 2007). In many social environments, especially in the army, great attention is paid to compliance with applicable standards of conduct. In this case, the basic role has to fulfill knowledge, which allows you to understand the essence of a given principle of conduct. Moreover, according to Z. Skorny,

“an internalized norm accepted by the entity is not treated as an order from outside, executed only to obtain a prize or to avoid punishment. It becomes an autonomous regulator functioning also when it is not subject to external control. (...) Acting in accordance with the standard is a source of internal satisfaction and a sense of well-fulfilled duty. However, violation of the norm causes a sense of guilt and loss of self-respect” (Skorny, 1989).

Thus, the process of professional and social adaptation consists of several stages: cognitive; learning new patterns of activities, social norms and ways of behavior; psychological reorientation; developing habits and internal acceptance of new tasks and operating conditions.

At this point, it should be recalled that man has certain restrictions on adaptability, e.g. fatigue, hunger, thirst, etc. Relativity of adaptation also occurs in sensations: pain, temperature, vibration. It is almost impossible to adapt to very high and low temperatures, pain, etc. It is also worth mentioning that there is not enough data in the psychological literature regarding the answer to the question whether and to what extent it is possible to adapt to difficult situations. Literature in the field of aviation and space psychology is an exception. However, it applies to pilots and astronauts (astronauts), i.e. especially selected people (Terelak, 2017; Pokino, 1977).

It should be mentioned that the most common problems of resistance to stress are combined with the innate properties of the nervous system and the acquired skills of coping with stress (Heszen, 2013). At the core of a man's ability to cope with new, changing life situations is his general mental fitness, also called general ability or intelligence. The essence of these abilities is not only the ability to passively adapt to environmental conditions, but above all the possibility of purposeful activity that sets out various ways of dealing with stress. Coping with stress relies on a constantly changing cognitive and behavioral effort directed to specific external or internal requirements, which are assessed as burdensome or exceeding human abilities (Miedziun, Czabała, 2015).

Acquired coping skills include primarily professional training and experience. A good example would be adapting the remote control to difficult situations. It has been found that underlying this adaptation are two important psychological mechanisms. The first of them is associated with the process of flight training. It is based on the fact that as you gain practice, the degree of difficulty of aerial tasks decreases. The second psychological mechanism is to reduce sensitivity to stressors, by learning techniques to control your own emotional states (Baqtayan, 2015).

4. PSYCHOLOGICAL READINESS FOR PROFESSIONAL ACTIVITY

Another, extremely important factor conditioning mental resilience is the psychological readiness for professional activity or related to the function performed, including readiness to act in difficult situations. According to L.M. Popova, I.M. Puchkova and P.N. Usti, psychological readiness – Is an important premise for targeted activity, its regulation, stability and efficiency. It helps a man to successfully perform his duties, correctly use knowledge, experience and personal properties, maintain self-control and correct his actions during the emergence of unforeseen obstacles (Popov, Puchkova, Usti, 2016).

The authors distinguish two types of psychological readiness: permanent (general) and short-term (situational). Permanent readiness is a structure that includes:

- positive attitude to a specific type of professional activity,
- adequate to the requirements of the business, profession, character traits, temperament, ability and motivation,
- necessary knowledge, habits and skills,

- professionally durable properties such as insights, attention, thinking and emotional processes.

Situational readiness – is updating, adopting all forces, creating psychological possibilities for effective performance of activities at a given moment. General and situational psychological readiness include the following components:

- motivational (interest in a given activity, the need for effective task performance, striving to succeed and show oneself from a better side),
- cognitive (understanding responsibilities and tasks, assessing their significance, knowledge of the means necessary to achieve the goal, imagining likely changes in the situation),
- emotional (sense of responsibility, faith in achieving success, focusing on the task, overcoming disturbing interactions, doubts, fear etc.).

It should be mentioned that difficult situations occurring in human activity are accompanied by specific states of psychological tension (stress). They are, among others caused by such circumstances as danger, novelty, the job of strength; physical obstacles – weather, town, strong noise; failures of work equipment, equipment malfunction, interpersonal relationships; not enough experience etc. In other words: anything that hinders or frustrates achieving a goal. The impact of difficult situations on the course and result of action depends not only on the nature of the task and circumstances, but also on the individual characteristics of a person, motives of his behavior, experience, habits, basic properties of the nervous system, emotional resilience. In one person, psychological stress arises “easier” and lasts longer than another. In the same situation, the degree of psychological stress varies from person to person. Stress as a condition covers the whole psyche and affects the nature and level of mental activity as a whole and on individual mental functions. The literature on the subject distinguishes several forms of psychological stress: perceptive – occurring in the event of great difficulties and errors when receiving information; intellectual – when it is impossible to find a way to solve a task or exit a critical situation; emotional – associated with the emergence of emotional states disorganizing action, the inability to make conscious effort and self-control; motivational – binding min. fighting motives, e.g. continued active performance, duties or evasion of danger and risk. It is worth reminding that, in a state of psychological stress, primarily complex intellectual activities and processes are disorganized. However, simple operations are relatively resistant (Łojek, 2007).

An analysis of human behavior in emergency situations shows that the most powerful stimulus that leads to erroneous activities is incomplete information. In this situation, high psychological readiness becomes necessary, which can to a certain extent compensate for the lack of sufficient information. To achieve such psychological readiness, training methods are necessary that develop speed of thinking, suggest – how to use previous experience to successfully operate in conditions of incomplete information, shape the ability to switch from one attitude to another, to forecast and anticipate possible events (Czajkowski, 2010).

An important method of preventing excessive emotional tension is planning your activities, especially thinking through them carefully and carrying out imaginary “gameplay”. It is also beneficial to develop possible variants of actions in situations that may arise at work – including emergency situations. A good illustration of the above recommendations for proper training is an example of working on himself the American

supersonic aircraft flyer W. Bridgeman, who conducted his trainings in the cabin of the aircraft, and then supplemented them by recreating in his imagination all the details of the next summer.

In summary, these general considerations can be said that psychological readiness for difficult situations – these are active states of the body and personality that reflect the requirements of these situations and appear as a regulator of goal-oriented behavior. Psychological readiness is conducive to maintaining the efficiency of operations with unexpected complications and the formation of stress reactions.

5. SHAPING PSYCHOLOGICAL READINESS FOR PROFESSIONAL ACTIVITY

Business readiness develops and strengthens by equipping people with general and professional knowledge, skills and habits, and improving personality traits that are important in professional terms. It is worth mentioning that the motivational factor is extremely important. Awareness of the social and personal importance of work is conducive to raising readiness. At the same time, objectively favorable working conditions are necessary. According to experts, the targeted teaching process according to profiling disciplines is particularly important. This kind of teaching creates favorable conditions for the formation of ideas about future activities. And also about the nature of the workplace, specific working conditions and typical situations that occur in practice – including difficult situations (Ryś, Trzęsowska-Greszta, 2018).

Moving on to the merits, in order to prepare a man for work in stressful situations, the following principles, methods and techniques of exercises and trainings are proposed: gradual introduction of an increase in the pace of activities; solving tasks with insufficient information, disturbances, occurrence of risk and threat elements; introducing unexpected obstacles and unexpected complications to classes; setting a task that requires independent selection of one of several possible ways to solve it; creating situations leading to partial setbacks and requiring increased activity in the future; setting a task and creating situations that require an immediate transition to bold, independent and organized activities; developing models of future activities depending on changes in their external and internal conditions and others (Heszen-Niejodek, 2007, Heszen-Niejodek, 2000).

No less important determinant of shaping psychological readiness is the preservation of the known teaching principle consisting in grading difficulties. Studies show that exercises aimed at overcoming negative mental states, preparation for risk and danger activities should be graded. At the same time, one should take into account the personality characteristics, knowledge and habits of a given person. Unauthorized optimistic mood can turn into fear and disbelief in your own abilities – in the event of failure (Heszen-Niejodek, 2000).

Permanent readiness is also shaped by physical exercises and sports, which develop mental resilience, speed and accuracy of reaction and attention. It follows that the main factors conditioning human mental resistance to difficult situations are shaped in the process of properly organized training and upbringing, including physical education and sport (Heszen-Niejodek, 2002).

However, special preparation and specialist experience play a special role in this respect. There is a lot of evidence that stress causes a much smaller reduction in performance in people who are better prepared in terms of work. The results of studies by

many authors testify to the fact that functional patterns developed and thoroughly fixed in the human central nervous system, which are shaped on the basis of knowledge, especially skills and habits, are not disorganized under the influence of stress, age-related involuntional changes and other adverse effects. for a man's situation (Heszen-Niejodek, 2002).

Shaping psychological readiness to perform a specific task remains closely related to the formation of general (permanent) readiness. The most important indicators of such readiness, which has already been mentioned, is the mobilization of mental processes to perform the task, personal properties, experience and concentration on the task and the way it is solved, as well as – focus on maximally rational and full use of forces to overcome difficulties and achieve positive result. These goals are possible to achieve through proper training and educational work. Among the multitude of objective and subjective factors on which the process of shaping and the level of readiness to perform a task depends, motivation should be distinguished. A task-oriented theme stimulates a person to be active, receive and remember information as required by the task (Moj, 2011).

The motives for behavior before performing a difficult task are complex and often ambivalent. It happens that a person experiences a fight of various motives and finds a reason to refrain from participating in the performance of a risk-related task with great difficulties. Scientific data shows that behavior can be polytotive, i.e. stimulated by several motives. At the same time, the influence of different motives is not equal. The most important motif turns out to be for a man important subjective significance. It is therefore extremely important that a person treat a given task as personally significant. In this case, his attitude to the task is qualitatively different compared to the requirement to perform the task only out of necessity (Terelak, 1977).

A positive attitude to the task stimulates a deeper interest in it, strengthens cognitive activity, allows you to perform a large range of preparatory activities in a short time. The task itself is in this case a great stimulant, because it corresponds to the needs, interests and attitudes of personality. With a neutral or passive attitude to the task, a positive result can also be achieved, but the preparatory activities require so much effort that it has a negative impact on the level of psychological readiness (Terelak, 2001).

6. CONCLUSION

Psychological readiness to perform a specific task by the team leader (commander) is achieved through goal-oriented interaction, among others through:

- conducting appropriate educational undertakings,
- clarification of the task content and familiarization with the conditions and situation of future activities,
- proper organization of activities, exercises and trainings,
- activation of self-tuning for successful operation.

In conclusion, it should be emphasized that managers (commanders) should take into account other circumstances. First of all – one should not allow for fatigue. Strong physical and especially mental fatigue causes a weakening of perception, attention, memory and thinking. It can be the reason not only for errors in operation, improper use of technical devices, but also for inhibiting human psychological readiness for action.

Secondly – the manager (commander) should pay special attention to young, less experienced people. It may be that after receiving the task, due to insufficient knowledge and experience, the young person is not able to mobilize himself properly to the requirements of the situation, because he underestimates the potential difficulties, he counts on the fact that success can be achieved without careful preparation.

Thirdly, it should also be taken into account that some professionally experienced people may experience inadequate self-mobilization after receiving the task. This happens as a result of overestimating one's own abilities, beliefs - that one is able to perform a given task without proper preparation. Such a commander (operator) usually does not confront his experience in the light of the new task. It makes no effort to develop the most optimal plan and better ways of doing things. Therefore, it is advisable to place more complicated tasks towards experienced specialists and entrust them with the obligation to help young people (soldiers).

It is also worth remembering that shaping and maintaining psychological readiness depends not only on managerial interactions, but also on the ability of a person to control his own readiness. Man is largely a self-regulating system. He is equipped with physiological and psychological mechanisms adapting him to the changing conditions of life and activity, self-management, mobilization of forces and experience, changes in the orientation and content of his activity.

REFERENCES

- Aleksander, T. (2017). *Pedagogiczne elementy adaptacji (kierowanej) społeczno-zawodowej nowych pracowników*. „*Annales Universitatis Mariae Curie-Skłodowska*”, Sectio J, nr 2, vol. XXX/2017.
- Baqutayan, Sh.M.S. (2015). *Stress and Coping Mechanisms: A Historical Overview*. „*Mediterranean Journal of Social Sciences*”, No 2, Vol. 6.
- Coping with stress*, Heart and Stroke Foundation.
- Czajkowski, Z. (2010). *Lęklliwość, lęk, obawa, strach i panika oraz odporność psychiczna zawodników*. „*Ruch dla Kultury*”, Rocznik Naukowy nr 10.
- Dang, H.L., Ian Nuberg, E.L., Bruwer, J. (2019). *Factors influencing the adaptation of farmers in response to climate change: a review*, *Climate and Development*.
- Doroszewska, J. (1995). *Pedagogika specjalna*. Wrocław: Wydawnictwo Ossolineum.
- Heszen, I. (2013). *Psychologia stresu. Korzystne i niekorzystne skutki stresu życiowego*. Warszawa: Wydawnictwo Naukowe PWN.
- Heszen-Niejodek I. (1997). *Styl radzenia sobie ze stresem: fakty i kontrowersje*, „*Czasopismo Psychologiczne*”, 3(1).
- (2000). *Teoria stresu psychologicznego i radzenie sobie* [w:] Strelau J., red. nauk, *Psychologia. Podręcznik akademicki*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
- (2000). *Stres i radzenie sobie – główne kontrowersje* [w:] Heszen-Niejodek, I., Ratajczak, Z., red. nauk., *Człowiek w sytuacji stresu. Problemy teoretyczne i metodologiczne*, Katowice: Wydawnictwo Uniwersytetu Śląskiego.
- (2002). *Teoretyczne i kliniczne problemy radzenia sobie ze stresem*. Poznań: Stowarzyszenie Psychologia i Architektura.
- Hildt, J. (red. nauk.) (1972). *Ergonomia w służbie wojska*. Warszawa: Biblioteka Wiedzy Wojskowej.

- Jarosz, M. (1988). *Psychologia lekarska*. Warszawa: Państwowy Zakład Wydawnictw Lekarskich.
- Koczniewska-Zagórska, L., Nowacki, T., Wiatrowski, Z., Bandura, L.R. (red. nauk.) (1986). *Słownik pedagogiki pracy*. Wrocław: Zakład Narodowy im. Ossolińskich.
- Kwiatkowski S.M. (2003), *Adaptacja zawodowa* [w:] Pilch, T., red. nauk., *Encyklopedia pedagogiczna XXI wieku*, t. 1. Warszawa.
- Łojek, W. (2007). *Natura stresu. Spojrzenie z perspektywy ewolucyjnej*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.
- Miedziun, P., Czabała, J.Cz. (2015). *Stress Management Techniques*. "Archives of Psychiatry and Psychotherapy", No. 4.
- Mój, A. (2011). *Osobowościowe uwarunkowania nadziei na sukces wśród pilotów wojskowych oraz członków wojskowej obsługi naziemnej*. „Polski Przegląd Medycyny i Psychologii Lotniczej”, nr 4, t. 17.
- Nowosielski, W. (2009). *Szeregowi dawniej i dziś* [w:] Maciejewski, J., Krasowska-Marut, A., Rusak, A., red. nauk., *Szeregowcy w grupach dyspozycyjnych. Socjologiczna analiza zawodu i jego roli w społeczeństwie*. Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.
- Okoń, W. (2001). *Słownik pedagogiczny*. Warszawa: Wydawnictwo Naukowe PWN.
- Penuel, W.R., Fishman, B.J., Yamaguchi, R., Gallagher, L.P. (2007). *What Makes Professional Development Effective? Strategies That Foster Curriculum Implementation*. "American Educational Research Journal", No 4, Vol. 44, December.
- Pokino, P. (1977). *Dobór i selekcja psychologiczna personelu latającego i kierującego lotami* [w:] Błoszczyński, R., red. nauk., *Psychologia lotnicza*. Warszawa: Wydawnictwo Ministerstwa Obrony Narodowej.
- Popov, L.M., Puchkova, I. M., Usti, P.N. (2016). *Formation of Psychological Readiness for Professional Activity: Competence Approach*. "IEJME – Mathematics education", No 4, Vol. 11.
- Przetacznik-Gierowska, M., Tyszkowa, M. (2020). *Psychologia rozwoju człowieka. Tom 1*. Warszawa: Wydawnictwo Naukowe PWN.
- Ryś, M., Trzęsowska-Greszta, E. (2018). *Kształtowanie się i rozwój odporności psychicznej*. „Kwartalnik Naukowy”, nr 2(34).
- Sikorska, I. (2017). *Odporność psychiczna w ujęciu psychologii pozytywnej: edukacja i terapia przez przygodę*. „Psychoterapia”, nr 2(181).
- Skorny, Z. (1989). *Mechanizmy regulacyjne ludzkiego działania*. Warszawa.
- Strelau, J. (2006). *Psychologia różnic indywidualnych*. Warszawa: Wydawnictwo Naukowe Scholar.
- Strycharczyk, D., Clough, P. (2017). *Odporność psychiczna. Strategie i narzędzia rozwoju*. Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
- Szewczuk, W. (1979). *Słownik psychologiczny*. Warszawa.
- Talaga, M.T., Sikorska, I.M., Jawor, M. (2018). *Odporność psychiczna u osób z zaburzeniami afektywnymi i lękowymi a doświadczenia wczesnej traumy – badania pilotażowe*. „Psychiatria Polska”, No. 3(52).
- Terelak, J. (1977). *Zagadnienia osobowości i motywacji w psychologii lotniczej* [w:] Błoszczyński, R., red. nauk., *Psychologia lotnicza*. Warszawa: Wydawnictwo Ministerstwa Obrony Narodowej.
- (2001). *Psychologia lotnicza* [w:] Kowalski, W., red. nauk., *Medycyna lotnicza. Wybrane zagadnienia*. Warszawa: Wydawnictwo: Fundacja DOCEO.

— (2017). *Characteristics of the scientific and implementational activities of aviation psychologists and scientific consultancy from the perspective of the 90 years of existence of The Military Institute of Aviation Medicine*. "The Polish Journal of Aviation Medicine, Bioengineering and Psychology", No 3–4(23).

Tyszkowa, M. (1978). *Sytuacyjno-poznawcza koncepcja odporności psychicznej*. „Przegląd Psychologiczny”, nr 1/tom XXI.

DOI: 10.7862/rz.2020.mmr.8

The text was submitted to the editorial office: March 2020.

The text was accepted for publication: March 2020.

Olga SOROCEAN¹
Neli DILAN²

SOCIO-ECONOMIC DYNAMICS OF CEE COUNTRIES WITHIN THE EUROPEAN UNION

Integration processes are a growing trend in the global economy: the circle of participating countries is expanding; new forms and directions of international cooperation are appearing. The experience gained by the developing countries of Central and Eastern Europe proves the diversity of national models of participation in economic integration processes, as well as to the ambiguous results of their implementation. In order to ensure national competitiveness and security, it is necessary to ensure the diversification of the forms and directions of integration processes. The specifics and ambiguous consequences of the CEE countries development within the EU are of particular interest to developing countries located in close proximity to the borders of this integration association. The lessons of the integration association of Europe are in many respects valuable for Moldova, Belarus and Ukraine.

Keywords: CEE countries, integration processes, the socio-economic dynamics, specifics development, the economic development.

1. INTRODUCTION

Fundamental systemic transformations in the CEE countries and those from the post-Soviet space determined the desire and participation of these states in the processes of European integration. Fifteen years after the large-scale enlargement of the EU, questions about the results of integration remain relevant both for the regional association as a whole and for the new members – transforming economies. *The specifics and ambiguous consequences of the development of these countries within the EU are of particular interest to developing countries located in close proximity to the borders of this integration association.*

2. METHODOLOGY OF RESEARCH

Research methods in the investigation and elaboration of the scientific approach have served: induction and deduction, logical analysis and synthesis, investigation method, analogy and comparison.

¹ Olga Sorocean, Doctor hab. of Economics, State University of Moldova, Department of Economics, Marketing and Tourism, Alexei Mateevici St 60, Chisinau; e-mail: olga_sorocean@hotmail.com. ORCID: 0000-0001-6063-9293.

² Neli Dilan, drd., State University of Moldova, Department of Economics, Marketing and Tourism, Alexei Mateevici St 60, Chisinau; e-mail: dilan.nelly@yahoo.com (corresponding author). ORCID: 0000-0001-6115-4984.

The region of Central and Eastern Europe (CEE) began to transform from a historical and geographical concept into a geopolitical entity at the end of 1989. The question of which countries are part of it still remains open: there is no consensus on the identification of this region in international economic practice so far. Many international organizations include in the CEE region the former socialist states of Eastern Europe that are not members of the CIS. In addition, a number of researchers include, based on their accession to the European Union, CEE and the former Soviet Union republics: Latvia, Lithuania and Estonia (Grigas, 2013). Currently, 11 states with a transforming economy are EU members – these are Bulgaria, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, Croatia, Czech Republic and Estonia.

The effectiveness of integration, in accordance with the general scientific approach, can be determined by the ratio between the results achieved and the costs incurred. It is quite difficult to compare the various goals and results of the country's participation in various international integration projects, taking into account the short and long term, as well as the associated set of national costs – losses. Therefore, often, in order to assess the economic efficiency of European integration, individual macroeconomic indicators that most adequately reflect the socio-economic dynamics of the EU member states are used. Among them we can mention:

- annual GDP growth rate;
- level of national unemployment and migration;
- volume and geography of export and import;
- R&D expenses.

Important features of the integration models of countries with transforming economies that have a fundamental impact on the consequences of EU enlargement are:

- focus on external sources of economic growth, mainly on capital inflows from developed EU countries;
- reorientation of national industrial production to the external market, and above all, to the EU market;
- integration of real sector enterprises into global value chains of European multinationals;
- offer of sufficiently qualified and cheap labour force.

By the time of accession to the EU, CEE countries, as a whole have successfully overcome the most difficult stage of socio-economic transformation and achieved macroeconomic stabilization. In the early years, the European Union experienced an economic boom in these countries caused by a combination of various factors. Among them:

- liberalization of trade and access to the European market,
- influx of advanced technologies and foreign direct investment from developed European countries,
- expansion of domestic demand,
- use of price and social dumping.

In the short term, the admission of new members to the EU had a positive effect on the overall dynamics of the EU's GDP, as the average growth rate in the "new" countries was higher than in the "old" countries. The highest growth rates were observed in the Czech Republic and Slovakia. In the "new" EU member states, per capita GDP increased significantly, by 8–12%. Moreover, according to European experts, the access of the "new"

EU countries to the pan-European market had a greater impact than the customs union and labour migration. Thus, the customs union and migration caused an increase in consumption by 1–2%, while access to new markets – by 9%.

In 2004, the year most CEE countries joined the EU, GDP growth was high in: Latvia (8.3%), Lithuania (6.6%), Estonia (6.3%), Slovakia (5.3%), Slovenia (4.4%) and Hungary (5.0%). The catalyst for the economic recovery was domestic demand, which grew due to higher wages and higher employment. In the Czech Republic, GDP, driven by domestic demand, peaked at 6.5% in 2005, in Latvia – 10.7%, and in Estonia – 9.4% (table 1).

Table 1. GDP growth dynamics in CEE and the Eurozone, 2000–2018 (%)

	2000	2001	2004	2005	2008	2009	2012	2013	2016	2017	2018
Czech Republic	4,3	2,9	4,9	6,5	2,7	-4,8	-0,8	-0,5	2,5	4,4	2,9
Hungary	4,2	3,8	5,1	4,4	0,9	-6,6	-1,6	2,1	2,3	4,1	4,9
Poland	4,6	1,2	5,1	3,5	4,2	2,8	1,6	1,4	3,1	4,8	5,1
Slovenia	4,2	2,9	4,4	4	3,3	-7,8	-2,7	-1,1	3,1	4,9	4,5
Slovakia	1,2	3,3	5,3	6,8	5,6	-5,4	1,7	1,5	3,1	3,2	4,1
Romania	2,5	5,2	10,4	4,7	9,3	-5,5	2,1	3,5	4,8	7	4,1
Bulgaria	4,8	3,8	6,4	7,1	6	-3,6	0	0,5	3,9	3,8	3,1
Croatia	3,8	3,5	3,9	4,1	2	-7,3	-2,3	-0,5	3,5	2,9	2,6
Latvia	5,4	6,5	8,3	10,7	-3,5	-14,4	4	2,4	2,1	4,6	4,8
Lithuania	3,8	6,5	6,6	7,7	2,6	-14,8	3,8	3,5	2,4	4,1	3,5
Estonia	10,6	6,3	6,3	9,4	-5,4	-14,7	4,3	1,9	3,5	4,9	3,9
Eurozone	3,9	2,2	2,3	1,7	0,5	-4,5	-0,9	-0,2	1,9	2,4	1,9

Source: compiled by the author based on World Bank data (<http://www.worldbank.org>).

The economic development of the countries of Central and Eastern Europe, which have demonstrated impressive economic growth and increasing well-being of the population since the beginning of the 2000s, was interrupted by the global financial and economic crisis. The year 2009 was the most unfavourable year in the process of Euro-convergence of developing countries. For most of them, it took almost a decade to achieve pre-crisis indicators of GDP growth, and a number of countries (Baltic countries, Romania) were not able to restore high rates of development of the national economy.

The transition period in CEE countries, from the moment of their accession to the European Union, is considered completed, but this does not exclude the preservation of significant specifics, problems and difficulties in the functioning of national economies and institutions of the political organization of society.

The countries of the region are still experiencing serious economic problems, noticeably aggravated during the global financial and economic crisis. In the current conditions, the stable development of the economy is hampered by factors such as

- limited and inconsistent demand,
- weak investment activity,
- lack of internal resources for restructuring and modernization.

It is important to note that the economic lag of the “new” countries from the “old” in the EU was reduced not only due to the relatively rapid economic growth in most CEE

countries, but also due to the growing crisis in developed European countries. Stagnation in the Eurozone, which has reduced the import needs of Western European companies, has turned for CEE countries to a sharp slowdown, and in some cases, a halt in export growth. As a result, in Romania, Croatia, Hungary, the Czech Republic, an economic recession was again noted, and the economy of Bulgaria, Slovenia came into a state of stagnation.

The average GDP growth rate in CEE countries in 2018 reached 4%, which is twice as high as in the Eurozone (table 1), but is not sufficient to bring economies closer together. Despite some success on the path to reform, the gap between the countries of Central and Eastern Europe and the developed Western countries has not been reduced much. According to IMF forecasts, the total GDP of CEE in 2018–2022 will increase by no more than 3% on average per year, lagging behind global economic growth.

Despite a significant share of 11 transforming CEE countries into the EU (40% of 28 countries in the regional block), their economic potential is insignificant: the combined GDP of these countries in 2017 amounted to only 8.5% of EU GDP (table 2).

Table 2. Share of the country's GDP in the total GDP of the EU, 2017 (%)

Poland	3,0	Bulgaria	0,3
Czech Republic	1,3	Croatia	0,3
Romania	1,2	Lithuania	0,3
Hungary	0,8	Latvia	0,2
Slovakia	0,6	Estonia	0,2
Slovenia	0,3	Total	8,5

Source: calculated and compiled by the author based on data from <http://ec.europa.eu/eurostat>.

At the same time, the largest contribution to the total GDP of the EU was made by Poland – 3%, Czech Republic – 1.3%, Romania – 1.2%, Hungary – 0.8%, which in general makes up two thirds of the total GDP of CEE. The remaining economies of this region are marked by scanty shares in the total EU GDP: Slovakia – 0.6%, Slovenia, Bulgaria, Croatia and Lithuania 0.3% each, Latvia and Estonia 0.2% each.

One of the significant problems in the historical evolution of the EU was overcoming the gap between prosperous and lagging regions. However, with each new member of the European Union, it only increased. The great majority of the “new” CEE countries are poorer than the poorest EU members – 15. Of the 105 million people living in the new EU states, more than 98 million live in regions where per capita income is less than 75% of the average for the Union. In order to “pull up” lagging behind, a so-called “rapprochement policy” was carried out: funds were allocated from special rapprochement funds for structural transformations in the underdeveloped regions of the EU.

An acute socio-economic problem for many CEE countries, to some extent, was the outflow of the working population. *The massive migration of labour* from developing countries to the EU-15 exceeded all expectations. Short-term forecasts determined labour migration from East to West of Europe at the level of 300–350 thousand people in the early years of expansion. According to long-term forecasts, the total volume of labour migration was estimated at around 3 million people, that is, only 1.2% of the working population of the Eurozone in 2020. However, this forecast is far from true, according to the World Bank (table 3).

Already the first years of CEE membership have shown that the percentage of labour force from these countries in the EU-15 markets is steadily increasing, especially after a restraining three-year transition period, indicated by some Western European countries (Great Britain, Austria and Ireland). The unemployment rate in the “new” EU countries has decreased not so much because of the increase in the number of employed, as because of the reduction in the number of working population (primarily their new generations), as well as because of significant emigration of citizens to Western Europe after the possibility of free, visa-free movement all-over the EU territory.

Table 3. Dynamics of labour migration from CEE countries, thousand people

	2002	2007	2012	2017	Population for 2018, million
Bulgaria	-85,500	-83,742	-24,472	-24,001	7,024,216
Czech Republic	47,402	250,889	59,997	59,997	10,625,695
Estonia	-18,406	-15,151	-10,516	-4,999	1,320,884
Hungary	61,589	25,150	29,999	29,999	9,768,785
Lithuania	-99,104	-150,930	-146,217	-25,000	2,789,533
Latvia	-72,490	-86,594	-83,325	-50,000	1,926,542
Poland	-183,471	-178,456	-73,997	-50,002	37,978,548
Romania	-468,204	-774,651	-299,997	-150,000	19,473,936
Slovakia	1,199	-8,855	11,346	4,999	5,447,011
Slovenia	14,998	39,348	16,571	6,002	2,067,372
Eurozone	6,731,514	4,671,862	1,929,664	3,318,998	341,783,171
Croatia	-2,580	-10,499	-32,772	-40,000	4,089,400

Source: compiled by the author based on data from the World Bank (<http://www.worldbank.org>).

The maximum outflow of the working population (more than 774 thousand people) was noted in Romania in 2007, when it joined the EU. In subsequent years, migration from Romania decreased, but the country still leads in this indicator in this region. A significant outflow of the population is also observed in the Baltic countries, especially in Lithuania and Latvia, if we take the indicator of the total population of these countries as a basis.

The gloomy situation with the population outflow is not observed in all countries of this region. The Czech Republic, Hungary, Slovenia, and Slovakia became attractive for the influx of labour force from European developing economies. In Poland, the outflow of labour resources is gradually decreasing, for comparison, if in 2002 more than 183 thousand people emigrated, in 2017 – only 50 thousand people (table 3).

The volume of labour migration from CEE is insufficient to significantly affect the structure and levels of wages in the EU labour markets. Of major concern in European recipient countries is migration from third countries. Currently, the population of the European Union is growing due to the influx from third countries, on average by 1 million people per year.

In most CEE countries, labour resources are reduced because of migration outflows and due to the population ageing, which in the near future will lead to a decrease in economic growth and an increase in budget deficits.

A complex characteristic of the integration processes in the economy is the high share (more than 50%) of mutual trade between the states of the integration association. The enlargement of the EU caused a steady increase in commodity flow, the share of intra-regional trade in their total volume in almost all countries, which indicates the strengthening of trade relations with partners in the Union. At the same time, the enlargement led to a reduction in bilateral trade between old partners, fact which shows a slight weakening of trade relations between the countries that make up the core of the EU.

In the group of CEE countries (primarily in Hungary, Slovakia, the Czech Republic), output on the domestic market is declining. These countries have chosen an export-oriented development model. They are trying to fit into the global division of labour, entering foreign markets with their products and, at the same time, giving domestic markets to more competitive foreign goods. For some countries, namely Hungary, the Czech Republic, Slovakia and Slovenia, there is an increase in intra-industry trade with the EU countries (tables 4 and 5). For these countries is observed a narrowing of the gap with the EU-15 countries in industries with intensive use of skills, technologies and R&D, while in Romania, Bulgaria and Poland this gap is not narrowing.

Table 4. The volume of exports of goods and services in CEE countries, % of GDP

	2000	2001	2004	2005	2008	2009	2012	2013	2016	2017	2018
Czech Republic	48,2	49	57,3	62,2	63,2	58,7	76,2	76,9	79,6	79,7	78,8
Hungary	66,7	64,7	59,5	62,5	79,3	74,4	86,4	85,7	89,7	88,2	86,5
Poland	27,2	27,2	34,4	34,6	37,9	37,2	44,4	46,3	52,2	54,3	55,3
Slovenia	50	51,7	55	59,6	66,1	57,2	73,1	74,5	77,8	82,9	85,2
Slovakia	54,1	57,8	68,7	72	80	67,6	91,4	93,8	93,5	96,9	97,3
Romania	21,6	22,1	25,7	24,5	26,2	26	37,4	39,9	41,2	41,5	41,6
Bulgaria	36,5	35,1	41,3	42,9	52,5	42,3	60,8	64,9	64,0	67,4	64,5
Croatia	36,5	38,7	39,5	39,4	38,5	34,5	41,5	42,7	48,7	51,1	51,2
Latvia	36,9	38,1	39,1	43,2	39,5	42,6	61,3	60,3	60	61,1	58,9
Lithuania	38,5	44	47,3	53,8	57,1	51,9	81,6	84,1	74,1	80,9	82,3
Estonia	61,6	61,3	61,5	65,9	66,8	60,8	86	84,3	77,6	76,5	75,2
Eurozone	35,3	35,3	35,1	36,4	39,8	34,9	43	43,2	44	45,4	45,8

Source: compiled by the author based on data from the World Bank (<http://www.worldbank.org>).

Successful adaptation to the capacious and high-tech European market and its requirements has improved the position of EU newcomers in global markets in general. This group of countries began to actively use the EU's communitarian mechanisms to protect their positions in the Union's single internal market, as well as for economic expansion into the markets of third countries. Their share in world exports increased from 1% in 1992 to 2.5% in 2018. On average, only the Czech Republic (+ EUR 10.5 billion), Hungary (+ EUR 4) and Poland (+EUR 3.6 billion) have deficit-free foreign trade and trade within the EU (<http://dealerpride.ru/vnzh/the-countries-of-the-european-union-for-a-year-the-economy>).

Assessing the results of the socio-economic transformation in CEE countries, we are bound to note a significant change in the geographical structure of the foreign trade of these states. The main trading partner for the countries of the region is the European Union

(primarily Germany and France), which account for 50 to 70% of their foreign trade turnover. German firms have strengthened their integration ties with Poland, Slovakia, the Czech Republic, and Hungary. By organizing the production of certain parts and semi-finished products in countries with cheap labour force, German companies significantly reduced their labour costs. This fragmentation of production allowed limiting wage growth in Germany and significantly increasing labour productivity (more than 20%) (Евроинтеграция: влияние на экономическое развитие...). Bonuses for countries engaged in the production of components and integral parts to the West represent corresponding investments and a certain increase in jobs, however, with a significantly lower salary than in Germany.

Economic dynamics in Central and Eastern Europe in the near future will continue to depend on import demand in Western European markets, external sources of financing and cross-border flows of long-term business capital (table 5).

Table 5. The volume of imports of goods and services in CEE and the Eurozone, % of GDP

	2000	2001	2004	2005	2008	2009	2012	2013	2016	2017	2018
Bulgaria	41.8	44.5	52.5	57.6	72.3	50.6	64.0	65.3	59.7	63.7	63.6
Czech Republic	50.0	50.3	56.5	59.8	61.1	54.8	71.4	71.1	71.8	72.2	72.6
Estonia	64.9	65.3	69.4	71.0	70.7	55.8	84.4	81.5	73.5	72.0	71.7
Hungary	70.3	66.0	63.4	64.8	78.9	70.4	79.7	78.7	79.7	80.7	81.7
Lithuania	44.7	49.5	54.4	61.1	68.7	53.6	80.8	82.8	72.8	78.1	79.7
Latvia	44.9	48.4	54.6	57.7	52.5	44.2	65.8	63.9	58.8	61.0	59.5
Poland	33.6	30.8	36.9	35.7	42.9	38.0	44.9	44.4	48.2	50.2	51.9
Romania	26.9	29.8	34.9	34.8	39.0	32.4	42.5	40.7	42.1	43.7	44.9
Slovakia	56.6	65.8	71.4	76.6	82.9	69.1	87.8	89.6	90.5	93.8	95.1
Slovenia	53.7	52.8	56.4	60.2	68.0	55.4	68.9	69.0	68.6	73.2	75.7
Eurozone	34.7	33.9	33.1	34.9	38.6	33.3	40.3	39.8	39.9	41.3	42.1
Croatia	39.6	42.2	45.5	45.5	46.5	38.2	41.1	42.3	46.0	48.8	49.9

Source: Compiled by the author based on data from the World Bank (<http://www.worldbank.org>).

The expansion of the freedom of movement of goods, capital and labour is indeed accompanied by an increase in economic activity, an increase in the similarity of economic structures, a convergence of prices for identical goods and services, an expansion of opportunities for competition and the adoption of skills, technologies, and experience. At the same time, the common European market does not supersede market forces, but, on the contrary, strengthens them.

The full opening of economy to foreign financial capital resulted in the virtually uncontrolled credit expansion of West European banks in the CEE region. The bulk of FDI was not in joint ventures, but in enterprises with 100% foreign participation, which are poorly integrated into the national economy.

The high openness of small transformable economies makes them particularly vulnerable against the backdrop of crisis situations in the global and European economies.

Worsening of the economic situation, external factors that once contributed to their rise automatically turn into brakes.

The unified domestic market, trying to “catch up” the lagging participants, at the same time creates less favourable conditions for them than leaders. This forces the European Union to periodically integrate additional stimulants into the integration mechanism to improve the business and social environment, and to develop special measures as part of a common strategy or policy. Significant funds we received from the EU Funds, in the framework of regional policy, for the period 2007-2013 by such countries as: Estonia – EUR 3.45 billion, Latvia – 4.6, Lithuania – 6.9, Slovakia – 11.6, Romania – 19.7, Hungary – 25.3, Czech Republic – 26.7, Poland – EUR 67.3 billion (Weresa, 2016).

It is important to emphasize that unevenness is inherent in a market economy and, within reasonable limits, is a stimulator of development. Therefore, the European Union does not aim at full equalization and does not transfer the problems of certain regions and categories of the population to the supranational level of government. In fact, the EU is limited to those methods that do not reduce the effectiveness of the market system. When allocating funds, the European Commission adheres to the principle of common benefits: money is allocated for specific projects in which the European Union is interested.

The intervention of the European Union in the implementation of a task, according to the *principle of subsidiarity*, occurs when the expected final effect requires it. The essence of the concept of subsidiarity is that only those issues that cannot be resolved at a lower level should be brought to the highest level of management. Subsidiarity is declared as one of the normative postulates of European integration. National expenditures are replaced by community expenses if the goals of the Union cannot be sufficiently implemented by individual countries and are only successfully achieved at EU level. This mainly happens when financing activities within the framework of a common agricultural policy.

The lessons of the integration association of Europe are in many respects valuable for other developing countries, in the context of their ever-opening global economic environment. Moreover, the influence of the integration process components on the development of lagging members of the group is for the most part contradictory; it cannot be unambiguously defined as positive or negative.

Distinctive features of the socio-economic dynamics of the CEE countries are:

- high level of openness of economies;
- increasing dependence of the socio-economic development of these countries on developed partners for EU integration association;
- focus on external sources of economic growth;
- outflow of labour force;
- reorientation of production from the domestic market to the external one.

CEE countries, despite the obvious successes, are still far from fulfilling the conditions of monetary convergence, according to which the inflation rate and interest rates should be within strict boundaries of the average level of the three member countries of the Union, which have the most stable prices and a stable exchange rate. This implies joining the European system of currency regulation and the inability for two years to exceed the boundaries of the maximum limits of variation (maintaining inflation below 3% and interest rates below 9%).

The convergence between Western and Central Europe, as well as between Eastern and South-eastern Europe, however, may take longer than anticipated. This is because in the

longer term, the growth potential (maximum acceptable production growth expected in the economy) in most European countries is still significantly lower than before the global financial crisis.

With the further development of the CEE countries, the national identity of each of them will grow. Each country faces a unique “set” of problems and needs. The tasks and difficulties that arise in the Czech Republic, Estonia or Slovenia, in their dimension, type and level, are sharply different from the problems of Romania or Poland. Therefore, it is impossible to propose a single “average” development project for all CEE countries.

It is important to note that any integration activity under the influence of many factors, circumstances and interests is interrupted by various disintegration trends (the collapse of the USSR, Brexit, and the transformation of GUUAM into GUAM). It is the interaction of convergent and divergent vectors that acts as an internal source of development and European integration. Moreover, under adverse conditions, “centrifugal” forces clearly prevail over “centripetal” forces.

CEE countries set similar goals and used basically the same approaches and instruments of integration policy. However, despite this, over the past years they have not been able to achieve equally successful results (table 6). The reason for this was both different starting conditions, and miscalculations, errors of leaders that were governing the country. In many respects, the determining factor in the success of a particular sector of the economy was foreign investment, combined with government policy in creating the necessary climate and legal framework for investor interaction. In the foreseeable future, the economic dynamics in Central and Eastern Europe will continue to depend to a decisive extent on the demand for imports in Western European markets, external sources of financing, and cross-border flows of long-term business capital.

Table 6. Classification of CEE and Eastern Europe by income, GNI / per capita in 2018, according to World Bank criteria ([https://blogs.worldbank.org/opendata/...](https://blogs.worldbank.org/opendata/))

High-income countries, > USD 12055	Upper middle income countries, USD 3996-12375
Slovenia..... 24580	
Estonia 21140	
Czech Republic.... 20240	Romania 11290
Slovakia 18260	Bulgaria 8860
Lithuania..... 17430	
Latvia..... 16510	Belarus 5670
Hungary..... 14780	
Poland..... 14100	
Croatia 14000	
Lower-middle-income countries, USD 1026-3995	Low Income Countries, < USD 1026
Moldova 2980	*****
Ukraine 2660	

Source: compiled by the author on the basis of the analytical classification and the World Bank database (<http://www.worldbank.org/> The World Bank: Gross National Income per Capita 2018).

New EU countries today, as never before, are far from the Maastricht criteria for monetary convergence, the compliance with which is a prerequisite for joining the currency union. This applies to inflation, to interest rates, budget deficits, and, in the case of Hungary, to public debt (more than 70% of GDP).

So, the processes of European economic integration are ambiguous in their consequences. Countries that play a leading role in regional unions have more positive than negative effects of integration. For less developed countries, the situation is reversed. Therefore, the euphoria and rainbow myths are being replaced by a critical assessment of European integration as an internally contradictory phenomenon, with a serious opposition to the interests of players.

In order to ensure national competitiveness and security, it is necessary to ensure the diversification of the forms and directions of integration processes. *Only balanced, taking into account national interests, decisions and actions with partners on integration projects can ensure real promotion of countries with emerging markets.*

REFERENCES

- Eurostat electronic database [Electronic resource] URL. Access on the internet: <http://ec.europa.eu/eurostat>.
- Grigas, A. (2013). *The baltic states in the eu: yesterday, today and tomorrow*. Studies & reports, july.
- Guerrieri, P. (2012). *Intra-European Imbalances: the Need for a Positive-sum-game Approach*. International Economics, and December.
- <http://dealerpride.ru/vnzh/the-countries-of-the-european-union-for-a-year-the-economy>.
- <https://blogs.worldbank.org/opendata/new-country-classifications-income-level-2019-2020>.
- <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD>.
- Weresa, M.A. (2016). *Competitiveness report 2016 the role of economic policy and institutions*. Warsaw: Copyright by the Warsaw School of Economics.
- World Bank Group/ Всемирный банк. Access on the internet: <http://www.worldbank.org>.
- Глинкина, С.П., Куликова, Н.В., Синицина, И.С. (2014). *Страны Центрально-Восточной Европы: евроинтеграция и экономический рост.*- Москва. Институт экономики.
- Евроинтеграция: влияние на экономическое развитие Центральной и Восточной Европы. Доклады Института Европы. № 303. М., 2014.

DOI: 10.7862/rz.2020.mmr.9

The text was submitted to the editorial office: March 2020.

The text was accepted for publication: March 2020.

Ludmila STEPASYUK¹
Zoia TITENKO²

FINANCIAL AND ORGANIZATIONAL IMPLEMENTATION OF STATE SUPPORT FOR LIVESTOCK PRODUCERS

The article is devoted to the study of the state financial support to the livestock industry, which occupies a strategically important niche in the overall structure of agricultural production. The peculiarities and problems of providing financial support to livestock producers are analyzed. It has been proven that effective public financial support for the livestock industry should be based on well-defined strategic goals and development indicators that will capture new markets for livestock products and help improve the competitiveness of products. The article emphasizes that the initial priorities of the state support of animal husbandry of Ukraine are: improvement of the financial and credit and investment policy of the state in the issues of accelerated increase of livestock of cattle and production of quality products by agricultural enterprises.

The purpose of the article is to analyze the state of financial support for the livestock industry and to substantiate measures for its improvement.

Keywords: animal husbandry, government support, agricultural production, budgetary funds, the agricultural sector of the economy.

1. INTRODUCTION

In solving the problem of food supply to the population, a special role belongs to the livestock industry, as the main supplier of products – sources of proteins of animal origin. Instead, the domestic livestock industry is in a dispersive state, which gives reason to speak not of its development but a revival, as a priority task of the macroeconomic agrarian policy of the state (Yemtsev, 2012).

Effective development of the livestock industry contributes to the strategically important tasks, including a secured supply of the population with quality food; improving life in rural areas and income citizens; curbing the negative tendencies of rural depopulation; ensuring the development of rural social infrastructure. Given the

¹ Ludmila Stepasyuk, PhD in Economics, Associate professor of the Department of Economics of Enterprise, National University of Life and Environmental Sciences of Ukraine; e-mail:ludastepasuk@gmail.com. ORCID: 0000-0002-4820-9132.

² Zoia Titenko, PhD in Economics, Associate professor of the Department of Finance, National University of Life and Environmental Sciences of Ukraine; e-mail:zoyateslenko@ukr.net (corresponding author). ORCID: 0000-0001-5816-5519.

importance of the industry, it must be closely monitored by the state, since it requires operational state support, the extent of which depends on the current situation in the industry.

First of all, it is important to understand what is hindering the development of animal husbandry in Ukraine, which, by the way, is more than 38% in the structure of gross agricultural production. One of the main factors that have the negative impact on its development is the lack of stability and state support for agricultural producers, unpredictable pricing policies, low export potential and, as a consequence, the absence of markets. All this hurts the industry. Foreign investors are afraid to invest their funds given the volatile economic and political situation in the country. If poultry and pig breeding are more or less attractive for investment because of the specific nature of production, because in a relatively short time it is possible not only to return the money invested but also to make a profit, then the development of animal husbandry requires additional government intervention. Experts and even the manufacturers themselves understand that it takes a long time to repay the investment, not to mention the extra profit (6–7 years). And in an unstable economic situation, it is quite risky.

In recent years, agro holdings have been developing at a faster rate as they have the financial and technical capacity to implement modern technologies and produce quality products. And although cattle numbers are steadily declining, livestock productivity is increasing. However, at present the state has decided to take seriously the revival of livestock breeding and is beginning to take slow steps to increase livestock (Synyavina, 2015).

2. LITERATURE REVIEW

The problem of state support for agriculture and identifying ways to improve its efficiency has always been urgent. Therefore, a considerable number of works of leading domestic agrarian economists are devoted to the issues of state financial support for agriculture and in particular animal husbandry, among them P.I. Haydutsky (Haydutsky, 2017), O.M. Galitsky (Galitsky, 2016), R.E. Demchak (Demchak, 2015), S.O. Kushnir (Kushnir, 2017), Yu.O. Lupenko (Lupenko, Tulush, 2016), V.Ya. Mesel-Veselyak (Mesel-Veselyak, Fedorov, 2016), O.V. Panuhnik (Panukhnik, 2017), L.D. Tulush (Tulush, 2017) and Yu.O. Ulyanchenko (Ulyanchenko, 2013). However, the current state of the livestock industry and aspects of its state support need constant monitoring to make decisions about its effectiveness.

The study found that legal and economic research conducted by foreign and domestic scientists over a long period reaffirmed the need for state support for the agrarian sector of the economy to ensure the economic security of the state and the effective development of agriculture.

3. METHODOLOGY

The methodological basis of the study is a systematic approach to defining the fundamental provisions of the theory of state financial support for animal husbandry, as a strategically important field of agricultural production. In the course of the research, a suitable complex of methods was used: dialectical and abstract – logical (for theoretical generalization and formulation of conclusions), economic-statistical (for characterizing the current state of the industry), monographic (for illuminating the views of scientists on

problems and categories), economic-statistical (for a comprehensive assessment of financial support for the livestock industry) and graphical method.

4. CASE STUDIES

Government support for the livestock sector is the lion's share of the total support. The total budget for this program is 4 billion UAH.

Budget funds are allocated for state support in the following areas:

1) partial compensation of interest rate on bank loans involved to cover the costs associated with the activities in the fields of sheep, goat, beekeeping, fur farming, rabbit breeding, silkworms, and aquaculture – partial compensation of interest rates on bank loans and interest paid in the current year amounting to 1.5 of the National Bank discount rate);

2) partial compensation for the cost of construction and reconstruction of livestock farms and complexes, milking parlors, agricultural processing enterprises in terms of costs financed by bank loans (the amount of compensation – 25% of the loan body);

3) a special budget grant for keeping cows of dairy, dairy and meat and meet direction;

The grant is provided on a non-refundable basis twice a year to economic entities that are legal entities for each available identified and registered cow as of January 1 and July 1 of the current year in the amount of 750 UAH per head.

4) special budget subsidy for rearing cattle born in the farms of individuals given to individuals every four months keeping young cattle for age young to 13 months of age up to 2.5 thousand. UAH per head young in ;

5) partial reimbursement of the value purchased for further reproduction of breeding animals, namely heifers, calf, dairy cows, dairy and meat products, female pigs and male pigs, ewes, rams, boars and cattle and embryos of cattle and embryos having a breeding (genetic) value;

6) partial reimbursement of the cost of construction and reconstruction of livestock farms and complexes, milking parlors, agricultural processing enterprises (*Resolution of the Cabinet of Ministers of Ukraine, 2018*).

Partial reimbursement of the objects is provided to the entities on a non-refundable basis in the amount of 30 percent of the value of the object up to 500 million UAH of the total value of such object (excluding value-added tax), completed in the current year stages of construction and reconstruction of livestock farms and complexes for cattle, pigs, poultry (including waterfowl and turkeys), milking parlors, agricultural processing enterprises (milk, meat, animal by-products spare belonging to Category II), including the cost of equipment in accordance with the design and estimate documentation, and for objects with a higher cost - 30 percent of the 500 million UAH.

To support the development of livestock industries in 2018. from the general fund of the state budget was provided appropriations in the amount of 2401 million UAH. But actually directed recipients 2389844 thous., i.e., approximate remains of unused funds amounted to – 11 156 thousand UAH , or less than 0.5%. It should be noted , that the highest percentage of not used funds and is 3.2% reached in the program „Compensation cost facilities, financed by funds of bank loans” (Table 1).

Table 1. State of disbursement of funds of the General Fund of the state budget provided for supporting the development of livestock industries, 2018

Program / direction	Plan allocations for 2018 year	Adopted decisions regarding payments support		The balance not used funds
		Total	It is actually aimed at the recipients	
State support to the livestock sector, incl.	2 401 000	2 393 294,8	2 389 844,2	11 155,8
Partial offsetting of interest rates on bank loans	4 000,00	3 747,70	3 747,70	252,3
Compensation cost of facilities, financed by funds of bank loans	65 000,00	62 926,10	62 926,10	2 073,90
Special budget subsidy for keeping cows	515 000,0	514 503,8	511 836,6	3 163,4
Special budgetary subsidies for cultivation of young great horned cattle	322 000,0	320 864,9	320 081,4	1 918,6
Partial reimbursement of value purchased for further reproduction of breeding animals	215 000,0	214 572,5	214 572,5	427,5
Partial reimbursement of objects	1 280 000,00	1 276 679,9	1 276 679,9	3 320,1

In the structure of expenditures on state support for the development of livestock and the highest share occupied expenditure for partial reimbursement of the cost of objects of fixed assets, and it is – 53.4%, that amounts 1 276 680 thousand (Fig. 1).

The share of the special budgetary subsidy for keeping cows and the budgetary subsidy for growing young cattle is 21.4% and 13.4% respectively, which in monetary terms is 511 836 thousand UAH and 320 081 thousand UAH, respectively. All other payments account for less than 10% of total payments. Thus, the share of reimbursement of the value of purchased for further reproduction of breeding animals is 9% or 214 572 thousand UAH, compensation for the value of objects financed by bank loans – 2.6% or UAH 62 926 thousand. The lowest proportion of specific weight occupies a partial compensation of interest rates on bank loans – 0.2% or 3747 thousand UAH.

Experts believe that it is appropriate to control the size of government support in one entity trends: „Partial compensation of the cost of construction and reconstruction of livestock farms and complexes, milking parlors, enterprises on processing agricultural products in terms of cost, excluding VAT funded by bank loans” and „Partial reimbursement of the cost of construction and reconstruction of livestock farms and complexes, milking parlors, agricultural products processing enterprises” and must be substantially limited in order to prevent the use of state support of a narrow range of companies.

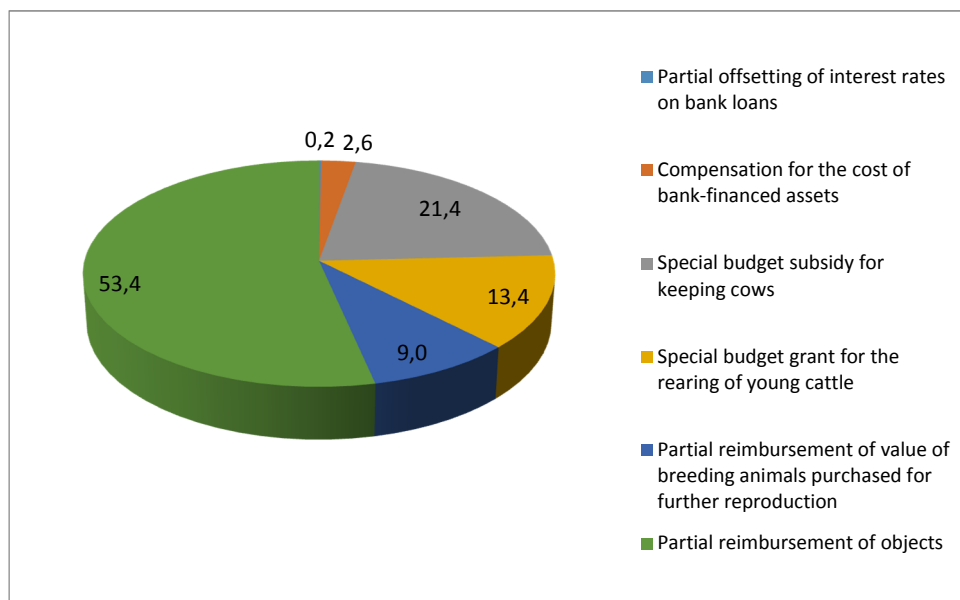


Fig. 1. Structure of expenditures on state support for livestock industries, 2018%

Any areas of state support for the livestock sector should operate as much as possible without the involvement of state commissions, which in practice delay decisions on the granting of such state support and limit the involvement of the interested public.

Although state support for the livestock sector has been provided for since 2018, the pig industry itself has been left out of the state's attention, although pork producers, like other farmers, have suffered through the abolition of quasi-accumulation of VAT, and have also been systematically harmed by African losses swine fever and „black” pork imports. Thus, in 2020, the support of pork producers in the form of a budget subsidy for keeping pigs in the industry, at least at the rate of 2 UAH per kilogram of pork, must be provided. Analysis of the state of use of budget funds under the program „State support for animal husbandry” in 2018 indicates that most of the funds were actually directed to partial reimbursement of the value of fixed assets – 1 276 679.9 thousand UAH, it should be noted that in this direction the largest amount of unused funds, namely – 3320 thousand UAH. It should be noted that in the direction of the special budgetary subsidy for keeping cows, the amount of unused funds is quite significant and amounts to 3163.4 thousand UAH, but in percentage it is only 0.6% of the actually planned appropriations. In Artaud noted the program „Partial compensation interest rates on bank loans” and „Compensation cost of facilities financed by bank loans” in which the balance of unused funds 252.3 thousand UAH and 2 079.3 thousand UAH, which is 6.7% and 3.3% of the funds actually directed to economic entities. The best use of money is traced to expenses such as partial reimbursement of the value purchased for further reproduction of breeding animals and a special budget grant for the rearing of young cattle. Thus, in 2018, only 0.2% and 0.6% respectively were not used in these areas (Fig. 2).

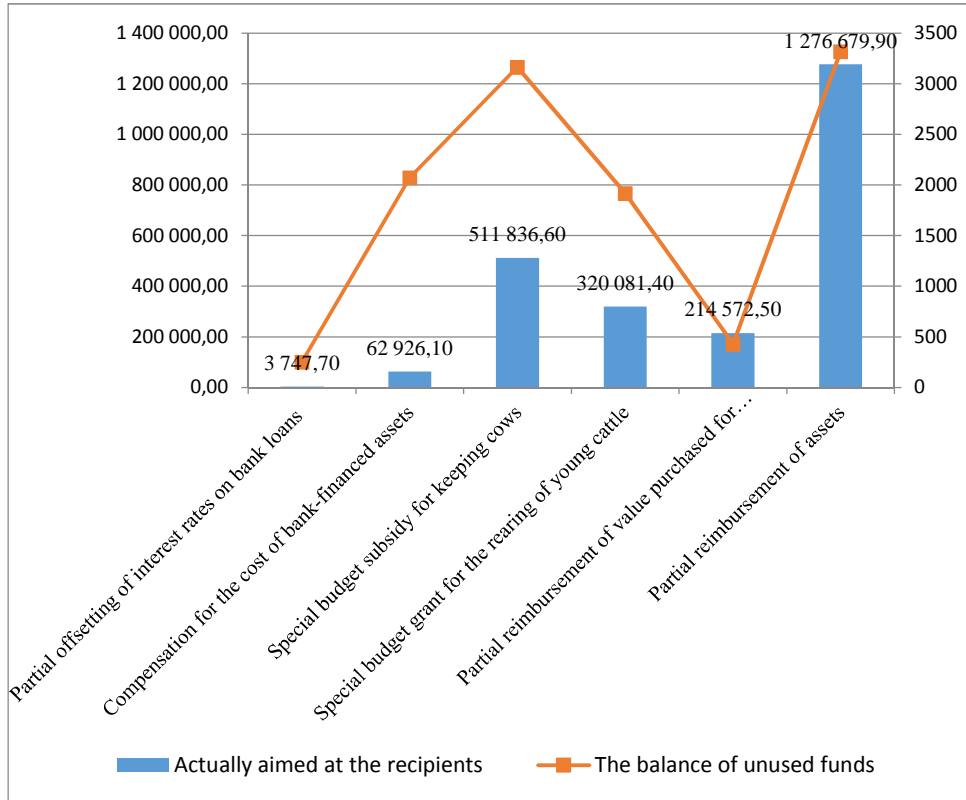


Fig. 2. State of use of budget funds under the program "State support for animal husbandry", 2018

Studies show that, unlike other government support programs, the repayment of funds by banks occurs in only two ways, namely partial compensation of interest rate on bank loans and partial compensation of the cost of construction and reconstruction of objects financed by bank loans.

Entities who have denominated in national currency in resident banks of Ukraine, who have signed a Memorandum of Understanding on a common basis for cooperation: short-term loans (except overdrafts) and credit lines reimbursement of production costs; medium- and long-term (non-revolving) loans to cover capital (investment) expenses. This applies only to loans raised to cover the costs incurred before activity in sheep, goat farming, beekeeping, animal farming, rabbit farming, sericulture and aquaculture.

The analysis of financial support for the development of the livestock sector in the context of banks shows that only 6.06% of the total state support to the agrarian sector was allocated to this program by the list of banks listed. Most of the funds, namely 63 096 thousand UAH, were paid out by other banks that did not fit into the aforementioned aggregate, which is 98.4% of the total payments of the bank. PJSC „Ukrex-Simbank” makes the least money – 179 thousand UAH (Fig. 3).

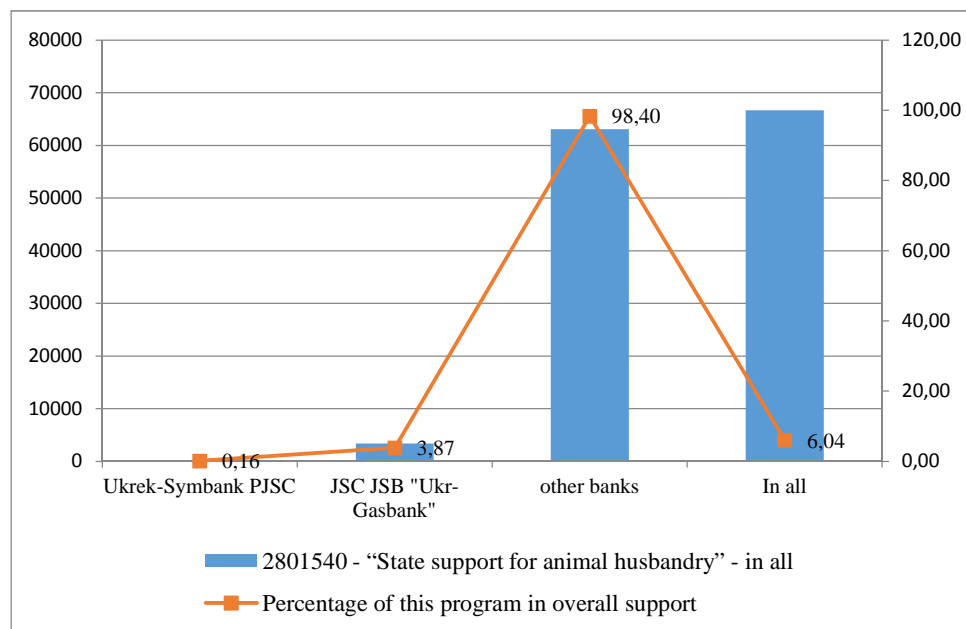


Fig. 3. Banking Support for Livestock Breeding, 2018

Higher growth rates of cattle in areas where agricultural holdings are stronger are not accidental and have a positive impact. In Ukraine, there are programs at the national and regional levels to support the purchase of dairy cattle (heifers) by enterprises for the replenishment of dairy herds. Consequently, the prospects of profitable sales of livestock farms in such regions are much higher, and the combination of several livestock support programs produces a certain synergistic effect.

The practice of modern state support for agrarians in Ukraine shows that there is an imperfect and non-transparent mechanism for selecting enterprises for compensation and subsidies, as a result of these types of support do not encourage owners to invest their own funds and invest in innovative technologies and equipment, which results in reduced production and cost increase its efficiency. Also, an under stat come now regulated pricing is the issue, as the situation in our country remains unchanged when the commodity is not to receives income, and while large companies are reselling profits.

The bulk of the funds invested in the State Budget for the support of the agroindustrial complex in 2018 (4 billion UAH or 28.3% of all resources) is directed to support livestock. In the second place in terms of financing – support for agriculture – in this direction allocated 1 billion UAH (7.1% of the total).

To establish the mechanism of state support, as the experts point out, it is necessary to determine the right to receive a budget grant for the maintenance of cows and pigs not only to legal entities but also to natural persons-entrepreneurs who own cows and pigs, in order not to repeat the previous disadvantages of the direction of state support for maintenance cows, when only legal persons were entitled to it.

In addition, state support such as „Partial compensation for interest rates on bank loans raised to cover the costs associated with pursuing activities in the fields of sheep, goat,

beekeeping, breeding, rabbit farming, silkworm and aquaculture (fisheries)” also include a very important support tool for producers – offsetting interest on working capital loans, and not just for sheep, goat, beekeeping, horse breeding, rabbit breeding, silkworm, aqua ultra, but also pig breeding and animal husbandry. State support „Partial compensation for the cost of construction and reconstruction of livestock farms and complexes, in part of costs financed without VAT from bank loans” and "Partial reimbursement of the cost of construction and reconstruction of livestock farms and complexes” must be added to the construction of enterprises infrastructure of livestock complexes (technological feed mills and workshops, feed mills) to increase localization of its own production of feed, which is currently insufficient.

5. CONCLUSION

Therefore, in the domestic market of livestock products is unstable, both in terms of prices and quantitative indicators. Its main trend is the decline in manufacturing output and constant these new variations.

In the current economic environment, producers are not able to independently increase production to the size necessary to meet the needs of the population for food. Therefore, effective state regulation of livestock is required. The volume of state financial support for agrarians in Ukraine is growing annually, but it is almost impossible to assess the role of subsidies in the development of the agricultural sector. Some argue in favor of this form of support for producers, on the other hand – subsidies and particularly opaque mechanisms of payment of the state budget are often turned into funds for supporting inefficient farms since they negate the incentives to improve production efficiency, in particular, lower cost, productivity, and product quality. Low returns on providing subsidies in Ukraine is also due to irregularities in the use of budget funds in the district and as a result, domestic manufacturers have unequal access to them. Large agricultural enterprises have significant advantages in this regard, being able to obtain in due time the necessary information and access to the structures dealing with the distribution of public financial resources. Given this, this industry is in need of substantial government support that would shape economic attractiveness of cattle production, and contribute to expanded reproduction of livestock. All of this utilities can reduce the payback period of investment in the sector.

REFERENCES

- Demchak, R.E. (2015). *Conceptual principles of decentralization of state regulation of socio-economic development*. Proceedings of the National University of the State Tax Service of Ukraine, № 1.
- Galitsky, O.M. (2016). *State regulation of agricultural production of the national economy in the context of European integration. Bulletin of Sumy National Agrarian University series "Economics and Management"*, No. 8 (69).
- Haydutsky, P.I. (2017). *State support as a factor in regulating the domestic agricultural machinery market in Ukraine*. Bulletin of Kharkiv National Agrarian University B.B. Dokuchaev, №2.
- Kushnir, S.O. (2017). *State support of agroindustrial complex. „Ukrainian Journal of Applied Economics"*, Vol. 2, Issue 1.

- Lupenko, Yu.O., Tulush, L.D. (2016). *Taxation of agriculture in the conditions of transformation of special tax regimes*. Economics of AIC, № 1.
- Mesel-Veselyak, M.Ya., Fedorov, M.M. (2016). *Strategic directions of development of the agrarian sector of the economy of Ukraine*. „APK economy”, № 6.
- Panukhnik, O.V. (2017). *State support for agrarian subjects*. „Actual problems of an innovative economy”, № 1.
- Resolution of the Cabinet of Ministers of Ukraine* (2018). „On Approving the Procedure of Using the Funds Provided in the State Budget to Support Livestock, Storage and Processing of Agricultural Products, Aquaculture (Fisheries)” of February 7, No. 107.
- Synyavina, Y.V. (2015). *Economic evaluation of the state of livestock and support its development*. Economic analysis. Volume 19. No. 3. P.134
- Tulush, L.D. (2017). *Quasi-accumulation of VAT as a tool to stimulate the development of priority salt velocity household activities*. Proceedings of Uman National University of Horticulture, № 91.
- Ulyanchenko, Yu.O. (2013). *Competitiveness of the agrarian sector of the economy: mechanisms of state regulation* : [monograph]. X.: Publication of the Association of Doctors of Sciences in Public Administration, 368 p.
- Yemtsev, V. (2012). *Livestock industry in Ukraine: current state, problems and development prospects*. „Livestock breeding in Ukraine”, № 12.

DOI: 10.7862/rz.2020.mmr.10

The text was submitted to the editorial office: March 2020.

The text was accepted for publication: March 2020.

ADDITIONAL INFORMATION

The Journal annually publishes a list of reviewers: in the last issue of the quarterly - no. 4/2020 and on the website:

<http://oficyna.prz.edu.pl/pl/zeszyty-naukowe/modern-management-review/>
<http://mmr.prz.edu.pl/pl/recenzenci-wspolpracujacy/>

Previous name of the Journal: *Zarządzanie i Marketing*, ISSN 1234-3706

<http://oficyna.prz.edu.pl/pl/zeszyty-naukowe/zarzadzanie-i-mar/>
<http://mmr.prz.edu.pl>

The Journal uses as described on its website the procedure for reviewing:

<http://oficyna.prz.edu.pl/pl/zasady-recenzowania/>
<http://mmr.prz.edu.pl/pl/dla-recenzentow/>

Information for authors available at:

<http://oficyna.prz.edu.pl/pl/informacje-dla-autorow/>
<http://mmr.prz.edu.pl/pl/dla-autorow/>

Review's form available at:

<http://oficyna.prz.edu.pl/pl/zeszyty-naukowe/modern-management-review/>
<http://mmr.prz.edu.pl/pl/dla-recenzentow/>

Instruction for Authors:

<http://oficyna.prz.edu.pl/pl/instrukcja-dla-autorow/>
<http://mmr.prz.edu.pl/pl/dla-autorow/>

Contact details to Editorial Office available at:

<http://oficyna.prz.edu.pl/pl/zeszyty-naukowe/modern-management-review/>
<http://mmr.prz.edu.pl/pl/redakcja-mmr/>

Electronic version of the published articles available at:

<http://oficyna.prz.edu.pl/pl/zeszyty-naukowe/modern-management-review/>
<http://mmr.prz.edu.pl/pl/wersja-elektroniczna/>

Reviewing standards, information for authors, the review form, instruction for authors and contact details to MMR Editors and to Publishing House are also published in the fourth number of *Modern Management Review*, no. 27 (4/2020).

