ISSN 2518-1998 (Print)
ISSN 2663-5097 (Online)

BULLETIN
OF THE KARAGANDA UNIVERSITY

ECONOMY
Series

№ 4(108)/2022

ISSN 2518-1998 (Print)
ISSN 2663-5097 (Online)
Индексі 74624
Индекс 74624

ҚАРАҒАНДЫ УНИВЕРСИТЕТІНІҢ

ХАБАРШЫСЫ

ВЕСТНИК КАРАГАНДИНСКОГО УНИВЕРСИТЕТА

BULLETIN OF THE KARAGANDA UNIVERSITY

ЭКОНОМИКА сериясы

Серия ЭКОНОМИКА

ECONOMY Series

№ 4(108)/2022

Қазан–қараша–желтоқсан
30 желтоқсан 2022 ж.
Октябрь–ноябрь–декабрь
30 декабря 2022 г.
October–November–December
December, 30th, 2022

1996 жылдан бастап шығады
Издается с 1996 года
Founded in 1996

Жылына 4 рет шығады
Выходит 4 раза в год
Published 4 times a year

Қарағанды, 2022
Караганда, 2022
Karaganda, 2022

Бас редакторы
экон. ғыл. канд.
Ж.С. Хусаинова

Жауапты хатшы
PhD д-ры
А.Н. Ламбекова

Редакция алқасы

А.В. Бабкин,	экон. ғыл. д-ры, Ұлы Петрдің Санкт-Петербург политехникалық университеті, Ресей;
Б.С. Есенгелдин,	экон. ғыл. д-ры, Қазақ экономика, қаржы және халықаралық сауда университеті, Астана, Қазақстан;
С.Г. Симонов,	экон. ғыл. канд. Тюмень индустриалды университеті, Ресей;
А. Агапова,	PhD, Флоридалық Атлант университеті, Бока-Ратон, АҚШ;
М. Ахунов,	PhD, Вусонг университеті, Тэджон, Оңтүстік Корея;
Д.А. Ситенко,	академик Е.А. Бөкетов атындағы Қарағанды университеті, Қазақстан;
Я. Собон,	экон. ғыл. д-ры, Гожув-Велкопольскидегі Джейкоб Парадис университеті, Польша;
Л. Тылл,	PhD, Прагадағы жоғары экономика мектебі, Чех Республикасы;
Е. Борзенко	қонақ редактор, эконом. ғыл. д-ры, проф., Украина ҰҒА Экономика және болжау институты, Киев; Ланьчжоу университетінің профессоры, Қытай

Редакцияның мекенжайы: 100024, Қазақстан, Қарағанды қ., Университет к-сі, 28
Tel.: +7 775 471 5171 (ішкі 1026); факс: (7212) 35–63–98.
E-mail: bulletin.ksu.economy@gmail.com. Web-site: economy-vestnik.ksu.kz

Атқарушы редактор
PhD д-ры **Г.Б. Саржанова**

Редакторлары
Ж.Т. Нурмуханова, С.С. Балкеева, И.Н. Муртазина

Компьютерде беттеген
М.С. Бабатаева

Қарағанды университетінің хабаршысы. «Экономика» сериясы.
ISSN 2518-1998 (Print). ISSN 2663-5097 (Online).
Меншік иесі: «Академик Е.А. Бөкетов атындағы Қарағанды университеті» КЕАҚ.
Қазақстан Республикасы Ақпарат және қоғамдық даму министрлігімен тіркелген. 30.09.2020 ж. № KZ86VPY00027387 қайта есепке қою туралы куәлігі.

Басуға 29.12.2022 ж. қол қойылды. Пішімі 60×84 1/8. Қағазы офсеттік. Көлемі 31,0 б.т. Таралымы 200 дана. Бағасы келісім бойынша. Тапсырыс № 146.

«Акад. Е.А. Бөкетов ат. Қарағанды ун-ті» КЕАҚ баспасының баспаханасында басылып шықты.
100024, Қазақстан, Қарағанды қ., Университет к-сі, 28, тел.: 8(7212) 35–63–16. E-mail: izd_kargu@mail.ru

© Академик Е.А. Бөкетов атындағы Қарағанды университеті, 2022

Главный редактор
канд. экон. наук
Ж.С. Хусаинова

Ответственный секретарь
д-р PhD
А.Н. Ламбекова

Редакционная коллегия

А.В. Бабкин,	д-р экон. наук, Санкт-Петербургский политехнический университет Петра Великого, Россия;
Б.С. Есенгельдин,	д-р экон. наук, Казахский университет экономики, финансов и международной торговли, Астана, Казахстан;
С.Г. Симонов,	канд. экон. наук, Тюменский индустриальный университет, Россия;
А. Агапова,	PhD, Флоридский Атлантический университет, Бока-Ратон, США;
М. Ахунов,	PhD, Университет Вусонг, Тэджон, Южная Корея;
Д.А. Ситенко,	PhD, Карагандинский университет имени академика Е.А. Букетова, Казахстан;
Я. Собонь,	д-р экон. наук, Университет бизнеса в Гожуве-Велькопольском, Польша;
Л. Тылл,	PhD, Высшая школа экономики в Праге, Чехия;
Е. Борзенко	гостевой редактор, д-р экон. наук, проф., Институт экономики и прогнозирования НАН Украины, Киев, Украина; Ланьчжоуский университет, Китай

Адрес редакции: 100024, Казахстан, г. Караганда, ул. Университетская, 28
Tel.: +7 775 471 5171 (внутр. 1026); факс: (7212) 35–63–98.
E-mail: bulletin.ksu.economy@gmail.com. Web-site: economy-vestnik.ksu.kz

Исполнительный редактор
д-р PhD **Г.Б. Саржанова**

Редакторы
Ж.Т. Нурмуханова, С.С. Балкеева, И.Н. Муртазина

Компьютерная верстка
М.С. Бабатаева

Вестник Карагандинского университета. Серия «Экономика».
ISSN 2518-1998 (Print). ISSN 2663-5097 (Online).
Собственник: НАО «Карагандинский университет имени академика Е.А. Букетова».
Зарегистрировано Министерством информации и общественного развития Республики Казахстан. Свидетельство о постановке на переучет № KZ86VPY00027387 от 30.09.2020 г.

Подписано в печать 29.12.2022 г. Формат 60×84 1/8. Бумага офсетная. Объем 31,0 п.л. Тираж 200 экз. Цена договорная. Заказ № 146.
Отпечатано в типографии издательства НАО «Карагандинский университет имени академика Е.А. Букетова». 100024, Казахстан, г. Караганда, ул. Университетская, 28, тел.: 8(7212) 35–63–16. E-mail: izd_kargu@mail.ru

© Карагандинский университет им. акад. Е.А. Букетова, 2022

Chief Editor
Cand. of economic sciences
Zh.S. Khussainova

Responsible secretary
PhD
A.N. Lambekova

Editorial board

A.V. Babkin,	Doctor of economic sciences, Peter the Great St. Petersburg Polytechnic University, Russia;
B.S. Yessengeldin,	Doctor of economic sciences, Kazakh University of Economics, Finance and International Trade, Astana, Kazakhstan;
S.G. Simonov,	Candidate of economic sciences, Industrial University of Tyumen, Russia;
A. Agapova,	PhD, Florida Atlantic University, Boca Raton, USA;
M. Ahunov,	PhD, Woosong University, Daejeon, South Korea;
D.A. Sitenko,	PhD, Karaganda University of the name of academician E.A. Buketov, Kazakhstan;
J. Sobon,	Doctor of economic sciences, The Jacob of Paradies University, Poland;
L. Tyll,	PhD, University of Economics, Prague, Czech Republic
O. Borzenko	Guest lecturer, Doctor of economic sciences, Proffessor, Institute of Economy and Forecasting, NAS of Ukraine, Kyiv, Ukraine; Professor of Lanzhou University, China

Postal address: 28, University Str., 100024, Karaganda, Kazakhstan.
Tel.: +7 775 471 5171 (add. 1026); fax: (7212) 35-63-98.
E-mail: bulletin.ksu.economy@gmail.com. Web-site: economy-vestnik.ksu.kz

Executive Editor
PhD **G.B. Sarzhanova**

Editors
Zh.T. Nurmukhanova, S.S. Balkeyeva, I.N. Murtazina

Computer layout
M.S. Babatayeva

Bulletin of the Karaganda University. «Economy» series.
ISSN 2518-1998 (Print). ISSN 2663-5097 (Online).

Proprietary: NLC "Karaganda University of the name of acad. E.A. Buketov"

Registered by the Ministry of Information and Social Development of the Republic of Kazakhstan. Rediscount certificate No. KZ86VPY00027387 dated 30.09.2020.

Signed in print 29.12.2022. Format 60×84 1/8. Offset paper. Volume 31,0 p.sh. Circulation 200 copies. Price upon request. Order № 146.

Printed in the Publishing house of NLC "Karaganda University of the name of acad. E.A. Buketov".
28, University Str., Karaganda, 100024, Kazakhstan. E-mail: izd_kargu@mail.ru

© Karaganda University of the name of academician E.A. Buketov, 2022

МАЗМҰНЫ — СОДЕРЖАНИЕ — CONTENT

DOI 10.31489/2022Ec4/7-14
JEL: J21
UDC 519.86

M.B. Akramov[1*], A.N. Nuralizoda[2], U.M. Vohidov[3], N.N. Nuralizoda[4]

[1]MICIC Dushanbe, Tajikistan;
[2,3] The Tajik state university of finance and economics, Dushanbe, Tajikistan;
[4]TNU, Dushanbe, Tajikistan
[1]akramov60@mail.ru, [2]amrullon@mail.ru, [2]umarv@mail.ru, [3]a230292@mail.ru

[1]https://orcid.org/0000-0001-7155-7410, [2]https://orcid.org/0000-0002-7853-0226
[2]https://orcid.org/0000-0002-8343-6656, [3]https://orcid.org/0000-0003-1271-2198

[1]Scopus Author ID 57431095100

Modeling of unstable economic systems based on the distribution of the population engaged in the economy of Tajikistan

Abstract

Object: The purpose of this study is to analyze and develop a mathematical model of the distribution of the employed population in the economy of the Republic of Tajikistan, according to the types of economic activity using the Sigma Plot program.

Methods: In the present study the mathematical and statistical modeling of the distribution of the population employed in the economy of the Republic of Tajikistan is used. Modern computer technologies and programs create opportunities for developing and verification of new models and also help to improve model-based research methods, as well as the methods for analysis and presentation of simulation results.

The narrowly professional use of modeling methods is giving way to the wide use of simulation models based on modern computer programs. And there is an inevitable need to put the issue of development of modeling in the context of real-life issues and interpretation of its fundamental concepts.

Findings: For the proposed models the mathematical regression equations are obtained and the coefficients of these equations are calculated using computer programs. By the proposed mathematical and statistical models the ratio of the employed population and the unused labour force in the Republic of Tajikistan is calculated. The results showed that in order to accelerate the industrialization of the country and ensure the sustainable development of industry, it is necessary to take into account this ratio in the country.

Conclusions: The developed mathematical model in the present work has been applied to show the dynamics of changes in the employed and unemployed labour force in the Republic of Tajikistan for the period 2006-2022. Consequently, we showed the possibility of using the unused labour force in order to solve one of the strategic goals of the republic, that is, the accelerated industrialization of the country.

Keywords: model, employment, economic systems, applied programs, schedule, regression, Labor resources.

Introduction

Mathematical models serve as a means of knowing the patterns and properties of the behavior of the original object by creating its image (substitute object), expressed in mathematical form.

Mathematical modeling is the process of establishing correspondence with a given real economic object of its mathematical model, studying the model by means of mathematics and interpreting the results in terms of the original mathematics.

A stochastic (non-deterministic, probabilistic) model is a mathematical model for which the parameters, operating conditions and characteristics of the state of the simulated object are represented by random variables and are connected by random dependencies.

Literature Review

Traditional problems of probability theory and mathematical statistics can be considered as the simplest problems of stochastic modeling, since they involve the analysis (by means of mathematics) of processes and phenomena of a random nature (Kucheryavy V.I., Milkov S.N., 2010; Kamenev G. K., Kamenev I. G. 2020; Kotliarova1 E.V. et al, 2021; Tleulesov A.K.. et al, 2021).

According to the annually Address of the President of Tajikistan, the Leader of the Nation "On the main directions of the domestic and foreign policy of the republic" the implementation of one of the strategic goals – the accelerated industrialization of the country will provide an opportunity to ensure the sustainable devel-

* Corresponding author. E-mail address: *akramov60@mail.ru*

opment of industry as a producer of high added value, resulting in the creation of tens of thousands of new jobs. Despite the provided benefits, there are still many unused opportunities and capacities for increasing the pace of accelerated industrialization. For instance, sufficient reserves of domestic raw materials allow to ensure the development of such industries as metallurgy, light industry, food and pharmaceuticals. The achieved result allows to enhance the volume of production, which assists to decide the export and import of substituting products. Thus, we will achieve an accelerated industrialization of the country through the complete processing of minerals, including non-ferrous expensive metals, as well as through the processing of agricultural products and medicinal herbs.

Therefore, all necessary measures should be taken to organize enterprises with modern technologies, innovation and technology parks, information processing centers, create new jobs and establish the production of final high quality products. Over the next 5 years, that is, within the framework of the "Years of Industrial Development", there is an opportunity to create new enterprises, restore existing capacities, increase the volume of mining and mineral processing, and it will be possible to start a number of large enterprises for the final processing of raw materials and the formation of thousands of new jobs (The annually Address of the President of the Republic of Tajikistan, Leader of the Nation, Respected Emomali Rahmon "On the main directions of the domestic and foreign policy of the republic", December 21, 2021).

Methods

Based on the above-mentioned priorities, we have set the task to analyze and develop computer-based mathematical models for the distribution of the engaged population according to the types of economic activity in the economy of the Republic of Tajikistan.

To solve this issue, we analyzed the distribution of the population engaged according to the types of economic activity in the economy of the Republic of Tajikistan, using the statistical data of the Agency on Statistics under the President of the Republic of Tajikistan for 2021 (Annually statistical Journal).

Results

Table shows the number of employed and unemployed population of the Republic of Tajikistan in 2006-2021 (Annually statistical Journal, Tajikistan – 2021, 126-138).

Table. Employed and unemployed population of the Republic of Tajikistan 2006 – 2021

Years	Labor resources of the RT (N×1000 people)	Labor force, employed population in RT (N×1000 people)	Unused labor force in the economy of the Republic of Tajikistan (N×1000 people)	Including students (N×1000 people)
2006	4047	2137	1862	506
2007	4172	2150	1971	518
2008	4310	2168	2093	524
2009	4435	2219	2171	534
2010	4530	2233	2250	557
2011	4664	2249	2361	529
2012	4796	2291	2449	541
2013	4859	2307	2497	554
2014	4983	2325	2601	592
2015	5111	2380	2674	602
2016	5224	2384	2786	615
2017	5326	2407	2866	632
2018	5427	2426	2949	638
2019	5521	2463	3007	647
2020	5625	2506	3068	670
2021	5734	2639	3098	681
Note - compiled by the author				

Using Table and the Sigma Plot program, we analyzed the distribution of the labor force, the employed population in the economy of the Republic of Tajikistan according to the types of economic activity.

Sigma Plot is an excellent tool for scientific plotting and statistical analysis. The program is used in various scientific fields and offers analysts more than 100 types of charts, a wide range of graphic templates and

tools, as well as a full set of functions for accurate and fast data analysis and visualization. It allows you to quickly create complex graphs and charts. Integration with Microsoft Office provides access to Excel file data and its presentation in Microsoft PowerPoint. The program offers numerous options for modeling and graphical display of data and allows you to present any object in the form of Sigma Plot that is most suitable for scientific applications, which has all the necessary tools for statistical analysis and allows you to save a large amount of data. Using the Sigma Plot Regression Wizard, an equation is selected that matches the original data and a model is built for the data, taking into account the obtained results. Sigma Plot offers efficient data management and performing the necessary operations with them (Sigma Plot program. Instructions for use).

For several years, we have been using the Sigma Plot program in our work to analyze the results of experimental studies, for statistical processing of materials and for correlation analysis of data (Akramov M.B. et al, 2021, 9-13; Akramov M.B., 2021, 18-28; Akramov M. B. 2019, 41-45).

Analyzing the statistical data (Table), we determined the dependence of labor resources in the Republic of Tajikistan for the period 2006-2020.

Figure 1 shows the chronogram of the labor force in the Republic of Tajikistan for the period 2006-2021.

In order to accelerate the industrialization of the country and ensure the sustainable development of industry, it is necessary to take into account the ratio of the employed population and the unused labor force in the Republic of Tajikistan.

Based on the obtained static values and using the Sigma Plot program, we have developed models of these dependencies. Figure 2 shows the dependence of labor resources on time for these two categories of labor in the Republic of Tajikistan for the period 2006-2021.

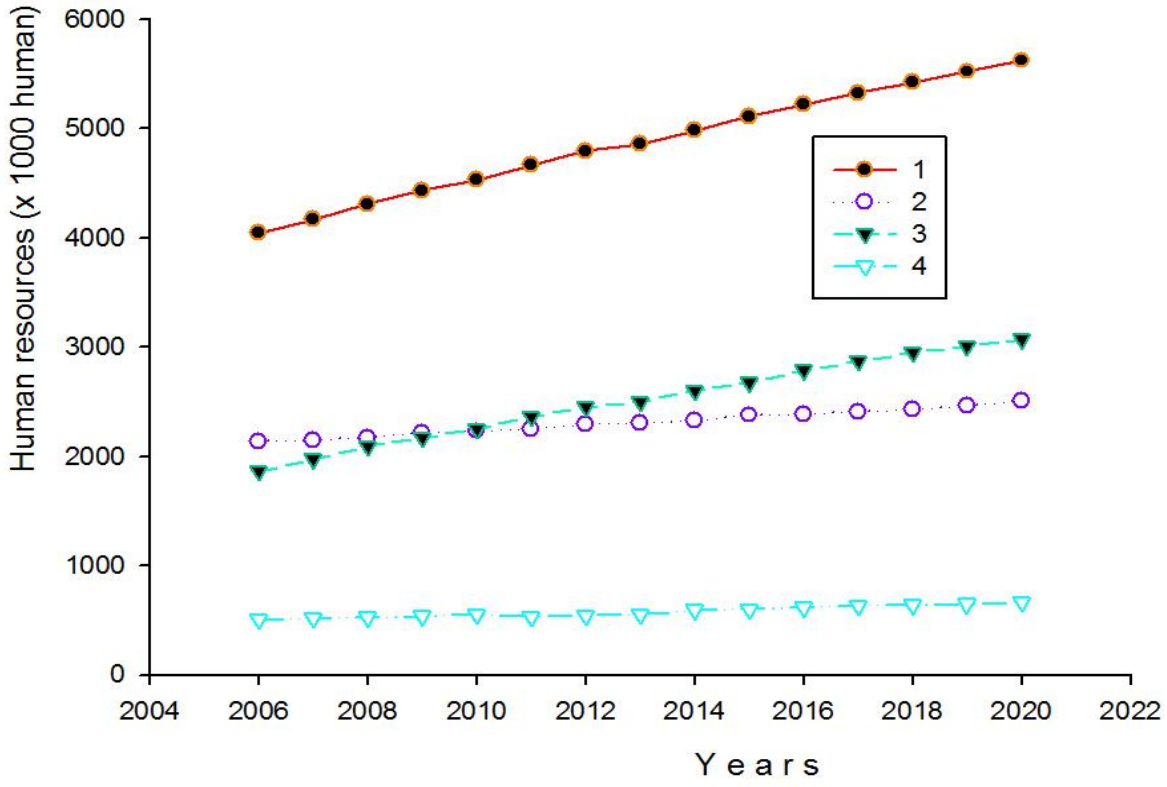


Figure 1. The chronogram of the labor force in the Republic of Tajikistan for the period 2006-2020

Note - compiled by the author

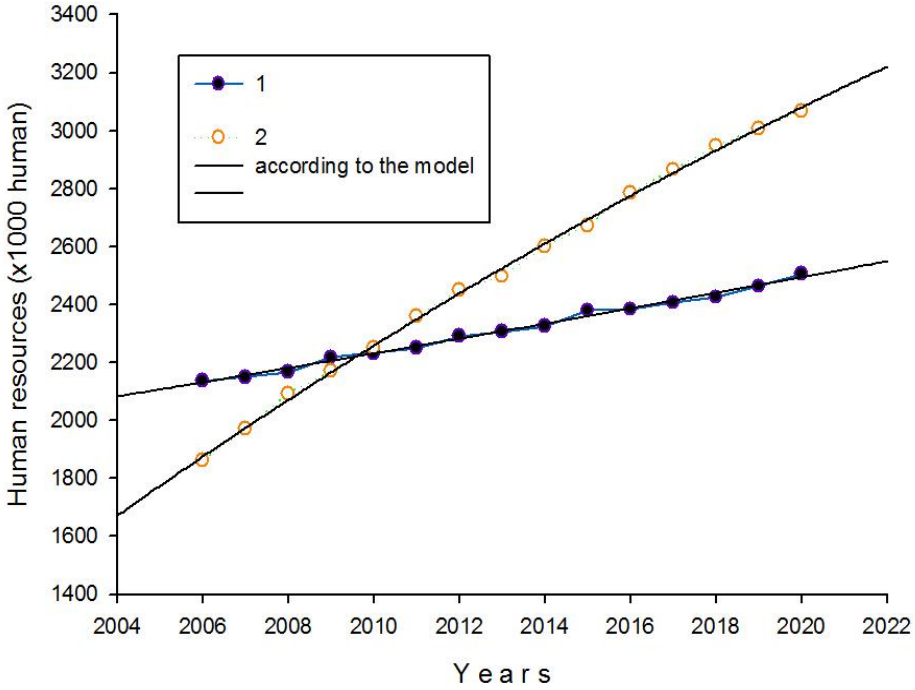


Figure 2. Dependence of labor resources for two categories of labor force in the Republic of Tajikistan for the period 2006 - 2020 1 - employed population, 2 - unused labor force

Note - compiled by the author

According to the graph, the share of unused labor force has been increased gradually. On the graph, solid lines show theoretical calculations, according to the proposed models.
The model of the chronology of the dependence of the employed population in the Republic of Tajikistan can be represented as a linear equation of the type

N = y0+a*x+b*x,

where N – labor resources.
Taking into account the regression coefficients, the equation can be rewritten as

N =- 4125417, 9 + 4015,19*x. (1)

The model of the chronology of the dependence of the unused labor force in RT can be represented as a parabolic fiction of the type

N = y0 + a*x+b*x^2,

Taking into account regression coefficients

N = 362072, 49 - 383,34 *x +0,1016*x^2. (2)

Regression R == 0,9963.
The calculation and other regression and variation parameters are given below.
Nonlinear Regression.
Data Source: Data 20.07.2022 1 in Notebook 2
Equation: Polynomial; Quadratic
f=y0+a*x+b*x^2

R	Rsqr	AdjRsqr	Standard Error of Estimate
0,9963	0,9925	0,9913	10,8548

	Coefficient	Std. Error	t	P	VIF

y0	362072,4925	684653,6494	0,5288	0,6066	59675073750,6092<
a	-383,3413	680,2345	-0,5635	0,5834	238703033337,0485<
b	0,1016	0,1690	0,6016	0,5586	59677101262,5263<

Analysis of Variance:

Uncorrected for the mean of the observations:

	DF	SS	MS
Regression	3	80206271,0912	26735423,6971
Residual	12	1413,9088	117,8257
Total	15	80207685,0000	5347179,0000

Corrected for the mean of the observations:

	DF	SS	MS	F	P
Regression	2	187869,4245	93934,7123	797,2343	<0,0001
Residual	12	1413,9088	117,8257		
Total	14	189283,3333	13520,2381		

Statistical Tests:

PRESS	2322,4514	
Durbin-Watson Statistic	2,3010	Failed
Normality Test	Passed	(P = 0,9458)

K-S Statistic = 0,1305 Significance Level = 0,9458

Constant Variance Test	Passed	(P = 0,7728)

Power of performed test with alpha = <0,0001: 0,0000

The power of the performed test (0,0000) is below the desired power of 0,8000.

You should interpret the negative findings cautiously.

Regression Diagnostics:

Row	Std. Res.	Stud. Res.	Stud. Del. Res.
1	0,5113	0, 6990	0,6833
2	- 0,5554	- 0,6489	- 0,6325
3	-1,1802	-1,2921	-1,3333
4	1,2165	1,3008	1,3438
5	0,1857	0, 1981	0,1900
6	-0,6795	-0,7297	-0,7147
7	0,8318	0, 9003	0,8927
8	-0,0709	-0,0769	-0,0737
9	-0,8080	-0,8745	-0,8653
10	1,8447	1 9812	2,3124<
11	-0,2196	-0,2343	-0,2249
12	-0,5523	-0,5906	-0,5739
13	-1,2723	-1,3929	-1,4566
14	-0,3527	-0,4122	-0,3975
15	1,1009	1,5046	1,5993

Influence Diagnostics:

Row	Cook's Dist	Leverage	DFFITS
1	0,1415	0, 4649	0,6369
2	0,0513	0, 2675	-0,3823
3	0,1105	0, 1657	-0,5942
4	0,08100,	1255	0,5091
5	0,0018	0, 1211	0,0705
6	0,0272	0, 1329	-0,2798
7	0,0464	0,1464	0,3698
8	0,0004	0, 1511	-0,0311
9	0,0437	0, 1464	-0,3583
10	0,2008	0, 1330	0,9058
11	0,0025	0,1215-0,	0836
12	0,0167	0,1255 -0,	2174
13	0,1285	0,1657 -0,	6492

14 0,0207 0,2680 -0, 2405
15 0,6549 0,4646 1, 4899
95% Confidence:

Row	Predicted	95% Conf-L	95% Conf-U	95% Pred-L	95% Pred-U
1	2131,4501	2115,3239	2147,5764	2102,8249	2160,0753
2	2156,0287	2143,7959	2168,2614	2129,4019	2182,6554
3	2180,8105	2171,1828	2190,4382	2155,2755	2206,3455
4	2205,7957	2197,4166	2214,1747	2180,7047	2230,8866
5	2230,9841	2222,7545	2239,2137	2205,9427	2256,0255
6	2256,3758	2247,7547	2264,9969	2231,2031	2281,5486
7	2281,9709	2272,9202	2291,0215	2256,6478	2307,2940
8	2307,7692	2298,5754	2316,9630	2282,3946	2333,1438
9	2333,7708	2324,7229	2342,8188	2308,4487	2359,0930
10	2359,9758	2351,3494	2368,6021	2334,8012	2385,1504
11	2386,3840	2378,1393	2394,6288	2361,3376	2411,4304
12	2412,9956	2404,6180	2421,3731	2387,9052	2438,0860
13	2439,8104	2430,1826	2449,4382	2414,2753	2465,3455
14	2466,8285	2454,5859	2479,0712	2440,1972	2493,4599
15	2494,0500	2477,9289	2510,1710	2465,4277	2522,6722

Fit Equation Description:
[Variables]
x = col(10)
y = col(11)
reciprocal_y = 1/abs(y)
reciprocal_ysquare = 1/y^2
'Automatic Initial Parameter Estimate Functions
F(q)=ape(x;y;2;0;1)
[Parameters]
y0 = F(0)[1] "Auto {{previous: 362072}}
a = F(0)[2] "Auto {{previous: -383,341}}
b = F(0)[3] "Auto {{previous: 0,10165}}
[Equation]
f=y0+a*x+b*x^2
fit f to y
"fit f to y with weight reciprocal_y
"fit f to y with weight reciprocal_ysquare
[Constraints]
[Options]
tolerance=1e-10
step size=1
Iterations=200
Number of Iterations Performed = 3
This model includes random variables to produce many different results under different conditions.
The proposed model can also be applied in the theory of employment of the non-labor force in the Republic of Tajikistan.

Discussions and conclusions

Using statistical data, the employment of the population of the Republic of Tajikistan for the period 2006-2021 was analyzed.

The possibilities of using the Sigma Plot program in dynamic systems are shown.

A computer-mathematical model has been developed and applied to determine the dynamics of changes in the employed and unemployed labor force in the Republic of Tajikistan for the period of 2006-2020.

The possibility of using the unused labor force to solve one of the strategic goals of the Republic, i.e. accelerated industrialization of the country.

References

Akramov M. B. (2019). Modeling of unstable economic systems using computer programs on the example of the economic activity of the industry of the Republic of Tajikistan. XLII International scientific Readings (In Memory Of S. F. Kovalevskaya). *Collection of articles of the International scientific-practical conference. Moscow, February 2,* 41-45.

Akramov M. B. (2021). Computer simulation of processes for acid extraction of aluminum and iron oxides from refractory clays of "Chashmasang". *VII International Scientific and Practical Conference interdisciplinary research: experience of the past, opportunities of the present, strategies of the future June 6, 2021 Melbourne, Australia,* 18-28.

Akramov M. B., Faizulloev U. N. & Khaitov A. Sh (2021). Simulation of the results of the study of plasma-chemical pyrolysis of gas condensates. *Economic Forum "Strong steps to the development of industry", devoted to the 15th anniversary of formation of the Institute of Law and metallurgy of Tajikistan,* 9-13.

Annually statistical Journal, Tajikistan - 2021. (official publication). Publisher: Agency for Statistics under the President of the Republic of Tajikistan), 126-138.

Kamenev G. K. & Kamenev I. G. (2020). Computer research and Multicriterial metric data analysis in human capital modeling, *12, 5,* 1223–1245.

Kotliarova1 E. V., Gasnikov A. V., Gasnikova E. V. & Yarmoshik D. V. (2021) Finding equilibrium in two-stage traffic assignment model. *Computer research and modeling, 13,* 365–379. DOI: 10.20537/2076-7633-2021-13-2-365-379.

Kucheryavy V. I. & Milkov S. N. (2010). Statistical Resource Modeling shafts of pumping main units. *Problems of mechanical engineering and reliability of machines, 4.* Retrieved from http://naukarus.com/statisticheskoe-modelirovanie-resursa-valovnasosnyh-magistralnyh-agregatov.

Sigma Plot program. Instructions for use.

The annually Address of the President of the Republic of Tajikistan, Leader of the Nation, Respected Emomali Rahmon "On the main directions of the domestic and foreign policy of the republic", December 21, 2021, Dushanbe.

Tleulesov A. K., Suyundikov M. M., Shomanova Zh. K., Akramov M. B. & Suiindik N. M. (2021). Assessment of qualitative and quantitative elemental composition of waste in the territory of sludge collector of Pavlodar aluminium plant. News of the academy of sciences of the republic of Kazakhstan. *Satbayev University. Series of geology and technical sciences, 5 (449),* 153-161.

М.Б. Акрамов, А.Н. Нұрализода, У.М. Вохидов, Н.Н. Нұрализода

Тәжікстан экономикасында жұмыс істейтін халықты бөлу негізінде тұрақсыз экономикалық жүйелерді модельдеу

Аңдатпа

Мақсаты: Зерттеудің мақсаты *Sigma Plot* бағдарламасын пайдалана отырып, экономикалық қызмет түрлері бойынша Тәжікстан Республикасының экономикасында жұмыспен қамтылған халықты бөлудің математикалық моделін талдау және әзірлеу.

Әдістері: Осы зерттеуде Тәжікстан Республикасының экономикасында жұмыспен қамтылған халықтың таралуын анықтауға математикалық және статистикалық модельдеу қолданылған. Қазіргі компьютерлік технологиялар мен бағдарламалар жаңа үлгілерді әзірлеу және тексеру үшін мүмкіндіктер жасайды, сонымен қатар модельдер негізіндегі зерттеу әдістерін, сондай-ақ модельдеу нәтижелерін талдау және ұсыну әдістерін жетілдіруге көмектеседі.

Модельдеу әдістерін тар кәсіби түрде қолдану заманауи компьютерлік бағдарламалар негізінде имитациялық модельдерді кеңінен қолдануға жол беріп отыр. Ал модельдеуді дамыту мәселесін нақты мәселелер мен оның іргелі ұғымдарын түсіндіру контекстіне қоюдың сөзсіз қажеттілігі туындайды.

Қорытынды: Ұсынылған модельдер үшін математикалық регрессия теңдеулері алынған және осы теңдеулердің коэффициенттері компьютерлік бағдарламалармен есептелген. Ұсынылған математикалық және статистикалық модельдердің көмегімен Тәжікстан Республикасында жұмыспен қамтылған халық пен пайдаланылмаған жұмыс күшінің арақатынасы есептелді. Нәтижелер елді индустрияландыруды жеделдету және өнеркәсіптің тұрақты дамуын қамтамасыз ету үшін елдегі бұл байланысты ескеру қажет екенін көрсетті.

Тұжырымдама: Бұл жұмыста әзірленген математикалық модель 2006-2022 жылдар аралығындағы Тәжікстан Республикасындағы жұмыспен қамтылған және жұмыссыз жұмыс күшінің өзгеру динамикасын көрсету үшін қолданылды. Демек, пайдаланылмайтын жұмыс күшін республиканың стратегиялық мақсаттарының бірі, яғни елді үдемелі индустрияландыруды шешуге пайдалану мүмкіндігі көрсетілген.

Кілт сөздер: модель, жұмыспен қамту, экономикалық жүйелер, қолданбалы бағдарламалар, кесте, регрессия, еңбек ресурстары.

М.Б. Акрамов, А.Н. Нурализода, У.М. Вохидов, Н.Н. Нурализода

Моделирование нестабильных экономических систем на основе распределения населения, занятого в экономике Таджикистана

Аннотация

Цель: Целью данного исследования является анализ и разработка математической модели распределения занятого населения в экономике Республики Таджикистан по видам экономической деятельности с использованием программы *Sigma Plot.*

Методы: В настоящем исследовании используется математическое и статистическое моделирование распределения населения, занятого в экономике Республики Таджикистан. Современные компьютерные технологии и программы создают возможности для разработки и верификации новых моделей, а также помогают совершенствовать методы исследования на основе моделей, а также методы анализа и представления результатов моделирования.

Узкопрофессиональное использование методов моделирования уступает место широкому использованию имитационных моделей, основанных на современных компьютерных программах. И существует неизбежная необходимость поставить вопрос о развитии моделирования в контексте реальных проблем и интерпретации его фундаментальных концепций.

Результаты: Для предложенных моделей получены математические уравнения регрессии и коэффициенты этих уравнений рассчитаны с помощью компьютерных программ. С помощью предложенных математических и статистических моделей рассчитано соотношение занятого населения и неиспользуемой рабочей силы в Республике Таджикистан. Результаты показали, что для ускорения индустриализации страны и обеспечения устойчивого развития промышленности необходимо учитывать это соотношение в стране.

Выводы: Разработанная математическая модель в настоящей работе была применена для отображения динамики изменений в занятой и безработной рабочей силе в Республике Таджикистан за период 2006–2022 гг. Следовательно, мы показали возможность использования неиспользуемой рабочей силы для решения одной из стратегических целей республики, то есть ускоренной индустриализации страны.

***Ключевые слова*:** модель, занятость, экономические системы, прикладные программы, график, регрессия, трудовые ресурсы.

DOI 10.31489/2022Ec4/15-25
JEL C55, E24
UDC 004:331.5

A.K. Atabayeva*

Karaganda University of the name of academician E.A. Buketov, Kazakhstan
atabaeva@list.ru
https://orcid.org/0000-0002-4644-1843

Scopus Author ID: 1617942538468
Researcher ID: AAR-3212-2021

Application of text mining technology for comparative analysis of trends in the labor market

Abstract

Object: The main purpose of the article is to analyze the employment of the population in the post-Soviet space in the context of world events to identify positive and negative trends in employment, as well as characteristic trajectories of development directions.

Methods: Modern methods of word processing, in particular text mining, word cloud were used.

Findings: The rapid development of modern technologies, Internet applications is accompanied by the generation of large amounts of data, the timely processing of which is today one of the main problems in various spheres of life - social, economic, political, and others. In solving this global problem, modern methods of processing text information, the so-called text mining technologies, come to the rescue. These tools allow to increase the efficiency of solving problems of different levels. The algorithms embedded in the text mining technology reveal the basic concepts of the text, the content and the relationship between them.

The integration of modern text mining systems and the R-Studio programming language makes it possible to conduct research in the field of text analysis and processing. These systems, using statistical methods, process the rating of news documents, materials of scientific documents, blogs, tweets, emails, advertisements and other information. The main task of text analysis is to get a clear idea about the topics of interest, to extract important information. The analysis of text documents by text mining methods is carried out in several stages: information search, text preprocessing, extraction of the required information, application of text methods, analysis and interpretation of the obtained results. For the analysis of texts, articles in Russian in PDF format were selected, including information on trends in the labor market and employment for 1995–2020.

Conclusions: over the past 20 years there have been significant changes in the labor market and employment. Text analysis technologies made it possible to reveal that during the study period, the labor market issues of unemployment, employment, employment transformation, the emergence of new forms of employment, social and gender problems, and others raised.

Keywords: text mining, word cloud, TF-IDF, LDA, employment, labor market.

Introduction

The labor-intensive process of the manual method of text analysis remains far in the past. Huge arrays of text data today can no longer be explored without the use of software. Modern information technologies allow researchers to use computer processing methods and text mining. The rapid development of the Internet makes it possible to extract information resources for data processing from scientific articles, online discussions, websites, chats, user reviews, newspapers, social networks, and other open sources. Therefore, text mining methods are the most relevant and in demand at the present time in various fields of business, politics, education, etc., first of all, for visualizing the content of information taken from the texts of reports, speeches and reviews. For example, in the US Department of Health, word clouds have been used to analyze the content of documents to determine if sufficient attention is being paid to the core activities of the organization (Atenstaedt, 2017).

There are many online tools that generate word clouds. One of the first is Wordle.net. These tools visually display frequently occurring words in the text and serve as a quick way to get a general idea of the information being studied (article text, speaker's speech, blog or database posts, respondents' online responses, comments, and others). In some cases, word clouds can reveal specific features in the data that prompt further, deeper exploration. It should also be noted that text analysis has some disadvantages, which are the reason for the rare use of this method in the analysis of scientific articles.

* Corresponding author. E-mail address: *atabaeva@list.ru*

Literature review

Recently, most research has been carried out using new technologies in the field of artificial intelligence, machine learning, etc. Of particular interest are the so-called text analysis technologies, since the analysis of patterns and trends is a huge task. Therefore, text mining is widely researched today. Text Mining extracts relevant knowledge from text documents. Various text mining methods convert unstructured data into structured data. Text classification, one of the basic principles of text analysis, requires a number of text processing techniques, the most important of which is natural language processing (NLP) (Udgave, Kulkarni, 2020).

Numerous research papers are published online. The growth in the development of computer and information technology makes it difficult for users to find and classify interesting scientific articles on a specific subject (Cai, Luo, Wang, Yang, 2018). Therefore, it is desirable that there be a mechanism by which scientific papers are systematically classified according to similar topics. This will allow users to quickly and easily find research papers of interest to them. As a rule, searching for research papers on specific topics or subjects takes a long time. For example, researchers usually spend a lot of time on the Internet to find articles of interest to them. The required information is not retrieved effectively due to the fact that the articles are not grouped by topic or there is no access to the necessary information (Bolshakov et al., 2017).

Today, owing to big data technologies, this problem is completely solved. Modern possibilities of analysis, classification and processing of a huge number of research papers make this work efficient, manageable and accessible. The use of automated processing methods every year an increasing number of scientific papers come to the aid of researchers. They allow to describe the essence of the article, catch the direction of the research and a summary before reading the content in the main body of the article. In this regard, the keywords of scientific papers should be written concisely and informatively (Kalabin, Korneeva, 2020).

To classify a huge number of articles into articles of similar subjects, scientists Kim S. and Gil J. (2019) propose to use an article classification system based on term-frequency - inverse document frequency (TF-IDF) schemes and Latent Dirichlet Allocation (LDA) schemes. The proposed system firstly creates a representative keyword dictionary with the keywords that the user enters and with the topics extracted by the LDA. Second, it uses the TF-IDF schema to extract topic words from article abstracts based on a keyword dictionary.

Experimental results show that the proposed system can well classify entire articles with similar topics by keyword ratio. The classification system based on the TF-IDF and LDA schemes is widely used, as it is quite effective (Nguyen, 2019).

Word cloud technologies are also in high demand. Word clouds are an image made up of words that together resemble a cloud shape. The size of a word shows how important it is, e.g., how often it appears in the text - its frequency. People typically use word clouds to easily create summaries of large documents (reports, speeches), create art on a topic (gifts, exhibitions), or visualize data (tables, surveys) (Turner, 2017).

Modernization of modern methods of data processing requires the search for effective ways to enhance the process of using this tool. Atenstaedt (2012) in his research reveals the features and applications of the clouds, which contribute to a more in-depth study of these technologies.

Word cloud is a resource that allows you to create a visual image of keywords, text in an attractive form. There are special programs that generate a cloud by displaying the most frequently used words in large print, for this it is enough to enter text or URL (website address) in a special field. Techniques for working with the word cloud are unusual and useful for those who perceive most of the information with the help of vision. On the one hand, this is just an opportunity to create a beautiful picture for a report or presentation. On the other hand, it is a useful tool with many interesting applications (Ramsden & Bate, 2008).

Methods

In the process of research, modern methods of text processing were used – text mining, word cloud.

Results

To determine the main trends in the labor market and employment problems, a literature review in Russian was conducted for the period from 1990 to 2020 in the R-Studio program. This program allows using special built-in commands to analyze texts, which help to identify relevant thematic issues (Verzani, 2017).

R-Studio is a program that is both a programming language and an environment for statistical computing and graphing (Mark, 2012).

Text mining (TM) is an innovative method of structural text analysis, which represents a broad perspective of theoretical approaches for processing input textual information. This method is an interdisciplinary

field of scientific activity at the intersection of data mining, automatic text processing, descriptive statistics and informatics.

To analyze text information in the R program, the "tm" (text mining) package is used, which is installed using the install.packages("tm") command. First of all, the so-called "Corpus" is created. A corpus is an object that includes all analyzed texts. A variety of operations can be performed with a text corpus, such as representing all words in capital letters (tolower), removing punctuation marks (removePunctuation), removing extra spaces, and others (Kabakof, 2015).

The general stages of text data processing are: data cleaning; lemmatization; stemming.

Data cleaning includes removing numeric data, spaces, replacing uppercase letters with lowercase ones. Also, stage 1 removes "stop words" or they are also called "noise words". That is, words that on their own do not carry any semantic load (too frequent, too rare, too short, non-nouns, proper names). These include prepositions, suffixes, participles, interjections, numbers, particles, conjunctions. For example, "not", "also", "these", "either", "among", "always" and others.

Stemming is the process of finding a word stem for a given source word (cutting a word to a stem). In the process of stemming, endings are discarded from words. Stemming is based on the rules of language morphology. Thus, stemming cuts endings and suffixes from the word so that the remaining part is the same for all grammatical forms of the word.

Lemmatization is the process of defining the lemma of a word. Lemma is the original, basic form of the word. For nouns and adjectives, it is the singular form of the nominative case, and for verbs, it is the infinitive.

To analyze the texts, articles in PDF format were selected, including information on trends in the labor market and employment for 1995, 2000, 2005, 2010, 2015 and 2020. The analysis includes the following commands:

1) Creation of a database that includes the analyzed PDF files. To perform the analytical part of our task, the first thing to do is to create a PDF database or corpus. The corpus is a database of words. Six PDF-format documents are loaded into the corpus. Therefore, we create a database consisting of documents in PDF format. We upload all PDF files and perform a document upload pre-check to make sure that all required documents are uploaded to the database.

2) Cleaning the case from the so-called noise (tm command). A number of transformations are performed: we change all text to lower case, remove numbers, stop words, all punctuation marks, and spaces. These operations really tidy up and structure our documents so that text can be parsed; in other words, changing text from unstructured format to structured format.

3) In our case, we do not want the program to abbreviate words, so we set stemming to FALSE.

4) Checking frequently occurring words in all documents and determining their number (Fig. 1).

```
> inspect(opinions.tdm[1:10,])#Examine 10 words at a time in across documents
<<TermDocumentMatrix (terms: 10, documents: 6)>>
Non-/sparse entries: 60/0
Sparsity           : 0%
Maximal term length: 11
Weighting          : term frequency (tf)
Sample             :
             Docs
Terms         1995.pdf 2000.pdf 2005.pdf 2010.pdf 2015.pdf 2020.pdf
  безработица       40      103       44       23        5        8
  бизнес             1        1        6       15        1        6
  доходы             2       58       13        9        3        5
  занятость         60      119       63      112      108       45
  занятых            1       16       33        4        1        2
  изменения          1        9       14        4        2        3
  людей              1        4        1       10        1        1
  места              5        5        2        4        2        5
  новые              2        6        1        1        1        5
  новых              2        3        2        6        5        9
```

Figure 1. Determination of the number of repetitions of the first 10 frequently occurring words

Note – compiled by the author based on the R program (articles in Russian were used for the analysis)

For text analysis, a command is installed that checks for the presence of the first 10 words that appear in all documents and determines the total amount of repetitions of these words in each document. For example,

the word “income” appears twice in the first document, 58 times in the second, 13 times in the third, 9 in the fourth, 3 in the fifth, and 5 times in the sixth. As can be seen from Figure 1, the main topic of the study is employment issues, the frequency of which is the highest in all the studied files. The second largest is the problem of unemployment. “Unemployment” was the most frequently discussed in 2000, and in subsequent periods this problem was raised less and less. This fact confirms the situation on the labor market during the study period. According to Kazakh official statistics, the highest unemployment rate was 10.4% in 2000. This is followed by a gradual decline to 4.9% in 2020 (BNSASPR, 2020). The data in Figure 1 confirm this fact: the largest mention of the word “Unemployment” is observed in 2000 - 103 times, the smallest in 2015 (5 times) and in 2020 (8 times).

Also common to all documents is the word “change”, which implies transformational processes in the labor market. In the documents of 2000 and 2005, it occurs the most times, 9 and 14, respectively. It was during these periods that mass computerization took place, informatization of all spheres of activity, which significantly affected the employment of the population. The emergence of new industries (IT, services), the digitalization of society led to the emergence of new forms of employment, which is reflected in Figure 1: the word “new” is most common and discussed in 2000 and 2020 (9 and 14, respectively).

If we consider the next 10 most popular words, we note that some of the most common words are: “problems”, “work”, and “market” (Fig. 2).

```
> inspect(opinions.tdm[11:20,])#Examine 10 words at a time in across documents
<<TermDocumentMatrix (terms: 10, documents: 6)>>
Non-/sparse entries: 60/0
Sparsity           : 0%
Maximal term length: 10
Weighting          : term frequency (tf)
Sample             :
           Docs
Terms       1995.pdf 2000.pdf 2005.pdf 2010.pdf 2015.pdf 2020.pdf
  переход          3        2        2        2        2        1
  проблема         2        2        5        4        2        4
  проблемы         5       91       64       23       11       15
  работа          49       29        9       45       18       16
  рабочих          4       41       34       22       13       13
  рост             1        8        6        5        2        4
  рынок           36       49       42       25       30       26
  связи            3        7        5        6        2        1
  социальных       3       26        2        2        1        3
  сфере            1        9        9        4        3       11
```

Figure 2. Second 10 frequently occurring words

Note – compiled by the author based on the R program (articles in Russian were used for the analysis)

The word “problems” was mentioned 91 times in 2000, which indicates the most difficult period for the labor market (in terms of employment, advanced training, social protection, etc.). This period is characterized by acute social problems (the word “social” occurs 26 times).

Consider terminology that appears at least 20 times in all 6 documents. That is, if we previously analyzed the frequency of use of terms for each individual document, now we will analyze all 6 documents as a whole (Fig. 3).

```
> findFreqTerms(opinions.tdm,lowfreq = 20,highfreq = Inf)#Frequent terms that appear at least 20 times across all documents
 [1] "безработица"  "бизнес"     "доходы"     "занятость"  "занятых"    "изменения"  "места"      "новых"      "проблемы"
[10] "работа"       "рабочих"    "рост"       "рынок"      "связи"      "социальных" "сфере"      "труда"      "трудовых"
[19] "уровень"      "условиях"   "экономики"  "экономического"
```

Figure 3. Terms appearing in all documents at least 20 times

Note – compiled by the author based on the R program (articles in Russian were used for the analysis)

One can also consider the total amount of frequently occurring words in documents (Fig. 4).

```
> ft.tdm<-as.matrix(opinions.tdm[ft,])#Sum the count of all frequently occurring words
> sort(apply(ft.tdm, 1, sum), decreasing = TRUE)
занятость     труда безработица  проблемы     рынок     работа   рабочих  экономики   доходы  трудовых  условиях
      507       303       223       209       208       166       127       115        90        71        62
  занятых   уровень социальных     сфере изменения    бизнес    новых      рост экономического     связи     места
       57        55        37        37        33        30        27        26        26        24        23
```

Figure 4. Sum of frequently occurring words in documents

Note – compiled by the author based on the R program (articles in Russian were used for the analysis)

As Figure 4 shows, the maximum number of words "employment" – 507, "labor" – 303, "unemployment" – 223, and others, reflects the general focus of the subject under study. Based on the analysis carried out, it is possible to note transformational processes in the labor market, as well as to identify the following pronounced problems: incomes of the population, social protection of the population, new working conditions, introduction of new forms of employment, and others.

Thematic modeling.

Let us apply one of the topic modeling methods based on a specific algorithm called LDA (Latent Dirichlet Allocation). It is a mathematical model of a language that captures topics (lists of similar words) and how they cover various texts. By scanning and understanding the importance of words in the text, this algorithm can evaluate what is contained in the text (review), what the reviewer thinks on various topics that are weighted and interconnected. Also, the LDA function monitors which words appear next to others in texts and reviews. This information is captured using probability statistics, which is a deeply mathematical process.

The application of this text mining method is that several documents can be grouped by topic. That is, documents similar to each other are grouped. The following libraries are loaded for this task: tm, a tool for working with PDF files, ggplot, and dplyr.

The next step is to create a document matrix. This is required for data modeling. Since all analyzed texts must be presented in the form of a matrix of document terms. To make this transformation, the corpus we have already created, which is a document, is taken as the initial unit. We place it in the matrix function of the document term "DocumentTermMatrix(document)" and save it as a DTM variable. Now we create our actual model. The first step for topic modeling is to create a model using the "lda" function, where lda is short for Latent Untargeted Allocation. So we use the LDA function and pass in the name of our document matrix (DTM), k equal to 6 says we have 6 documents and we set the initial value so that every time we run the function we get the same results.

When creating a model, there are specific things that we are interested in. First of all, these are beta values, which are part of our model (Fig. 5). Therefore, we create a new variable, which we call "beta_topics" and create a "tidy" function, to which we pass our model "LDA".

```
> #Shows the probability of a word being associated to a topic
> beta_topics<-tidy(Model_lda, matrix = "beta")#create the beta model
> beta_topics#shows all the information in beta_topics
# A tibble: 54,594 × 3
   topic term             beta
   <int> <chr>           <dbl>
 1     1 суволенные   1.14e- 3
 2     2 суволенные   2.02e-67
 3     3 суволенные   4.90e-64
 4     4 суволенные   1.92e-58
 5     5 суволенные   6.77e-66
 6     6 суволенные   4.57e-66
 7     1 пбезработица 1.14e- 3
 8     2 пбезработица 3.26e- 4
 9     3 пбезработица 1.26e-62
10     4 пбезработица 2.10e-57
```

Figure 5. Beta values

Note – compiled by the author based on the R program (articles in Russian were used for the analysis)

Figure 5 shows that the terms "laid off" and "unemployment" are most related to the topic under study. In other words, they are part of all 6 documents, and the beta value shows a quantitative relationship with the text. The highest beta in 2015 is 6.77 e-66. The lowest score was in 1990. This means that the higher the beta

value, the stronger the connection of the term with the analyzed topic. Therefore, it can be argued that the problems of layoffs were especially acute in 2015 and 2000 (beta coefficient = 4.9 e-64), and unemployment problems in 1995 (beta coefficient = 3.26 e-4).

By examining the beta values to see which terms or words make up each topic, one can display this visually as a series of graphs (Fig. 6). To do this, one needs to make sure that all terms that are frequently repeated in documents are grouped based on beta values. The chart displays the groups of terms most frequently used in each document. It should be noted that practically in all documents the dominant words are employment, labor market, work, and unemployment.

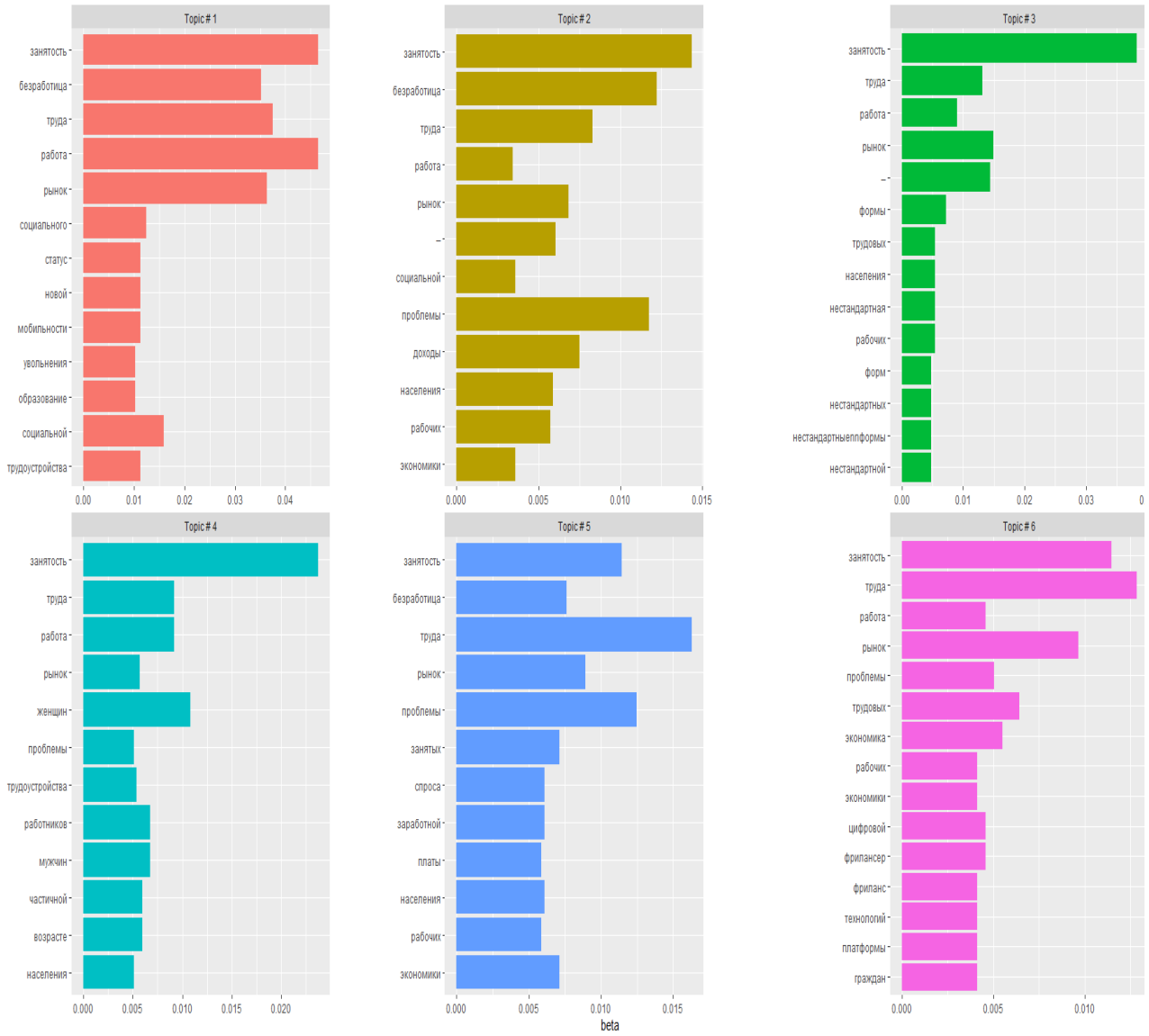


Figure 6. Grouping terms based on beta values

Note – compiled by the author based on the R program (articles in Russian were used for the analysis)

In 1995, social problems were raised in the labor and employment market, the problems of layoffs of workers, mobility, education, and employment. The year 2000 also focuses on the problems of employment, to which the problems of income and the economy as a whole are added. In 2005, transformational processes are observed in the employment market, as there is a prevailing use of such terms as non-standard forms of employment. The next period (2010) is focused on gender issues of the labor market, the problems of women's employment and age restrictions are raised. As a solution, the introduction of part-time employment is proposed. The year 2015 again raises the problems of unemployment, which intersect with the problems of workers' wages. In the documents of 2020, much attention is paid to the impact of digital technologies, labor platforms on employment. The consequence of this influence is the emergence of new forms of employment, the words freelance and freelancer are especially often mentioned.

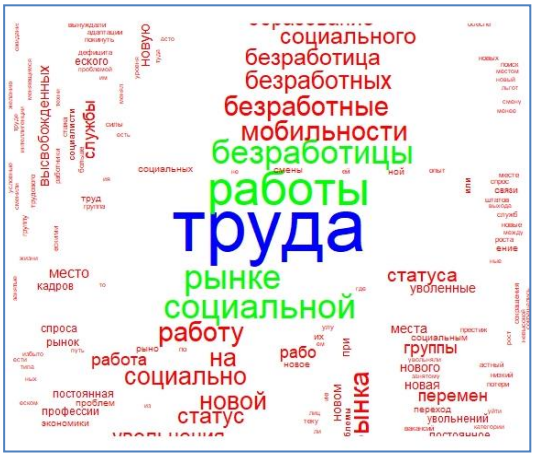
Word cloud.

The word cloud tool (function) shows a random display of all words in the text source, where the size of each word is proportional to the number of repetitions in the text.

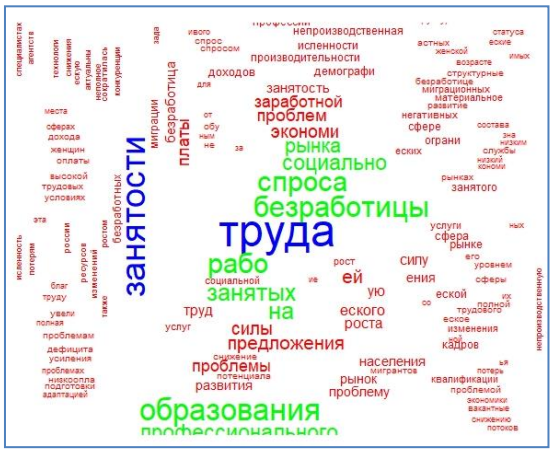
A word cloud is a set of frequently occurring words depicted in the same picture in different sizes. The more often a word occurs in the text, the larger it is in the picture. A word cloud is one of the powerful ways to visualize text, which determines the direction of the analyzed information and indicates the main, real trends on the topic under study.

In total, 160 scientific articles by Kazakh authors and authors from the CIS countries were loaded into the program, the key content of which was the topic of employment. To trace the evolution of forms of employment, the list of references was divided into three periods: 1990-2000, 2001-2010, 2011-2020 (Fig. 7).

1990–2000



2001–2010



2011–2020

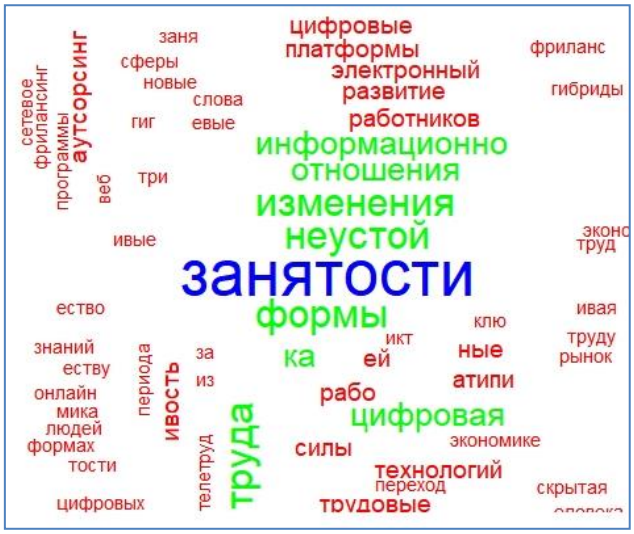


Figure 7. Word cloud for the periods 1990–2000, 2001–2010, 2011–2020

Note – compiled by the author based on the R program (articles in Russian were used for the analysis)

The results of the word cloud analysis showed that the following terminology was most often mentioned in the articles:

- in the period 1990-2000 – unemployment, dismissal of workers, shortage of jobs, layoffs, socially new status of an employee, personnel, changes, forced, self-employment, mobility. The transition from a planned economy to a market economy brought with it great changes in the world of work. The closure of many enterprises and factories was accompanied by mass layoffs. In such conditions, people were forced to agree to any work - partial or temporary. To adapt to new working conditions, workers became mobile;

- in the period 2001-2010 – social problems, labor demand, problems of wages and incomes, unemployment, temporary employment, part-time employment, informal employment, labor migration. Despite the stabilization of the economy, there were still unresolved social and income issues. Crisis of 2008-2009 raised the issue of unemployment. This period is characterized by the spread of temporary, part-time, infor-

mal employment;

- in the period 2011–2020 – digital economy, human capital, Internet, new forms of employment, information technology, remote employment, robotization, remote work, education, capital, outsourcing, freelancing. The development of the Internet and information and communication technologies contributes to the emergence of new forms of employment. Scientists are concerned about the consequences of robotization and its impact on the labor market. The problems of the level of education and human capital are being raised, as the requirements for workers in the digital society are increasing.

In Table, we consider the correlation of frequently occurring words with the word "Employment", in order to determine the main trends and directions in the labor market.

Table. Correlation of frequently occurring words with the word "Employment"

Period	Changes	Social	Status	Problems	Place (work)
1990-2000 гг.	0,99	0.87	0.84	0.81	0.72
2001-2010 гг.	0.66	0.97	0.68	0.74	0.71
2011-2020 гг	0.76	0.89	0.61	0.62	0.84
Note – compiled by the author based on the R program					

Analyzing the data in Table, we can conclude that the employment sector has undergone a significant transformation in the first study period (1990–2000). This fact is confirmed by the high values of the correlation coefficients ("Changes" in the field of employment - 0.99). The social sphere (0.87), the status of workers (0.84), jobs (0.72) also underwent strong changes. The transition to a market economy was accompanied by a difficult process of adaptation to new conditions. It took time to build new market labor relations.

In the second decade (2001–2010) there is a slight easing of problematic issues in the field of employment. But the global crisis in the second half of the 2000s caused unemployment and precarious employment, which again exacerbated social tension in the labor market (Social problems - 0.97).

The third decade under study is characterized by changes caused by digitalization processes. The emergence of new remote forms of employment raises concerns about future employment (0.84), social protection of workers (0.89), and the development of human capital.

Discussions

With the rapid development of modern technology, new computer and Internet applications are generating large amounts of data at an unprecedented rate, such as video, photo, text, voice, and social media data. This data often has high dimensional characteristics, which poses a major challenge for data analysis and decision making. The right choice of methods shows its effectiveness in processing multidimensional data and increasing the efficiency of the analytical component (Mezentseva, Kolomiiets, 2020).

The choice of features and methods plays an important role in compressing the scale of data processing when redundant and irrelevant features are removed. The feature selection technique can pre-process analysis algorithms, as well as simplify and improve the accuracy of results using the R program (Mastitskii, Shitikov, 2014).

Over the past decade, many companies have been developing special software for processing text information. We note the following of them: Google, IBM, SAS, Angoss Software Corporation, and others. According to Kovtun D.B., the R program is the most accessible to use, since other programs have a number of shortcomings in their work. For example, Google's programs contain restrictions on the analysis of unstructured data, and Google's software is not freely available (Kovtun, 2021).

Topic modeling refers to a wide class of application of machine learning algorithms to text data transformed into a document-term matrix. Topic models are "statistical algorithms aimed at identifying and measuring latent topics within a corpus of text documents". Thematic models are divided into two groups. The first includes documents supposedly having only one theme (single-membership models). Secondly, documents containing several topics (mixed-membership models). Models that assume that each document can have only one topic are implemented, for example, using cluster analysis (k-means, k-medians, etc.). However, models that assume that each document can have many topics have become popular. Currently, there are many such topic models: classical latent Dirichlet placement (LDA), correlated topic models, dynamic topic models, hierarchical topic models and structural topic models (Shipunov et al., 2014).

Conclusions

The intellectual analysis of texts made it possible to identify the main trends in the labor market over the past 20 years. Articles of post-Soviet scientists written in Russian were used as sources of analysis.

The main topic of the study is the employment of the population, the frequency of which is the highest in all the studied files. In this regard, some of the most common words in all documents are “problems”, “work”, “employment”, “labor” and “market”. The second largest problem is unemployment. This is confirmed by the high beta coefficient in 1995, equal to 3.26 e-4.

Also common and common to all documents is the word “change”, which implies transformational processes in the labor market. In the documents of 2000 and 2005, it occurs the most times. It was during these periods that mass computerization took place, informatization of all spheres of activity, which significantly affected the employment of the population. The emergence of new industries (IT, services), the digitalization of society have led to the emergence of new forms of employment, since the word “new” is most often encountered and discussed in 2000 and 2020.

One of the most difficult periods for the labor market was the year 2000, as the word “problems” appears more than 90 times and issues of employment, advanced training, social protection, etc. are raised. This period is characterized by acute social problems.

Based on the analysis carried out, it is possible to note transformational processes in the labor market, as well as to identify the following pronounced problems: incomes of the population, social protection of the population, new working conditions, introduction of new forms of employment, and others.

References

Atenstaedt R. Word cloud analysis of the *BJGP*: 5 years on / R. Atenstaedt // British Journal of General Practice. – 2017. - 67(658). – P. 231-232. DOI: https://doi.org/10.3399/bjgp17X690833

Atenstaedt R. Word cloud analysis of the *BJGP* / R. Atenstaedt // British Journal of General Practice. - 2012. - 62(596). – P. 148. DOI: https://doi.org/10.3399/bjgp12X630142

Cai J. Feature selection in machine learning: A new perspective / J. Cai, J. Luo, S. Wang, S. Yang. // Neurocomputing. - 2018. - Vol. 300. – P. 70–79. DOI: 10.1016/j.neucom.2017.11.077.

Kim S. Research paper classification systems based on TF-IDF and LDA schemes / S. Kim, J. Gil // Human-centric Computing and Information Sciences. - 2019. - 9(1). – P.1-21. DOI: 10.1186/s13673-019-0192-

Mark P. J. Learning RStudio for R Statistical Computing / P. J. Mark // Packt Publishing. - 2012. – 126 p.

Mezentseva O. Optimization of analysis and minimization of information losses in text mining / O. Mezentseva, A. Kolomiiets // Herald of Advanced Information Technology. – 2020. - 3(1). – P. 373–382.

Turner D. Word clouds and word frequency analysis in qualitative data / D. Turner. — Quirkos, 2017. [Электронный ресурс]. Режим доступа: https://www.quirkos.com/blog/post/word-clouds-and-word-frequency-analysis-in-qualitative-data/

Ramsden A. *Using Word Clouds in Teaching and Learning* / A. Ramsden, A. Bate // University of Bath, 2008. Retrieved from http://opus.bath.ac.uk/474/

Udgave A. Text Mining and Text Analytics of Research Articles / A. Udgave, P. Kulkarni // Palarch’s Journal Of Archaeology Of Egypt/Egyptology. — 2020. — 17(6). — P. 1–7.

Verzani J. Getting started with RStudio / J. Verzani // O’Reilly Media. — 2017. — 98 p.

Большакова Е. И. Автоматическая обработка текстов на естественном языке и анализ данных: учеб. пос. / Е.И. Большакова, К. В. Воронцов, Н. В. Лукашевич, А. С. Сапин. — М.: НИУ ВШЭ, 2017. — 268 с.

Бюро национальной статистики Агентства по стратегическому планированию и реформам РК. [Электронный ресурс]. Режим доступа: https://stat.gov.kz/official/industry/25/statistic/5

Кабакоф Р. R в действии. [Электронный ресурс]. Режим доступа: https://www.manning.com.

Калабин А. Л. Анализ информационных критериев отбора значимых признаков в методах Text Mining / А. Л. Калабин, Е. И. Корнеева // Вестн. ВГУ. Сер. Системный анализ и информационные технологии. — 2020. — 2. — С.150–159.

Ковтун Д. Б. Исследование внутриведомственного взаимодействия органов власти РФ на основе документов стратегического планирования с помощью технологии Text Mining / Д. Б. Ковтун // Моск. экон. журн. — 2021. — 2. — С. 1–10.

Мастицкий С. Э. Статистический анализ и визуализация данных с помощью R / С. Э. Мастицкий, В. К. Шитиков. — 2014. — 401 с.

Нгуен М. Т. Тестирование методов машинного обучения в задаче классификации http запросов с применением технологии TFIDF / М. Т. Нгуен // Вестн. Воронеж. гос. ун-та. Сер. Системный анализ и информационные технологии. — 2019. — № 4. — С. 119–131

Шипунов А. Б. Наглядная статистика. Используем R! / А. Б. Шипунов, Е. М. Балдин, П. А. Волкова, А. И. Коробейников, С. А. Назарова, С. В. Петров, В. Г. Суфиянов. — 2014. — 296 с. [Электронный ресурс]. Режим доступа: http://ashipunov.info/shipunov/school/books/rbook.pdf

А.К. Атабаева

Еңбек нарығындағы тенденцияларды салыстырмалы талдау үшін мәтінді өңдеу технологиясын қолдану

Аңдатпа:

Мақсаты: Мақаланың негізгі мақсаты халықты жұмыспен қамтудың оң және теріс тенденцияларын, сондай-ақ даму бағыттарына тән траекторияларды анықтау мақсатында әлемдік оқиғалар контексінде посткеңестік кеңістіктегі халықтың жұмыспен қамтылуын талдау.

Әдісі: Зерттеу барысында мәтінді өңдеудің заманауи әдістері, атап айтқанда *Text mining, Word cloud* қолданылды.

Қорытынды: Заманауи технологиялардың, интернет-қосымшалардың қарқынды дамуы деректердің үлкен көлемін генерациялаумен қатар жүреді, оларды уақтылы өңдеу бүгінгі таңда өмірдің әртүрлі салаларында, яғни әлеуметтік, экономикалық, саяси және т.б. негізгі проблемалардың бірі болып табылады. Осы жаһандық мәселені шешуде мәтіндік ақпаратты өңдеудің заманауи әдістері, мәтіндерді интеллектуалды талдау технологиялары көмекке келеді. Бұл құралдар әртүрлі деңгейдегі есептерді шешудің тиімділігін арттыруға мүмкіндік береді. *Text Mining* технологиясына енгізілген алгоритмдер мәтіннің негізгі ұғымдарын, мазмұнын және олардың арасындағы байланысты анықтайды.

Қазіргі мәтін-майнинг жүйесі мен *R-Studio* бағдарламалау тілін біріктіру мәтінді талдау және өңдеу саласында зерттеулер жүргізуге мүмкіндік береді. Бұл жүйелер статистикалық әдістерді пайдалана отырып, жаңалықтар құжаттарының, ғылыми құжаттардың материалдарының, блогтардың, твиттердің, электрондық пошталардың, жарнамалардың және басқа ақпараттардың рейтингін өңдейді. Мәтінді талдаудың негізгі міндеті — қызықтыратын тақырыптар туралы нақты түсінік алу, маңызды ақпаратты шығарып алу. Мәтіндік құжаттарды *Text Mining* әдістерімен талдау бірнеше кезеңдерде орындалады: ақпаратты іздеу, мәтіндерді өңдеу, қажетті ақпаратты алу, *Text Mining* әдістерін қолдану, алынған нәтижелерді талдау және интерпретациялау. Мәтіндерге талдау жүргізу үшін 1995-2020 жылдардағы еңбек және жұмыспен қамту нарығындағы үрдістер туралы ақпаратты қамтитын pdf. форматындағы мақалалар таңдалды.

Тұжырымдама: Соңғы 20 жылда еңбек нарығында және халықты жұмыспен қамтуда елеулі өзгерістер болды. Мәтінді талдау технологиялары зерттеу кезеңінде еңбек нарығында жұмыссыздық, жұмысқа орналасу, жұмыспен қамтуды трансформациялау, жұмыспен қамтудың жаңа нысандарының пайда болуы, әлеуметтік және гендерлік проблемалар және т.б. мәселелер көтерілгенін анықтауға мүмкіндік берді.

Кілт сөздер: мәтінді өңдеу, Word cloud, TF-IDF, LDA, жұмыспен қамту, еңбек нарығы.

А.К. Атабаева

Применение технологии *Text Mining* для сравнительного анализа тенденций на рынке труда

Аннотация

Цель: Основной целью статьи является анализ занятости населения на постсоветском пространстве в контексте мировых событий для идентификации позитивных и негативных тенденций в сфере занятости, а также характерных траекторий направлений развития.

Методы: В процессе исследования использовались современные методы обработки текстов, в частности, Text mining, Word cloud.

Результаты: Стремительное развитие современных технологий, интернет-приложений сопровождается генерацией больших объемов данных, своевременная обработка которых является на сегодняшний день одной из главных проблем различных сфер жизни — социальных, экономических, политических и др. В решении данной глобальной проблемы на помощь приходят современные методы обработки текстовой информации, так называемые технологии интеллектуального анализа текстов. Данные инструменты позволяют повысить эффективность решения разного уровня задач. Алгоритмы, заложенные в технологии *Text Mining,* выявляют основные понятия текста, содержание и взаимосвязи между ними.

Интеграция современных систем текст-майнинга и языка программирования *R-Studio* дает возможность проводить исследования в области анализа и переработки текста. Данные системы с помощью статистических методов обрабатывают рейтинг новостных документов, материалы научных документов, блогов, твитов, электронных писем, рекламы и другую информацию. Основной задачей анализа текста является получение четкого представления об интересующих темах, извлечение важной информации. Анализ текстовых документов методами *Text Mining* выполняется в несколько этапов: поиск информации, предобработка текстов, извлечение требуемой информации, применение методов *Text Mining*, анализ и интерпретация полученных результатов. Для проведения анализа текстов отобраны статьи в формате *pdf,* включающие информацию о тенденциях на рынке труда и занятости за 1995–2020 годы.

Выводы: За последние 20 лет произошли значительные изменения на рынке труда и занятости. Техноло-

гии анализа текстов позволили выявить, что на протяжении исследуемого периода на рынке труда поднимались вопросы безработицы, трудоустройства, трансформации занятости, появление новых форм занятости, социальные, гендерные проблемы и др.

Ключевые слова: анализ текстов, Word cloud, TF-IDF, LDA, занятость, рынок труда, Text Mining, новые формы занятости.

References

Atenstaedt, R. (2017). Word cloud analysis of the *BJGP*: 5 years on. *British Journal of General Practice*, 67 (658), 231-232. https://doi.org/10.3399/bjgp17X690833

Atenstaedt, R. (2012). Word cloud analysis of the *BJGP*. *British Journal of General Practice*, 62 (596), 148. https://doi.org/10.3399/bjgp12X630142

Bolshakova, E. I., Voroncov, K. V., Lukashevich, N. V., & Sapin, A. S. (2017). Avtomaticheskaia obrabotka tekstov na estestvennom yazyke i analiz dannykh [Automatic text processing in natural language and data analysis]. Moscow: Natsionalnyi issledovatelskii universitet "Vysshaia shkola ekonomiki" [in Russian].

Buro natsionalnoi statistiki Agenstva po strategicheskomu planirovaniiu i reformam RK [Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan]. Retrieved from https://stat.gov.kz/official/industry/25/statistic/5[in Russian].

Cai, J., Luo, J., Wang, S., & Yang, S. (2018). Feature selection in machine learning: A new perspective. *Neurocomputing*, 300, 70–79. https://doi.org/10.1016/j.neucom.2017.11.077

Kabakof, R. (2015). R v deistvii [R in action]. Retrieved from https://www.manning.com [in Russian].

Kalabin, A. L., & Korneeva, E. I. (2020). Analiz informatsionnykh kriteriev otbora znachimykh priznakov v metodakh Text Mining [Analysis of information criteria for selecting significant features in text mining methods]. Vestnik Voronezhskogo gosudarstvennogo universiteta. Seriia Sistemnyi analiz i informatsionnye tekhnologii [Proceedings of Voronezh State University. System analysis and information technologies Series], 2, 150–159 [in Russian].

Kim, S., & Gil, J. (2019). Research paper classification systems based on TF-IDF and LDA schemes. *Human-centric Computing and Information Sciences*, 9(1), 1-21. https://doi.org/10.1186/s13673-019-0192-7

Kovtun, D. B. (2021). Issledovanie vnutrivedomstvennogo vzaimodeistviia organov vlasti RF na osnove dokumentov strategicheskogo planirovaniia s pomoshchiu tekhnologii Text Mining [The study of intradepartmental interaction of the authorities of the Russian Federation on the basis of strategic planning documents using Text Mining technology]. Moskovskii ekonomicheskii zhurnal [Moscow Economic Journal], 2, 1–10 [in Russian].

Mark, P. J. (2012). Learning RStudio for R Statistical Computing. Packt Publishing. Mastitskii, S. E., & Shitikov, V. K. (2014). Statisticheskii analiz i vizualizatsiia dannykh s pomoshchiu R [Statistical analysis and data visualization with R] [in Russian].

Mezentseva, O., & Kolomiiets, A. (2020). Optimization of analysis and minimization of information losses in text mining. *Herald of Advanced Information Technology*, 3(1), 373–382.

Nguyen, M. T. (2019). Testirovanie metodov mashinnogo obucheniia v zadache klassifikatsii *http* zaprosov s primeneniem tekhnologii TFIDF [Machine Learning methods testing within http requests classification problem with the use of TFIDF algorithm]. *Vestnik Voronezhskogo gosudarstvennogo universiteta. Seriia Sistemnyi analiz i informatsionnye tekhnologii [Proceedings of Voronezh State University. System analysis and information technologies Series]*, 4, 119–131 [in Russian].

Ramsden, A., & Bate, A. (2008). *Using Word Clouds in Teaching and Learning*. University of Bath. Retrieved from http://opus.bath.ac.uk/474/.

Shipunov, A. B., Baldin, E. M., Volkova, P. A., Korobeinikov, A. I., Nazarova, S. A., Petrov, S. V., & Sufiyanov, V. G. (2014). Nagliadnaia statistika. Ispolzuem R! [Visual statistics. Let's use R!]. Retrieved from http://ashipunov.info/shipunov/school/books/rbook.pdf [in Russian].

Turner, D. (2017). Word clouds and word frequency analysis in qualitative data. *Quirkos.* Retrieved from https://www.quirkos.com/blog/post/word-clouds-and-word-frequency-analysis-in-qualitative-data/.

Udgave, A., & Kulkarni, P. (2020). Text Mining and Text Analytics of Research Articles. *Palarch's Journal Of Archaeology Of Egypt/Egyptology*, 17(6), 1–7.

Verzani, J. (2017). Getting started with RStudio. *O'Reilly Media*, 98.

DOI 10.31489/2022Ec4/26-33
JEL: N15, N35, N45, O20, O38, O53, P11
UDC 330.34-048.35(519.5):221.7

O. Borzenko[*1], I.S. Piliaiev[2]

[1,2]Institute for Economics and Forecasting,
the National Academy of Sciences of Ukraine, Kyiv, Ukraine
[1]slozko2003@ukr.net, [2]igor.piliaiev@gmail.com

[1]https://orcid.org/0000-0002-1017-5942 [2] https://orcid.org/0000-0001-7509-3158
[1]Scopus Author ID: 57208315150 [2] Scopus Author ID: 57189220854
[1]Researcher ID: 0782819 [2] Researcher ID: 2492727

The Impact of Values on National Reconstruction: Is the Case of South Korea Appropriate for Ukraine?

Abstract

Object: to study the applicability of the South Korean experience of the post-war national reconstruction and development to post-war economic recovery of Ukraine in correlation with those countries' evolutionary positions on the Inglehart–Welzel cultural map of the world and the current state of the global economic environment.

Methods: abstract-logical; the interdisciplinary application of tools of political economy, sociology, theory of modernization and the world-system theory; axiological approach; comparative analysis.

Findings: a comparison of the key cultural and value parameters of the development of Ukraine and South Korea in the context of the tasks of the post-war reconstruction of the Ukrainian economy and the current state of the global economic environment was carried out. The cause-and-effect relationships of the "South Korean economic miracle" with the system of social values were determined. In this context, the possibility of applying the South Korean experience of national reconstruction for the post-war recovery of Ukraine's economy was substantiated.

Conclusions: it was inferred that the potential South Korean "Marshall Plan for Ukraine" could include, along with the financial and material resource assistance from the Republic of Korea, also the systematic use of South Korean experience in post-war reconstruction and modernization of the national economy under conditions of a long-term armed confrontation with "Northern neighbor" and bloc confrontation at the regional and global levels.

Keywords: values, national reconstruction, Confucianism, South Korea, Miracle on the Han River, Ukraine, modernization, post-war economic recovery.

Introduction

The intensifying rivalry for global leadership between the USA and China brought to the fore the problem of comparative analysis of the ethical and value bases of socio-economic dynamics, innovation, and competitiveness of the Euro-Atlantic, primarily Protestant, community, on the one hand, and the East Asian, primarily Confucian, on the other, especially from the viewpoint of competitive advantages of the respective systems of ethical values and their mutual adaptability potential.

In view of the full-scale war being waged by the Russian Federation against Ukraine since February 24, 2022, that has already led to huge destruction of the Ukrainian economy, including its critical infrastructure, the problem of the post-war reconstruction of Ukraine's national economy and, in this regard, foreign experience of successful post-war reconstruction and modernization of national economy, especially that of South Korea, "arguably, the most Confucian in its legal, political, and cultural practices" (Kim, 2015) is of particular importance and relevance.

The study of value factors of the phenomenally successful reconstruction and modernization of South Korea (the Miracle on the Han River), which took place during 1960s-1990s after the Korean War of 1950-1953, has considerable theoretical and practical significance for effectively overcoming the consequences of the ongoing full-scale Russia-Ukraine war, post-war reconstruction and modernization development of the national economy. This involves the adaptation of the relevant South Korean experience to the post-war Ukrainian realities to support the Ukrainian society on the way to the sustainable development goals.

Literature review

Despite the existence of a number of fundamental academic works devoted to the study of the relationship of Confucianism with modernization, industrialization, and economic growth (by Kyong-Dong Kim, Sungmoon Kim, Jennifer S. Oh, Chong-Min Park, Joseph Wong, Doh Chull Shin, Andrew Swiston, Igor

[*] Corresponding author's e-mail: *slozko2003@ukr.net*

Tolstokulakov, Ezra F. Vogel, Wei-Bin Zhang, Ukrainian scholars Leonid Leshchenko, Yuri Mazur, Kan Den Sik et al.), the problems, opportunities, and prospects for applying the modernization experience of South Korea for European non-EU transition economies, particularly for Ukraine, still remain practically unexplored.

In Ukraine, L. Kistersky, V. Marmazov, I. Piliaiev, H. Kis, I. Haliuk, I. Fedulova, I. Sovershenna et al. dedicated their studies to the issue of the phenomenal success of "East Asian Tigers" in building diversified and competitive national economies (Kistersky et al., 2021; Kis, Haliuk, 2020; Fedulova, Sovershenna, 2020). However, the principal research problem herewith relates to adaptation of the respective foreign experience to present and post-war realities of Ukraine's economy and society that raises a question whether and to which extent the above experience remains appropriate.

Methods

Through the interdisciplinary approach, updated tools of political economy, sociology, theory of modernization and the world-system theory are applied in the article. A special attention in the research is paid to the axiological approach in the study of ethical values' impact on national reconstruction and competitive development. The comparative analysis is used to analyze main cultural and value factor differences between the Eastern and Western centers of the global leadership and socio-economic dynamics. The abstract-logical, qualitative reflexive analysis is used to analyze graphic & quantitative data and draw the research conclusions.

Results

Any given economy is a set of processes that involve some respective culture, values, education, innovative advancement, history, social organization, political structure, lawful frameworks, and common assets as fundamental variables. These components provide setting, substance, and set the conditions and parameters – a kind of "soft infrastructure" in which an economy functions as a social space of interrelated human activities. In its turn, a culture itself is a social system that shares a set of common values. As points out Agner Fog, "Many cultural variables are related to development, modernization, emancipation, and secularization. These factors are often strongly correlated with each other" (Fog, 2022).

As posited Ronald Inglehart and Christian Welzel, "The most recent wave of democratization does not seem to have been motivated mainly by a desire for greater income equality <…>; it was driven by the fact that a large share of the population gave high priority to freedom itself. This is particularly true of the democratization movements in communist countries, which were acting against regimes that already provided relatively high levels of economic equality—and installed regimes that provided less economic equality but higher levels of freedom" (Iglehart, Welzel, 2010). The Inglehart–Welzel cultural map of the world represents the cultural values of the nations of the world along two aggregate factor dimensions: The traditional versus secular-rational values reflect the transition from a religious understanding of the world to a dominance of science and bureaucracy. The second dimension named survival values versus self-expression values shows the transition from industrial to post-industrial society (World Values Survey, 2022). In the latter people place a relatively high value on individual freedom and self-expression, and have activist political orientations. These are just the traits that the political culture literature characterizes as crucial to democracy (Fog, 2022).

To highlight the global shifts in the crucial cultural factors of socio-economic dynamics of the contemporary world since the 2008 global financial crisis, we compared the Inglehart-Welzel World Cultural Map (Wave 5) constructed according to the results of the World Values Survey conducted around the world from 2005 to 2008 (Fig. 1), and the most recent similar map (Wave 7) based on the World Values Survey and European Values Study held from 2017 to 2022 (Fig. 2).

Figure 2 demonstrates that the most comprehensive quantitative studies of cultural differences between East Asian cultures and Western cultures, countries of the Confucian tradition are currently in the "Golden Mean" of the value structure of the contemporary world and at the top of the scale of secular-rational values juxtaposed to traditional religious beliefs. Moreover, those countries, primarily China and South Korea, are further consolidating the role and influence of Confucian values in their societies, while Western Europe and, to a lesser extent, the United States are increasingly moving away from the previously dominant Christian values in the political, ethno-cultural, and socio-cultural dimensions. This significantly and even radically affects their economy and geo-economic position in the modern world.

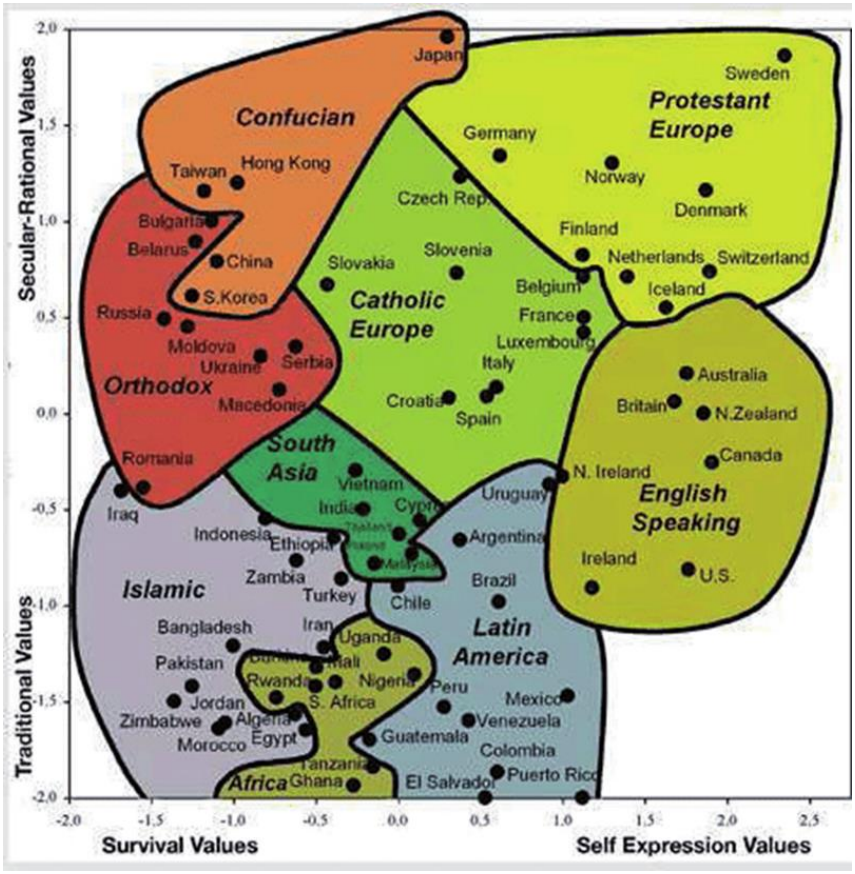


Figure 1. The Inglehart-Welzel World Cultural Map 2005-2008

Note – compiled by Inglehart & Welzel, 2010

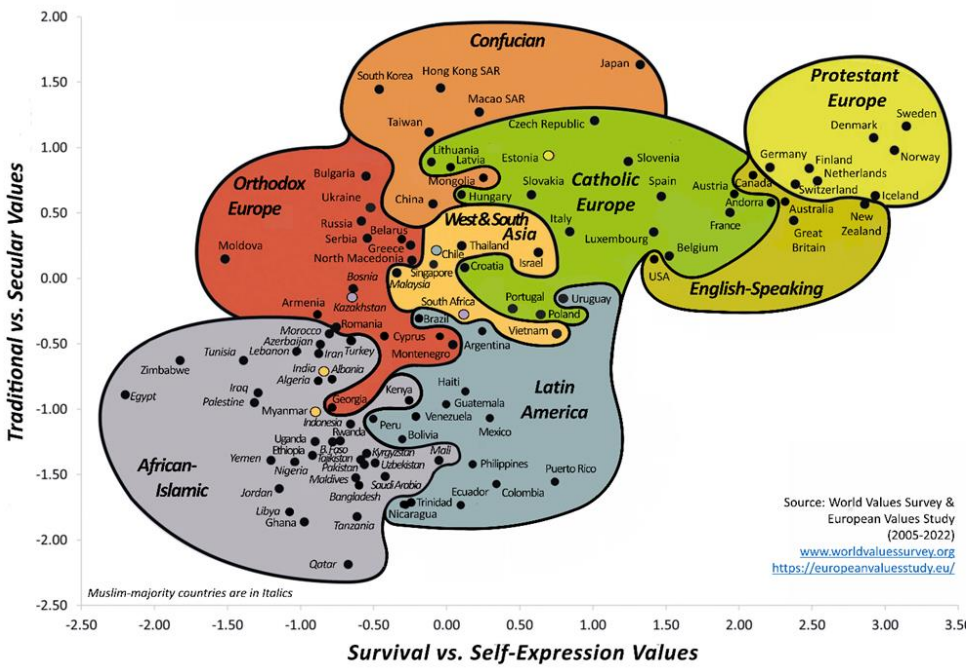


Figure 2. The Inglehart-Welzel World Cultural Map 2022

Note – compiled by World Values Survey & European Values Study (2005–2022). Retrieved from www.worldvaluessurvey.org; https://europeanvaluesstudy.eu/

It is clear from Figure 2 that Ukraine and Belarus are close to mainland China on the cultural map of the world – much closer than Taiwan or the special administrative regions of Hong Kong and Macau. As for Kazakhstan, in terms of the strength of secular values as a development factor, is on a scale much higher than

other Islamic countries – in the group of post-communist countries of Eastern and South-Eastern Europe, and in terms of the development of self-expression values, just like Ukraine and Russia, it yields to China and is close to its Central Asian neighbors, Kyrgyzstan and Uzbekistan.

The proximity of Kazakhstan, Ukraine, and a number of other post-Soviet countries to the main cultural and value factor characteristics of the Confucian civilization countries, on the one hand, and the absence, despite widespread misconceptions, of ethnocentricity in Confucian culture, but on the contrary, its universal character as a secular cultural-value system give hope for the successful application of the experience of socio-economic modernization of Confucian countries, societies and national economies both in Ukraine and in Kazakhstan. This includes, among other things, an in-depth study of the correlation between the purposeful regulation of the dynamics of value factors and economic modernization.

It must be borne in mind that the combination of traditional Confucian values with the modernization ideas of European religious and political-philosophical teachings in the political theory and practice of both China and South Korea became the catalyst for the effective impact of Confucian values on the processes of national reconstruction and socio-economic modernization. In South Korea, these are, first of all, the ideas of German sociology (*Sozialstaat*, or *welfare state*), American Protestantism, liberalism; in mainland China – Marxist socialism "with a Chinese face".

Thus, over the past 14 years, the stunning economic successes of the countries of the Confucian tradition, primarily the PRC, Taiwan and the Republic of Korea, led to the fact that they found themselves in a position of the Golden Mean on the specified two-factor cultural scale of the world. That is, they essentially brought to life the most important, cornerstone principle of Confucian teachings – the principle of the Golden Mean harmony. At the same time, among the EU states, Hungary is currently closest to China in terms of the proximity of indicators of these aggregated cultural parameters.

Ukraine and Belarus are closer to mainland China than Russia. There has been also a "spreading" of the value consolidation of the Anglo-Saxon world, where Great Britain, Australia, New Zealand and Canada have been significantly ahead of the United States in terms of strengthening self-expression values. And the same strengthening has taken place in Protestant continental Europe, while in the United States (it should be considered that the time frame of the survey captured the period of Donald Trump's presidency) there has been some rollback, weakening self-expression values combined with some strengthening secular values and a decrease in the influence of traditional religious values.

Today, in terms of the ratio of traditional religious and secular values, Ukraine is on the same level as China and close to Hungary and Slovakia. It is also interesting that Mongolia occupies a place on the world cultural map very close to the Baltic countries and Hungary, that indicates a relative nature of the East-West paradigm, which is popular in the West and Eastern Europe. In this regard, a historically rather long stay of the major part of modern Ukraine in the Mongol (Horde) Empire (1240s-1360s) is perceived in a completely different light, i.e., in the peripheral zone of the cultural, civilizational and value influence (mediated through the Mongols) of the Confucian Celestial (China), which at that time was the most advanced country in the world economically and culturally.

The Republic of Korea has accumulated an interesting experience of reconstruction and development in the context of Ukrainian analogies under conditions of the seizure of a part of its national territory by an adversary neighbor and an unfinished war, the actual freezing of the conflict without a peace treaty. The Miracle on the Han River was achieved by: 1) mobilizing political will, 2) effective use of the positive features of the national mentality and value system, especially Confucianism and Korean Protestantism (including in the sphere of social responsibility and solidarity); 3) through deep integration of the national economy into the world economic and financial system based on comparative competitive advantages with a strong role of the state and robust protectionism of the national industries prospectively competitive in the global market.

As Francis Fukuyama posits, the pandemic's global political stress test has testified that "countries with weak state capacity or poor leadership will be in trouble, set for stagnation, if not impoverishment and instability. <...> To handle the initial stages of the crisis successfully, countries needed not only capable states and adequate resources but also a great deal of social consensus and competent leaders who inspired trust. This need was met by South Korea, which delegated management of the epidemic to a professional health bureaucracy, and by Angela Merkel's Germany" (Fukuyama, 2020). It means that the classical German social state model taken, along with Anglo-American democracy institutions, back in the 1960s, as a sample for adaptation by the Republic of Korea, has proved its viability before the new global challenges. It should be noted that among Ukrainian scientists there is no consensus on the appropriateness of the systematic use of the South Korean experience of export-oriented industrialization in modern geopolitical, geoeconomic and

socio-economic realities of Ukraine as well as the applicability of the above experience for the post-war reconstruction of the national economy.

As L. Kistersky, V. Marmazov and I. Piliaiev substantiated in their recent research, the combination of Confucian values with the values of modern Christianity, especially in its reformed version of Protestantism (two the most rationalistic and competitive ethical and value systems of Modernity), and the multicultural values of modern globalized society, as it happened in the Republic of Korea, can result in a modernization breakthrough (Kistersky et al., 2021).

Meanwhile, another opinion argues that the restrictive nature of modern multilateral trading system in the sphere of tariff protection for "infant industries", multiple WTO's obligations restraining government support of investment and technologies transfer as well as numerous regional trade agreements, like the EU-Ukraine Association Agreement (entered into force on September 1, 2017), call into question the expediency of copying the East Asian strategies of export-oriented industrialization in contemporary global economy (Ivanov, 2022).

Indeed, for example, the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) restricts its members from using reverse engineering and other forms of copying innovations that played a crucial role in the development of manufacturing and technological capabilities in the early stages of industrialization in East Asia (Kim, 1998). The WTO Agreement on Subsidies and Countervailing Measures expressly prohibits governments from supporting domestic producers by providing export subsidies and subsidies that favor domestic goods over imported ones (World Trade Organization, 2019). Also, the Ukraine-EU Association Agreement stipulates that Ukraine must take measures to implement EU technical regulations (European Union, 2014). Thus, Ukraine provided EU companies with simplified access to its national market and a guarantee of unimpeded repatriation of investments and any profits, while it is still very difficult for Ukrainian exporters to ensure compliance with complex EU quality and environmental standards.

International and regional integration institutional and legal restrictions are, of course, an important factor in the formation of the state policy for the post-war reconstruction of Ukraine. However, in our opinion, it should not be taken as an absolute, since the institutions themselves and institutional rules are dynamically changing and transforming as the key parameters of the international order, the system of international political, economic and financial relations change, global leadership being restructured, etc. Currently, for example, the WTO Appellate Body cannot hear appeals at all because the term of its last member has expired on November 30, 2020 (World Trade Organization, n.d.).

In addition, restrictions within the framework of the WTO agreements relate to international trade, and not directly to domestic industrial policy with regard to the birth and growing up new "infant" industries) or policy within the framework of integration economic unions aimed at the advanced development of certain countries and regions or the active development of national innovative potential as a basis for a modernization spurt. It is characteristic that among the post-Soviet countries, Kazakhstan, for example, joined the WTO only on November 30, 2015, and Azerbaijan, which has been developing rather successfully and steadily, is not yet a WTO member.

The aggravation, up to the state of a new Cold war and proxy war, of relations between major world actors as well as the geostrategic struggle for world economic and financial leadership leads to the predominance of the geopolitical considerations over purely market ones of comparative advantages, short-term economic and financial benefits. Key economic decisions, even at the corporate level, as, for example, in the case of the problematic purchase of Twitter by Elon Musk, are primarily determined by political factors. Figuratively speaking, in times of existential societal insecurity from the individual to global level, the market value economy is overruled by the economy of values.

Moreover, participants of the WTO system do not always consistently adhere to its key principles, and sometimes retreat from their obligations, resorting to protectionism, especially in times of crisis. *Global Trade Alert*, an independent monitor of policies affecting world trade, recorded in 2009-2020 more than 19,500 new regulatory measures restricting the international movement of goods, services, capital and labor, and only 7,800 measures aimed at the liberalization of international economic relations (General Trading Agreement, 2021).

Likewise, under conditions of extraordinary force majeure (Brexit, Covid-19, the Russia-Ukraine war), provisions of the EU-Ukraine Association Agreement, which were developed, agreed and ratified by contracting parties under significantly different geopolitical, international and global realities, may not be considered untouchable "Holy Scripture". Moreover, the awareness of the need for greater flexibility and adapt-

ability of institutional and legal instruments to the rapidly changing geopolitical and geo-economic realities in order to preserve the existing normative order is becoming more and more typical for the European (and, more broadly, Western) scientific and expert community. For example, scholars from the European University Institute consider that, "to confront the adverse consequence of the Russian invasion of Ukraine" within the European Union legal framework, finally "rules such as fiscal and state aid rules, will have to be redefined given new challenges and new circumstances" (Del Carmen Sandoval Velasco et al., 2022).

Particularly, 30 partner countries of Ukraine in negotiations on joining the WTO could make exceptions for Ukraine in terms of temporarily lifting the ban on budgetary (state) export subsidies - as for a country that has become the epicenter of an armed conflict of a virtually global level. This decision should be taken at the level of the G7 and the EU, which would include the temporary suspension of certain provisions of the Association Agreement that curb state support for industrial reconstruction and at least the renewal of pre-war export volumes from Ukraine. After all, the restrictions within the framework of the WTO agreements relate primarily to international trade, and not to internal structural policies aimed, e.g., at the active development of national innovation capacity as a basis for a modernization breakthrough, or policies within interstate integration unions aimed at advancing the development of certain countries or regions.

Discussions

Michael Bond distinguished as one of the determining cultural factors of national economic development the "Confucian Work Dynamism" dimension (Chinese Culture Connection, 1987) (as it mainly contained items to be found in the teachings of Confucius) through juxtaposing dynamic, future-oriented values on its positive pole to static, past- and present-oriented ones on the negative pole. In 1991 Geert Hofstede suggested to name this dimension "Long- versus Short-Term Orientation" (LTO), as the already achieved by that time and predicted economic growth in the last three decades of the 20 century was highly significantly correlated with LTO cultural values (Hofstede et al., 2010). East Asian Confucian tradition nations and economies tended to score high on this dimension, suggesting a long-term orientation. Continental European countries had average scores, whereas Anglo, African, and South Asian countries had low scores, suggestive of a short-term orientation (Minkov, Hofstede, 2012). This evidence can be fairly aligned with the deep-rooted experience of medium-term and long-term planning in Japan, China, South Korea and, at the same time, for several decades of the existence of a "socialist planned economy" in the USSR and the states of Central and Eastern Europe.

As later found Michael Minkov and Geert Hofstede, although LTO is strongest in East Asia, the eastern parts of Eastern Europe and Kyrgyzstan also score high. In the above authors' opinion, that is consistent with "the high levels of educational achievement in Eastern Europe and with its recent economic boom" (Minkov, Hofstede, 2012), prior to the 2008 world financial crisis. Meantime, the LTO measure verifies "a fairly clear contrast between Asia and Eastern Europe, on the one hand, and Africa, the Middle East, and Latin America, on the other hand", from what the authors make, however, the following rather dubious conclusion: "The high scores of the Eastern European countries confirm that an association with Confucianism is not quite appropriate" (Minkov, Hofstede, 2012). To our mind, on the contrary, the proximity of the Eastern European and post-Soviet-Eurasian countries to the East Asian countries in terms of LTO testifies to the high potential of the latter in fruitful perception and implementation of progressive rational-secular elements and values of Confucianism.

Conclusion

In view of the above, the potential South Korean "Marshall Plan for Ukraine" could include, along with the financial and material resource assistance from the Republic of Korea, also the systematic use of South Korean experience in post-war reconstruction and modernization of the national economy under conditions of a long-term armed confrontation with "Northern neighbor" and bloc confrontation at the regional and global levels.

References

Chinese Culture Connection (1987). Chinese values and the search for culture-free dimensions of culture. *Journal of Cross-Cultural Psychology,* Vol. 18, Issue 2, pp. 143–164.

Del Carmen Sandoval Velasco, M., Beck, T., & Schlosser, P. (2022). The impact of the Ukraine crisis in the EU economic and financial union. *Policy Brief.* Issue 2022/43. San Domenico di Fiesole: European University Institute, 12. https://cadmus.eui.eu/bitstream/handle/1814/74815/QM-AX-22–043-EN-N.pdf? sequence=1

European Union (2014). Association Agreement between the European Union and its Member States, of the one part, and Ukraine, of the other part. *Official Journal of the European Union.* Retrieved from https://trade.ec.europa.eu/doclib/docs/2016/november/tradoc_155103.pdf

Fedulova, L. I., & Sovershenna, I. O. (2020). Peculiarities of Korean National Innovative System Development: Experience for Ukraine During Transformation of Innovative Processes. *Innovative Economy*, No. 1–2, pp. 9–14.

Fog, A. (2022). Two-dimensional models of cultural differences: Statistical and theoretical analysis. Preprint. Retrieved from https://www.researchgate.net/publication/360108394

Fukuyama Francis (2020). The Pandemic and Political Order. It Takes a State. *Foreign Affairs*, Vol. 99, No. 4. Retrieved from https://www.foreignaffairs.com/articles/world/2020–06–09/pandemic-and-political-order

General Trading Agreement (2021). Total Number of Implemented Interventions Since November 2008. Retrieved from https://www.globaltradealert.org/global_dynamics/area_all

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind*. London: McGraw-Hill, 561.

Inglehart, R., & Welzel, C. (2010). Changing Mass Priorities: The Link Between Modernization and Democracy, Vol. 8. Issue 2, pp. 551–567.

Ivanov, Y. (2022). Asian Tigers' Experience of Export-Oriented Industrialization: Is It Relevant for Modern Ukraine? *Economic Bulletin of NTUU "Kyiv Polytechnic Institute"*, 21, 16–23.

Kim, K. (1998). Technology transfer: the case of the Korean electronics industry. *Proceedings of the Thirty-First Hawaii International Conference on System Sciences*. Kohala Coast: Institute of Electrical and Electronics Engineers, Vol. 6, pp. 233–241.

Kim, S. (2015). Introduction. In: S. Kim (Ed.). *Confucianism, Law, and Democracy in Contemporary Korea*. London; New York, Rowman & Littlefield, 5–24.

Kis, H., & Haliuk, I. (2020). Directions of Improvement of State Anti-Crisis Regulation System in Ukraine. *Infrastructure of market*, Vol. 49, pp. 41–45.

Kistersky, L., Marmazov, V., & Piliaiev, I. (2021). Modernization of South Korea: Origins, Achievements, and the Experience for Ukraine. *Economy of Ukraine*, No. 9, pp. 41–60.

Kistersky L., Marmazov V., & Piliaiev I. (2021). *Prospects for the East-West Civilizational Convergence: Confucian Tradition Democracy in the Republic of Korea*. Prague: Coretex CZ SE, 248 pp.

Minkov, M., & Hofstede, G. (2012). Hofstede's Fifth Dimension: New Evidence from the World Values Survey. *Journal of Cross-Cultural Psychology*. Volume 43, Issue 1, pp. 3–14. https://doi.org/10.1177/0022022110388567

Trading Partners with Trade Agreements — WTO, EPA/FTA and IIA. https://www.meti.go.jp/english/ report/data/2019WTO/pdf/02_07.pdf

World Trade Organization (2019). Chapter 7: Subsidies and Countervailing Measures. Report on Compliance by Major

World Trade Organization (n.d.). Appellate Body. https://www.wto.org/english/tratop_e/dispu_e/appellate_body_e.htm (Date of access: October 12, 2022).

World Values Survey (2022). Inglehart–Welzel Cultural Map. https://www.worldvaluessurvey.org/WVSContents.jsp?CMSID=Findings

Е. Борзенко, И.С. Пиляев

Құндылықтардың ұлттық қайта құруға әсері: Оңтүстік Кореяның кейсі Украина үшін келеді ме?

Аңдатпа

Мақсаты: Инглехарт–Вельцель әлемінің мәдени картасындағы осы елдердің эволюциялық жағдайымен және жаһандық экономикалық ортаның қазіргі жағдайымен байланысты Украина экономикасын соғыстан кейінгі қалпына келтіруге ұлттық қайта құру мен дамудың Оңтүстік Корея тәжірибесінің қолданылуын зерттеу.

Әдістер: Мақаланы жазу кезінде абстрактілі-логикалық әдіс, аксиологиялық тәсіл, салыстырмалы талдау қолданылды, саяси экономика, әлеуметтану, модернизация теориясы және әлем-жүйелік теория құралдары пәнаралық қолданысқа ие болды.

Қорытынды: Украина мен Оңтүстік Кореяның дамуының негізгі мәдени-құндылық параметрлері Украина экономикасын соғыстан кейінгі қалпына келтіру және әлемдік экономикалық ортаның қазіргі жағдайы тұрғысынан салыстырылды. «Оңтүстік рейстік экономикалық ғажайыптың» әлеуметтік құндылықтар жүйесімен себеп-салдарлық байланыстары анықталды. Бұл тұрғыда Украина экономикасын соғыстан кейінгі қалпына келтіру үшін Оңтүстік Кореяның ұлттық қайта құру тәжірибесін қолдану мүмкіндігі негізделген.

Тұжырымдама: Әлеуетті Оңтүстік Кореяның «Украинаға арналған Маршалл жоспары» Корея Республикасының қаржылық және материалдық-ресурстық көмегімен қатар, соғыстан кейінгі қайта құру мен ұлттық экономиканы модернизациялаудың Оңтүстік Кореяның тәжірибесін «солтүстік көршімен» ұзақ мерзімді қарулы қақтығыс және аймақтық және жаһандық деңгейдегі блоктық қақтығыс жағдайында жүйелі түрде қолдануды қарастыруы мүмкін деген қорытынды жасалған.

Кілт сөздер: құндылықтар, ұлттық қайта құру, конфуцийшілдік, Оңтүстік Корея, ғажайып хан, Украина, модернизация, соғыстан кейінгі экономиканы қалпына келтіру.

Е. Борзенко, И.С. Пиляев

Влияние ценностей на национальную реконструкцию: подходит ли кейс Южной Кореи для Украины?

Аннотация:

Цель: Исследовать применимость южнокорейского опыта национальной реконструкции и развития к послевоенному восстановлению экономики Украины во взаимосвязи с эволюционным положением этих стран на культурной карте мира Инглхарта–Вельцеля и текущим состоянием глобальной экономической среды.

Методы: При написании статьи были использованы абстрактно-логический метод, аксиологический подход, сравнительный анализ, получили междисциплинарное применение инструменты политической экономии, социологии, теории модернизации и мир-системной теории.

Результаты: Проведено сравнение ключевых культурно-ценностных параметров развития Украины и Южной Кореи в контексте задач послевоенного восстановления экономики Украины и современного состояния мировой экономической среды. Определены причинно-следственные связи «южнокорейского экономического чуда» с системой социальных ценностей. В этом контексте обоснована возможность применения южнокорейского опыта национальной реконструкции для послевоенного восстановления экономики Украины.

*Выводы: С*делан вывод о том, что потенциальный южнокорейский «план Маршалла для Украины» может предусматривать, наряду с финансовой и материально-ресурсной помощью Республики Корея, также системное использование южнокорейского опыта послевоенной реконструкции и модернизации национальной экономики в условиях длительного вооруженного противостояния с «северным соседом» и блокового противостояния на региональном и глобальном уровнях.

Ключевые слова: ценности, национальная реконструкция, конфуцианство, Южная Корея, Чудо на Хан, Украина, модернизация, послевоенное восстановление экономики.

DOI 10.31489/2022Ec4/34-43
JEL M12,E24, J33
UDC 331.108.244

G.E. Kabakova[1*], L.A. Kazbekova[2], M.B. Nakipova[3]

[1,2] Korkyt Ata Kyzylorda University, Kazakhstan;
[3] JSC Oil company "KOR", Kazakhstan
[1]k.gul82@mail.ru, [2]limanka@mail.ru,[3]marzhan.nakipova.@kor.kz

[1]https://orcid.org/0000-0003-2534-6967
[2]https://orcid.org/0000-0001-7480-3541

Improving the system of personnel incentives in the oil and gas industry

Abstract

Object: Due to objective reasons, the existing incentive system in the oil and gas industry turned out to be irrelevant and does not correspond to modern Kazakhstan market conditions. The problem is that currently, in the conditions of digitalization and innovative development, changes are taking place in our country, in which we must accept and adapt our development policy to these realities. The purpose of this article is to study new methods for improving existing incentive systems for personnel at oil and gas producing enterprises.

Methods: Current personnel problems and documents regulating the activities of the company's employees were reviewed and analyzed in the oil and gas companies of the region, and practical recommendations and methods were given to improve the incentive system and regulations on remuneration of employees in the activities of oil and gas companies.

Findings: The importance of applying the calculation of annual, quarterly and monthly bonus payments, the conditions for the payment of bonus payments, the criterion of the employee's efficiency coefficient, additional conditions for the payment of bonus payments to each employee, as well as the frequency of payment of bonus payments was noted.

Conclusions: Companies should ensure transparency and openness in personnel management, constantly improve incentive and management methods, provide favorable working conditions, use part of the company's profits for professional development, retraining, obtaining new skills, realizing personal and professional potential by employees.

Keywords: incentive system, transformation, personnel policy, personnel potential, digitalization, personnel, competencies, oil and gas industry.

Introduction

Today, one of the important problems of the development of the oil and gas industry, as well as any other industry, is its staffing. Competition and instability of the world market today require oil companies to identify and develop the main competitive advantages of these companies, to identify and give an objective legitimate assessment of the personnel policy. Therefore, the selection and hiring of highly qualified personnel, the correct assessment of their participation in the production process, motivation and stimulation of their contribution to the profit for oil and gas companies ensures an increase in labor productivity due to the professionalism of personnel, and not due to the reduction of technical personnel. At the same time, motivation and stimulation of personnel is a rather complex part of the personnel policy of the enterprise (Simarova I.S et al., 2018).

The problems of stimulating labor productivity, assessing human potential and others related to well-being and motivation for labor relations have been considered by many authors, in particular, E.B. Isakulov, S.M. Kopkin, V.P. Gorshenin, A.G. Gribov, Z.D. Lobachev, L.I. Lukicheva and others, consider the personnel potential, in which they address the issues of the role and place of a person in modern society.

Changes in technological processes, the quality of human resources, market conditions, the gradual depletion of traditional oil reserves and a decrease in the growth rate of oil production in the fields of the Kyzylorda region revealed the need for the development of completely new groups of professional abilities and production competencies among oil and gas industry workers, as well as new methods of stimulating personnel generated by the need for successful development of enterprises in the region.

Hypothesis. The personnel policy of oil and gas producing enterprises does not meet modern requirements for stimulating personnel and requires revision. Recommendations have been developed for the development of Provisions on bonuses that will increase labor productivity and improve relationships between employees. HR services should restructure their work, develop a new personnel policy, apply unconventional

* Corresponding author. E-mail address: *k.gul82@mail.ru*

incentive systems depending on the specifics of production. These transformations will help oil and gas companies to be competitive in the market, increase production capacity in production, hire qualified personnel for production, which in turn will lead to increased efficiency and production.

In our work, we investigated the activities of an oil company and proposed methods of stimulating personnel.

Literature review

In the modern world, human resources are one of the sources of competitive advantages of enterprises, in this regard, there is a need to organize a personnel management system and strive for its continuous improvement, coordinating the tasks and content of personnel policy with the goals, strategy and constantly changing structure of the organization (Korneyeva Z.A., 2017).

Capacity building in practice is often a constant process of "growing" key employees and managers who have the appropriate professional competence, personal and business qualities necessary for the qualitative implementation of their own activities and the activities of subordinates (E.B. Isakulov, 2010).

According to O.S. Vihansky (O.S. Vihansky, 1998), the concept of "human resources" is based on the possibility of applying economic assessments of people's ability to create a certain income. The higher the individual productivity of an employee and the longer the period of his activity, the more he brings income and is of great value to the enterprise.

In this regard, employee incentives are crucial for effective management. Karrie Lucero suggests learning how to motivate your employees and developing incentives that motivate proper behavior and give employees the opportunity to succeed in their profession (Karrie Lucero, 2021).

In turn, B.A. Rakhmetov argues that the compensation system applied to the category of employees needed by the organization should be competitive, since organizations compete with each other in the labor market to attract specialists necessary to achieve success in strategic issues. (Rakhmetov B.A., 2005).

According to Filin S.A., Filina T.V., employees have their own goals and motives. And what they are most often unknown and, therefore, cannot influence them. That is, they cannot be motivated. But it is possible to take into account the motives of employees, that is, to stimulate (Filin S.A., Filina T.V., 2012).

Larisa A. Ilyina understands the strategy of motivation and stimulation of labor as a set of purposeful processes through which the organization's personnel are involved in various spheres of social production and stimulated by ways and methods that increase both the organizational potential of the company as a whole and their ability to plan activities, as well as independently see and solve problems arising during it (Larisa A. Ilyina, 2013).

In modern conditions, the oil and gas sector of the economy has ceased to be simple and cheap technologically, the extraction of raw materials is carried out using ever-increasing technologies, in the creation of which many billions of dollars are invested and on which the intellectual forces of many countries of the world are working (Shafranik Yu.K., 2011).

According to D.R. Hairova (2021), in order to provide the industry with highly qualified specialists who will become the mainstay of the dynamic development of the oil and gas sector, managers of enterprises and personnel services need to improve the personnel potential management system. From the point of view of formation and use, the concept of human potential can be viewed from two sides: on the one hand, it is an existing personnel reserve that carries out the current production process, on the other hand, the growth of new potential consisting of young specialists and representing the most promising part of the overall potential.

Methods

To conduct this study, the following methods were used: analysis and synthesis methods, summary and grouping of observation materials, absolute and relative values, sampling. The use of these methods makes it possible to develop new Provisions on bonuses, effective personnel policy of oil and gas producing enterprises. Therefore, the main thing in the relations between all the components of the personnel is the need for documentary and methodologically correct formalization of the transformations that have occurred and are taking place in organizations in this area. Personnel services of oil and gas companies need to identify corporate core values and significant goals of activity, convey to each employee the strategies of companies, scenarios of economic and individual behavior adequate to external and internal challenges, work out mechanisms of further transformations in the team, primarily in relation to the system of incentives and motivation of personnel**.**

Results

The incentive system in oil companies has ceased to be a sufficiently complete and adequate management tool for making simple and complex corporate decisions. It does not meet the expectations of the company's owners and its top managers, the expectations of functional and line managers, the expectations of specialists and ordinary employees, which periodically generated and generates a variety of internal and external corporate problematic situations that slow down the sustainable development of oil and gas enterprises themselves in difficult market conditions (Kabakova G.E., Kazbekova L.A., 2020).

A new approach of the incentive system is needed. At the same time, it is important to prevent primitivization, a superficial approach to the mechanisms for assessing the complex production activities of the corporation, its divisions with qualitatively different production technologies. Transformation involves the productivity of each employee, the stimulation of work for the final result of the divisions of the enterprise.

It is necessary to analyze the current personnel problems in the organization and the documents regulating the activities of the company's employees. JSC Oil Company "KOR" was chosen as the object of the study. The purpose of the study in the conditions of competition, the current difficult situation in the oil production market is an updated system of motivation of employees of this company, which should become an important factor in ensuring the increase of human resources and sustainable development of the company.

Discussions

In a rapidly changing economy, the company's management came to the conclusion that the existing system of employee bonuses has turned into a system of mandatory regular payments to all employees without taking into account the real contribution of employee labor to the development of the company. Therefore, the company's administration aims to turn the award into a tool for productive motivation of employees, improving the work of structural divisions, achieving real results of their work. At the moment, the management of the company does not have a holistic and systematic concept of bonuses, since it is difficult to assess the contribution of each employee with different types of functional responsibilities, work activity in the company (Bicheev M.A., 2015). Evaluation of the work of an employee and a production unit is often subjective. The administration of the company uses a simple way of evaluating labor, based mainly on quantitative indicators. This evaluation method does not fully reflect the quality of the work performed and the final results of the work. The definition of quantitative and qualitative criteria for bonuses is not entirely clear to managers and employees of the company. A survey and a meeting with functional and line managers of the company showed different evaluation criteria in different departments, the lack of a unified approach to evaluating employee performance. The development of digital skills among production workers, the management of complex technological equipment, production processes that ensure the smooth operation of the enterprise comes to the fore.

In these conditions, there is an objective need to develop a new provision on bonuses. In oil and gas companies, the term Regulation on the payment of employee benefits is usually used (Kiselev V.D., Nakipova M.B., 2019).

The following sections of the Regulations on the Payment of Remuneration to Employees can be noted: 1) general provisions; 2) conditions and indicators of planned payments; 3) establishment of planned values; 4) evaluation of the results achieved; 5) definition % PV of bonus indicators; 6) determination of % PV for efficiency, taking into account the weight of indicators; 7) determination of the total % PV; 8) determination of the actual % PV; 9) determination of the amount of actual PV payments.

The General Regulation regulates the procedure for calculating annual, quarterly and monthly bonus payments (hereinafter - BP) to employees of JSC "KOR Oil Company" (hereinafter - the Company). In the second section, it is necessary to determine the conditions for the payment of BP, the criterion of the employee's efficiency coefficient, additional conditions for the payment of BP to each employee, as well as the frequency of payment of BP. In the third section, the planned values of efficiency used in the BP system are determined, approved by the Board of Directors at the beginning of the reporting period and are benchmarks (100%) for calculating the BP (the basic plan of the annual budget).

To do this, it is necessary to calculate the critical and upper threshold values of indicators such as the volume of oil production, profit, the share of production costs, the level of industrial safety, ore and environmental protection, etc. (Table 1)

Table 1. Critical and upper threshold values of indicators

Threshold values of indicators	Degree of achievement of efficiency (how % from the reference value of efficiency or the score scored)
Production volume	
Below critical	Less than 95%
Critical value of the efficiency factor	95%
Control value of efficiency factor	100%
Upper threshold value of efficiency factor	105%
Earnings before taxes, interest and depreciation	
Below critical	Less than 90%
Critical value of efficiency	90%
Control value of efficiency	100%
Upper threshold value of efficiency	130%
Free cash flow	
Below critical	Less than 80%
Critical value of efficiency	80%
Control value of efficiency	100%
Upper threshold value of efficiency	130%
Specific production costs	
Below critical	Less than 80%
Critical value of efficiency	80%
Control value of efficiency	100%
Upper threshold value of efficiency	130%
Assessment of the level of industrial safety, labor protection and the environment	
The required level of industrial safety, labor protection and the environment is provided	75-100%
There are minor deviations from the required level of industrial safety, labor protection and the environment	45-74%
There are significant deviations from the required level of industrial safety, labor protection and the environment	15-44%
The required level of industrial safety, labor protection and the environment is not provided	0-14%
Note - source (Kiselev V.D., Nakipova M.B., 2019)	

In the fourth section, in our opinion, it is necessary to assess the results achieved, i.e. it is necessary to determine the percentage of fulfillment of planned indicators according to various criteria. In case of failure to achieve the planned targets, the bonus is not paid. The achievement score by indicators can be calculated using the formula:

$$\% \text{ of achievement} = \text{actual value/planned value} * 100\% \quad (1)$$

The percentage of achievement is also estimated according to the indicator “Unit production costs” and is calculated by the formula:

$$\% \text{ of achievement} = 2 - \text{actual value/planned value} * 100\% \quad (2)$$

In the fifth section, it is necessary to determine the percentage of completion of production tasks, to develop a percentage of bonuses depending on the achievement of results from the critical value to the control or upper threshold of the efficiency value.

Each company can develop the criteria itself. We propose 5 efficiency criteria:

- “Production volume” for the reporting period of the Company;
- “Unit production costs” for the reporting period for the Company;
- “Free cash flow” for the reporting period for the Company;
- “Profit before taxes, interest and depreciation” for the reporting period for the Company;

- “Ensuring the required level of industrial safety, labor protection and the environment in the Company” for the year/quarter/month for the Company.

In the sixth section, you can determine the percentage of bonus payments for efficiency, taking into account the specific weight of each indicator. The indicators should be divided into month, quarter, and year. The percentage of efficiency for each indicator is determined by multiplying by the specific weight of this indicator (Table 2).

Table 2. Determination of % bonus payments for efficiency, taking into account the weight of indicators

№	Efficiency factor	Weight depending on the frequency of payment		
		Month	Quarter	Year
1	Production volume	40%	40%	40%
2	Earnings before taxes, interest and depreciation	10%	20%	20%
3	Free cash flow	10%	20%	20%
4	Specific production costs	10%	10%	10%
5	Ensuring the required level of industrial safety, labor protection and the environment	30%	10%	10%
Note - source (Kiselev V.D., Nakipova M.B., 2019)				

The seventh section provides for the determination of the percentage of payments for each indicator (taking into account the weight) of the total percentage of bonus payments.

$$\text{Total \%BP} = \sum \text{\%BP per indicator, taking into account weight} \quad (3)$$

The eighth section determines the actual percentage of bonus payments. At the same time, it is proposed to take into account the fulfillment of an additional bonus condition: the employee's compliance with labor discipline, the absence of disciplinary penalties and the proper performance of functional duties – if it is not fulfilled, the management decides to reduce the amount of the bonus or its non-payment.

$$\text{Fact \% BP} = \text{Total \%BP} * \text{BP Rate} \quad (4)$$

In the ninth section, the amounts of the actual payments of BP are determined, which are calculated according to the following formula:

$$\text{The amount of BP} = \text{Actual \% BP} * \text{Base for BP} \quad (5)$$

For employees in the composition of the base, which takes charge of the BP is proposed to consist of payments made during the reporting period on the results of activities:

- the payment of the basic wage (pay by salary) for actual time worked during the reporting period, including work on weekends and holidays and overtime;
- established allowances and surcharges for performance, combining professions and positions, expanding the service area and increasing the volume of work performed, for working at night.

The use of this method would increase the interest of personnel in the final result of the company's activities.

The next item suggests an assessment of the level of safety, labor protection and the environment for the year. The work on occupational safety at the enterprise should be based on the identification of existing risks and their management. At the same time, risk assessment is the cornerstone of occupational safety planning. Effective occupational health and safety management is possible only if the current state of occupational health and safety is known and problem areas are identified.

The purpose of occupational safety is to improve occupational safety and systematic improvement of working conditions. The preventive systems necessary to ensure the protection of workers from industrial

accidents and injuries depend to a large extent on effective systems and methods of occupational health and industrial safety management (Edmund Nana Kwame Nkrumah et al., 2021).

The assessment of the level of industrial safety, labor protection and the environment for the year is calculated according to the formula:

$$Y=100\Sigma^{7}_{i=1}=g_i \quad (6)$$

where Y is the number of points corresponding to different levels of industrial safety, labor protection and the environment; g_i is the number of penalty points determined in accordance with the Table 3:

Table 3. The criterion of compliance with the required level of industrial safety, labor protection and the environment

№	Name of a particular indicator	The criterion of compliance with the required level of industrial safety, labor protection and the environment	Penalty points for failure to meet the requirements of the criterion { gi }
1	The presence/number of fatal accidents caused by the employer	Absence of fatal accidents caused by the employer during the estimated period	100^2
2	Implementation of activities/tasks planned for the estimated period: - to eliminate violations identified by the results of comprehensive inspections of state bodies (authorized non-governmental organizations with the necessary competence), commissions, as well as contained in the materials of investigations of accidents and accidents; - industrial and environmental safety programs.	Implementation of all activities planned for the estimated period	20
3	Compliance of industrial safety, labor protection and environmental management systems with the requirements of regulatory legal acts (international standards)	Absence of significant inconsistencies in the functioning of the industrial safety, labor protection and environmental management system in the audit reports (audit reports) during the assessed period to the requirements of regulatory legal acts (international standards)	10
4	The specific index of injuries of the company's personnel	The value of the specific injury rate of the company's personnel should not exceed the established planned value	50
5	Specific indicator of emissions of pollutants into the atmosphere	This particular indicator should not exceed the established target value	5
6	Specific indicator of discharge of polluted wastewater into surface reservoirs	This particular indicator should not be less than the established target value	10
7	The ratio of waste disposed of during the year to newly generated waste over the same time period	This particular indicator should not be less than the established target value	5

Note - source (Kiselev V.D., Nakipova M.B., 2019)

If there is one fatal accident during the year, the organization receives an assessment: “The required level of industrial safety, labor protection and the environment is not provided”, regardless of the values of other indicators. Number of penalty points – 100. This provision does not apply to the death of employees in an accident that occurred through no fault of the employees. If the Company does not have a certificate of compliance with the requirements of international standards, penalty points are not awarded. If there is no discharge of water into surface reservoirs, penalty points are not awarded.

Based on the specifics of the oil and gas sector, it is proposed to indicate the general and professional competencies of the departments and their employees, according to which labor assessment can be carried out. Professional competencies can be conditionally divided into 3 blocks: 1) production, ensuring uninterrupted production (oil production); 2) maintenance, ensuring the uninterrupted operation of production equipment, reducing and preventing possible technological failures, minimizing them; 3) ensuring comfortable operation of the internal environment of the company (production and maintenance units), as well as high-quality and constructive interaction with the external environment of the company.

When awarding bonuses to employees of the Company, it is necessary to include work on weekends and holidays and overtime, as well as allowances and surcharges for performance, combining professions and positions, expanding the service area and increasing the volume of work performed, for working at night.

Also important in the formation of personnel policy are automation and the use of IT technologies, as well as the formation of a personnel reserve. The provision proposed above needs to be automated, modern IT technologies should be used to register the contribution of each employee, according to the results of which the amount of bonuses of each employee is determined. Based on the data obtained, the activity of each employee is evaluated (Lambekova A.N. et al., 2022). In case of unsatisfactory work, there is a need to form a high-quality personnel reserve that increases the efficiency of the company and its production capacity. With the help of the system, human resource management specialists identify the strengths and weaknesses of employees, determine the most qualified employees, and develop an individual development plan for each promising specialist based on the data obtained.

Conclusions

In conclusion, it should be noted that when introducing innovations, it is important to clearly understand the range of methods adequate to the problem situation and the likely difficulties (risks) that those who will be engaged in their implementation in the organization will have to work with. Authoritarian, democratic or liberal-indulgent styles of overcoming organizational resistance depend on the degree of elaboration and consistency of the proposed changes (there is or is not a clear conceptual model of changes and their expected results), on the time (required for successful implementation and acceptable according to the plan), on the risks (acceptable and critical). In the conditions of industry market relations, which are not always stable and predetermined, it is a difficult task to propose a balanced and unified system of indicators of the effectiveness of innovation implementation. The management of any company should determine it independently, based on the specifics of its company's activities.

One of the most important tasks of the economy of oil and gas enterprises is to achieve maximum efficiency in the use of human resources. Achieving this goal is the main task of developing the personnel policy of the organization. The system of motivation and stimulation of employees of a certain organization implies the existence of a whole set of conditions aimed at attracting and maintaining employees, encouraging them to perform certain actions, and increasing their productivity (Andreas Exarheas, 2018).

In a competitive environment, the updated motivation system for employees of JSC Oil Company “KOR” will become an important factor that will ensure the sustainable development of the company.

The proposed mechanism of decision-making for motivation can be documented and successfully applied in the practice of large oil and gas companies.

References:

Andreas Exarheas. Which Soft Skills Are Most Important for Oil, Gas Professionals? [Electronic resource] / Exarheas Andreas. Access mode: *Rigzone.com.* 2018. – Retrieved from https://www.rigzone.com/news/which_soft_skills_are_most_important_for_oil_gas_professionals-31-jul-2018-156462-article/

Edmund Nana Kwame Nkrumah. Improving the Safety–Performance Nexus: A Study on the Moderating and Mediating Influence of Work Motivation in the Causal Link between Occupational Health and Safety Management (OHSM) Practices and Work Performance in the Oil and Gas Sector / Edmund Nana Kwame Nkrumah, Suxia Liu, Linda Akoto, David Doe Fiergbo // International Journal of Environmental Research and Public Health 18(10) May 2021, DOI:10.3390/ijerph18105064

Karrie Lucero. Employee Incentives: 3 Best Practices to Drive the Right Behaviors. 2021. Access mode. Retrieved from: https://www.xactlycorp.com/blog/employee-incentives-drive-behavior

Karrie Lucero. Employee Incentives: 3 Best Practices to Drive the Right Behaviors. [Electronic resource] / Lucero Karrie. — 2021. — Access mode. Retrieved from: https://www.xactlycorp.com/blog/employee-incentives-drive-behavior

Larisa, A. I. Strategy and mechanisms of motivation and compensation in the organizations of oil and gas industry. Procedia Economics and Finance. – 2013. – 5, 346–354.

Nkrumah, E. N. K., Liu, S., Doe Fiergbor, D., Akoto, L. S. Improving the Safety-Performance Nexus: A Study on the Moderating and Mediating Influence of Work Motivation in the Causal Link between Occupational Health and Safety Management (OHSM) Practices and Work Performance in the Oil and Gas Sector. / E. N. K. Nkrumah, S. Liu, D. Doe Fiergbor, L. S. Akoto, // Collection Contemporary and Emerging Issues of Occupational Safety and Health). 2021.

Бичеев, М. А. Мотивация и стимулирование трудовой деятельности [Текст]: курс лекций М. А. Бичеев. — Новосибирск: СИУ РАНХиГС, 2015.

Виханский, О. С. Стратегическое управление [Текст] / О. С. Виханский. — 2-е изд. (пересм. и доп.). — М.: Gardarika, 1998.

Кабакова, Г. Е. Мұнай-газ өндіруші кәсіпорындар қызметіндегі кадрлық саясатты жетілдіру мәселелері [Мәтін]: Г. Е. Кабакова, Л. А. Казбекова // Экономиканы дамытудың және құқықты жетілдірудің постпандемиялық модельдері: мүмкіндіктер мен тәуекелдер: Халықаралық ғылыми-тәжірибелік конференция (3 желтоқсан 2020 ж.). — Қызылорда.

Киселев, В. Д. Мотивация новаторской деятельности специалистов и функциональных руководителей при внедрении технологического нововведения [Текст]: / В. Д. Киселев, М. Б. Накипова // Вестн. Моск. междунар. шк. бизнеса MIRBIS. — 2019. — № 4 (20). — С. 126–142.

Корнеева, З. А. Разработка адаптивной кадровой политики предприятия / З. А. Корнеева. — 2017. // eLIBRARY ID: 28858707.

Ламбекова, А. Н. Цифрлық технологияларды дамыту контекстіндегі саясатының өзгеру үрдістері [Мәтін]: / А. Н. Ламбекова, С. С. Шакеев, А. А. Невматулина, Р. А. Абрамов // Қарағанды университетінің хабаршысы. — 2022. — № 1 (105). — Б. 238-247. https://doi.org/10.31489/2022Ec1/238-247.

Основы кадровой политики. Трудовой Кодекс Республики Казахстан (с изм. и доп. на 01.01.2020 г.) / Е. Б. Исакулов. — Астана, — 2010. — 264 с.

Рахметов, Б. А. Персоналды басқару [Мәтін]: оқу құралы / Б. А. Рахметов. — Алматы: «Экономика» баспасы. — 2005.

Симарова, И. С. Формирование системы корпоративного обучения: опыт нефтгазовых компаний [Текст] / И. С. Симарова, С. В. Алексеева, Ю. В. Алексеевичева, Л. Н. Руднева // Вестн. Уфим. нефт. техн. ун-та. Наука, образование и экономика. Сер. Экономика. — 2018. — № 2 (24).

Трудовой Кодекс Республики Казахстан (с изм. и доп. от 01.01.2020 г.).

Филин, С. А. Управление человеческими ресурсами. Курс лекций для руководителей и профессионалов в управлении персоналом [Текст] / С. А. Филин, Т. В. Филина. — 2-е изд. (пересм. и доп.). — Алматы. — 2012.

Хаирова, Д. Р. Совершенствование системы управления кадровым потенциалом v в условиях инновационного развития нефтегазовой отрасли Республики Узбекистан [Текст] / Д.Р. Хаирова // Бюллетень науки и практики. — 2021. — № 7. — 2. — С. 254–257. https://doi.org/10.33619/2414-2948/63/25.

Шафраник, Ю. К. Нефтегазовый сектор: необходимость смены парадигмы (от 10.10.2011) [Текст] / Ю. К. Шафраник. — 2011. Access mode. Retrieved from http://rreconomic.ru › journal › article.

Г.Е. Кабакова, Л.А. Казбекова, М.Б. Накипова

Мұнай-газ саласындағы персоналды ынталандыру жүйесін жетілдіру

Аңдатпа

Мақсаты: Объективті себептерге байланысты қолданыстағы мұнай-газ саласындағы ынталандыру жүйесі өзекті емес және нарықтық шаруашылық жүргізудің қазіргі қазақстандық жағдайларына сәйкес келмейді. Мәселе мынада, қазіргі уақытта цифрландыру және инновациялық даму жағдайында біздің елімізде өзгерістер болып жатыр, оларды біз өзіміздің даму саясатымызды осы болмысқа қабылдауға және бейімдеуге тиіспіз. Мақаланың мақсаты — мұнай-газ өндіретін кәсіпорындарда персоналды ынталандырудың қолданыстағы жүйелерін жетілдірудің жаңа әдістерін зерттеу.

Әдісі: Өңірдің мұнай-газ өндіруші компанияларында бар өзекті кадрлық проблемалар мен компания қызметкерлерінің қызметін регламенттейтін құжаттар қаралды және талданды, мұнай-газ өндіруші компаниялардың қызметінде жұмыскерлерді ынталандыру жүйесін және сыйақы туралы ережені жетілдіру бойынша практикалық ұсынымдар мен әдістер берілді.

Қорытынды: Жылдық, тоқсандық және ай сайынғы сыйақы төлемдерін есептеуді қолданудың маңыздылығы, сыйақы төлемдерін төлеу шарттары, қызметкердің пайдалы қызмет коэффициентінің өлшемдері, әрбір қызметкерге сыйақы төлемдерін төлеудің қосымша шарттары, сондай-ақ сыйақы төлемдерін төлеу кезеңділігі атап өтілді.

Тұжырымдама: Компаниялар персоналды басқаруда ашықтықты қамтамасыз етуі, ынталандыру және басқару әдістерін үнемі жетілдіріп отыруы, қолайлы еңбек жағдайларын қамтамасыз ету, компания кірісінің бір бөлігін біліктілікті арттыруға, қайта оқытуға, жаңа дағдыларды алуға, қызметкерлердің жеке және кәсіби әлеуетін іске асыру үшін пайдалануы керек.

Кілт сөздер: ынталандыру жүйесі, трансформация, кадр саясаты, кадр әлеуеті, цифрландыру, персонал, құзыреттер, мұнай-газ саласы.

Г.Е. Кабакова, Л.А. Казбекова, М.Б. Накипова

Совершенствование системы стимулирования персонала в нефтегазовой отрасли

Аннотация:

Цель: В силу объективных причин существовавшая система стимулирования в нефтегазовой отрасли оказалась неактуальной и не соответствующей современным казахстанским условиям рыночного хозяйствования. Проблема состоит в том, что в настоящее время в условиях цифровизации и инновационного развития в нашей стране происходят изменения, в которых мы должны принять и адаптировать свою политику развития к этим реалиям. Целью данной статьи является изучение новых методов совершенствования существующих систем стимулирования персонала на нефтегазодобывающих предприятиях.

Методы: Были рассмотрены и проанализированы существующие в нефтегазодобывающих компаниях региона актуальные кадровые проблемы и документы, регламентирующие деятельность сотрудников компании и даны практические рекомендации и методы по совершенствованию системы стимулирования и положения о вознаграждении работников в деятельности нефтегазодобывающих компаний.

Результаты: Отмечена важность применения расчета годовых, квартальных и ежемесячных премиальных выплат, условия выплаты премиальных выплат, критерий коэффициента полезного действия работника, дополнительные условия выплаты премиальных выплат каждому работнику, а также периодичность выплаты премиальных выплат.

Выводы: Компании должны обеспечивать прозрачность и открытость в управлении персоналом, постоянно совершенствовать методы стимулирования и управления, обеспечивать благоприятные условия труда, использовать часть прибыли компаний для повышения квалификации, переобучения, получение новых навыков, реализации личного и профессионального потенциала работниками.

Ключевые слова: система стимулирования, трансформация, кадровая политика, кадровый потенциал, цифровизация, персонал, компетенции, нефтегазовая отрасль.

References:

Andreas Exarheas (2018). Which Soft Skills Are Most Important for Oil, Gas Professionals? *Rigzone.com.* Retrieved from https://www.rigzone.com/news/which_soft_skills_are_most_important_for_oil_gas_professionals-31-jul-2018-156462-article/

Bicheev M. A. (2015). Motivatsiia i stimulirovanie trudovoi deiatelnosti: kurs lektsii. Novosibirsk. Siberian Institute of Management RANHISS [in Russian].

Edmund Nana Kwame Nkrumah, Suxia Liu, Linda Akoto & David Doe Fiergbo (2021). Improving the Safety–Performance Nexus: A Study on the Moderating and Mediating Influence of Work Motivation in the Causal Link between Occupational Health and Safety Management (OHSM) Practices and Work Performance in the Oil and Gas Sector. *International Journal of Environmental Research and Public Health 18(10),* DOI:10.3390/ijerph18105064.

Filin, S. A., & Filina, T. V. (2012). Upravlenie chelovecheskimi resursami. Kurs lektsii dlia rukovoditelei i professionalov v upravlenii personalom [Human Resource Management. Lecture course for managers and professionals in human resource management]. 2nd ed. (revised and supplemented). Almaty [in Russian].

Hairova, D. R. (2021). Sovershenstvovanie sistemy upravleniia kadrovym potentsialom v usloviiakh innovatsionnogo razvitiia neftegazovoi otrasli Respubliki Uzbekistan [Improving the system of human resource management in the context of innovative development of the oil and gas industry of the Republic of Uzbekistan]. *Biulleten nauki i praktiki [Bulletin of Science and Practice], 7, 2,* 254–257. https://doi.org/10.33619/2414-2948/63/25 [in Russian].

Isakulov, E. B. (2010). Osnovy kadrovoi politiki. Trudovoi Kodeks Respubliki Kazahstan (s izmeneniiami i dopolneniiami po sostoianiiu na 01.01.2020 g.). Astana [in Russian].

Kabakova, G. E., & Kazbekova, L. A. (2020). Munai-gaz ondirushi kasiporyndar qyzmetindegi kadrlyq saiasatty jetıldıru maseleleri. Ekonomikany damytudyñ jäne qūqyqty jetıldırudiñ postpandemialyq modelderı: mümkındıkter men täuekelder [Personnel policy issues in the field of personnel development of the oil and gas companies. Post-pandemic models of the development of economics and law: possibilities and risks]. *Khalyqaralyq ğylymi-täjıribelık konferensia (3 jeltoqsan 2020 jyl) [International Scientific and Practical Conference]*. Kyzylorda [in Kazakh].

Karrie Lucero (2021). Employee Incentives: 3 Best Practices to Drive the Right Behaviors. https://www.xactlycorp.com/blog/employee-incentives-drive-behavior

Kiselev, V. D. & Nakipova, M. B. (2019). Motivatsiia novatorskoi deiatelnosti spetsialistov i funktsionalnykh rukovoditelei pri vnedrenii tekhnologicheskogo novovvedeniia [Motivation of innovative activities of specialists and functional managers in the implementation of technological innovation]. *Vestnik Moskovskoi mezhdunarodnoi*

vysshei shkoly biznesa MIRBIS [Bulletin of the Moscow International Higher School of Business], 4 (20), 126–142 [in Russian].

Korneyeva, Z. A. (2017). Razrabotka adaptivnoi kadrovoi politiki predpriiatiia [Development of an adaptive personnel policy of the enterprise]. eLIBRARY ID: 28858707 [in Russian].

Lambekova, A. N., Şhakeev, S. S., Nevmatulina, K. A. & Abramov, R. A. (2022). Tsifrlyq tekhnologialardy damytu konteksındegı kadr saiasatynyñ özgeru ürdısterı [Changing processes in the personnel policy in the context of digital technologies development]. *Qaragandy universitetinin khabarshysy [Bulletin of the Karaganda State University], 1(105), 238-247* https://doi.org/10.31489/2022Ec1/238-247 [in Kazakh].

Larisa, A. I. (2013). Strategy and mechanisms of motivation and compensation in the organizations of oil and gas industry. Procedia Economics and Finance, 5, 346–354.

Nkrumah, E. N. K., Liu, S., Doe Fiergbor, D. & Akoto, L. S. (2021). Improving the Safety-Performance Nexus: A Study on the Moderating and Mediating Influence of Work Motivation in the Causal Link between Occupational Health and Safety Management (OHSM) Practices and Work Performance in the Oil and Gas Sector. Collection Contemporary and Emerging Issues of Occupational Safety and Health).

Rakhmetov, B. A. (2005). Personaldy basqaru [Personal management]. Almaty: Ekonomika [in Kazakh].

Shafranik, Yu. K. (2011). Neftegazovyi sektor: neobkhodimost smeny paradigmy (ot 10.10.2011) [The oil and gas sector: the need for a paradigm shift]. Retrieved from http://rreconomic.ru › journal › article [in Russian].

Simarova, I. S., Alekseeva, S. V., Alekseevicheva, Yu. V., & Rudneva, L. N. (2018). Formirovanie sistemy korporativnogo obucheniia: opyt neftegazovykh kompanii [Formation of the corporate training system: Experience of oil and gas companies]. *Vestnik Ufimskogo gosudarstvennogo neftianova tekhnicheskogo universiteta. Nauka, obrazovanie, ekonomika. Seriia ekonomika [Bulletin of the Ufa State Petroleum Technological University. Science, Education, Economy. Economy Series]*, 2 (24) [in Russian].

Trudovoi Kodeks Respubliki Kazakhstan (s izmeneniiami i dopolneniiami po sostoianiiu na 01.01.2020 g.) [Labor Code of the Republic of Kazakhstan (with amendments and additions as of January 1, 2020)] [in Russian].

Vihansky, O. S. (1998). Strategicheskoe upravlenie [Strategis management]. 2nd ed. (revised and supplemented). Moskow: Gardarika [in Russian].

DOI DOI 10.31489/2022Ec4/44- 54
UDC 338.054.23
JEL O14

D.E. Kanashayev[1*], A.Y. Yesbolova[1], R.K. Andarova[2], G.A. Zhadigerova[3], Mustafa Nursoy[4]

[1]M. Auezov South Kazakhstan University, Shymkent, Kazakhstan;
[2]Karaganda University of the name of academician E.A. Buketov, Kazakhstan;
[3]Central Asian Innovation University, Kazakhstan;
[4]Mugla University, Turkey
[1]kanashayev@gmail.com, [2]yesbolova@gmail.com, [3]ark_roza@mail.ru,
[4]gulshat_zhadigerova@mail.ru, [5]mnursoy@yahoo.com

[1]https://orcid.org/0000-0002-4333-9317,[2]https://orcid.org/0000-0001-9503-9482, , [3]https://orcid.org/0000-0003-4847-6422, [4]https://orcid.org/0000-0001-8529-8659, [5]https://orcid.org/0000-0002-7257-464X

[1]Scopus Author ID: 57189689439

Digitalization assessment features in the carpet industry of Kazakhstan

Abstract:

Object: Analysis of the digitalization assessment methods which can be used to evaluate the carpet industry of Kazakhstan. In turn such analysis requires to consider the modern trends in digitalization and global digitalization.

Methods: Authors examine the social and economic aspects of the digital transformation of the carpet industry in Kazakhstan, associated primarily with the preparation, development and effective use of innovative human capital as a key factor to improve financial strength of an enterprise.

Findings: Carpet industry has unique characteristics compared to other industries, mainly due to the quick changes in trends in the taste of the consumers and fast return of the investments. Digitalization of the carpet industry needs to be complex and cover all aspects in business cycle.

Conclusions: Nowadays, digital transformation is becoming a crucial tool for improving the quality and financial return of the carpet production. Current methods of evaluating the digitalization became ineffective, as it covers only technical aspects. Thus, digitalization needs to cover all aspects in the business cycle. In turn, such a complex method, allows to improve financial performance and labor productivity of a carpet producing enterprise.

Keywords: digitalization, digital transformation, carpet industry, customization, industry 4.0, production robotization, digital platform, labor productivity, economic efficiency.

Introduction

Carpet industry has some unique differences than other industries on fashion, consumer demands assortment issues. Modern carpet manufacturing aims to reduce production time. Hence in a modern world quickness in technologies means almost everything. Another characteristic feature of carpet production is the widespread use of the customization. Customization is the process of organizing production by combining advantages of mechanized and automated carpet production with the flexibility and mobility of the old production methods. Customization involves individualizing products based on specific customer orders through the implementation of constructive changes (Gosudarstvennye standarty, 2001).

Currently, digitalization is a strategic priority of economic development in many countries. According to forecast of leading world experts, a quarter of the global economy will become digital by 2022.Implementation of technologies for digitalization of the economy, which will allow effective interaction between the state, business and society is becoming an increasingly large-scale and dynamic direction (Istomina, 2018).

Hypothesis

Digitalization is based on the massive introduction of information systems and technologies in order to increase the efficiency of all types of activities, improve working conditions and the quality of life of the population. Informatization covers information processes of various types in the social, economic, scientific and technical field. When introduced into the enterprise, digital technologies provide a number of advantages, among which it is possible to increase the flexibility of production by proactively changing the characteristics of the production process and ensuring information integration of stages of the life cycle of the manufactured products. Digital transformation provides a qualitative improvement in the business pro-

*Responsible author: E-mail address: *yesbolova@gmail.com*

cesses of the enterprise by introducing innovations and adapting business models to the conditions of the modern digital economy.

Literature Review

The role of digitalization has increased extremely during the last years and now is considered to be among strategic goals of every enterprise in almost all spheres of domestic manufacturing sector.

Zhou J. has investigated the digitalization in manufacturing sector of China and has found some interesting findings. Author highlights the importance of promotion of engineering and commercialization in China`s manufacturing sector. Moreover, author identifies the main goal of implementing innovation by means of digitalization of the production process, which is to raise productivity of an enterprise (Zhou J., 2013).

In addition, during the implementation of the digitalization and intelligentalization in the manufacturing process, one should identify the importance of the innovation spurring development. Each country needs to identify its global position in its sector, in order to better understand its further development. As a result, enterprises need to highly cooperate with other enterprises in the industry, as well as with research institutions.

According to the research of Kotarba, another measurement of evaluation of digitalization KPI is the advanced data collection and processing of actions. In this regard, digitalization needs to be strongly linked with the management of data and thorough analysis of all parameters (Kotarba, 2017).

According to other researchers, shares in the market of some traditional textile enterprises are likely of acquisition by players from other industries. Globalization in the clothing sector is pushing up this process. Furthermore, some production mechanisms as 3D printing make it easy to customers to print textile goods at home or in various printing locations. Thus, brand of the goods in textile sector will lose its importance and customer preferences in the upcoming years. Trend is moving in opposite direction towards recognition of brands in the market and meeting the individual needs of customers (Ali et all, 2019).

Obviously, importance of measurement of digitalization will expand in the future. Meaning that enterprises will try to access the outcomes of digitalization. Since economic efficiency is the main goal of every enterprise, timing and payback is important.

Although there are few authors in Kazakhstan which have investigated the domestic carpet industry, there are no similar researches conducted on the digitalization of the carpet industry. Hence it is a new field which requires a deep analysis. In turn, previous authors who analyzed the domestic carpet sector highlights the importance of the competitiveness in this field. Obviously, competitiveness is highly correlated with the digitalization of the carpet industry. Thus, findings of those authors were also taken into consideration. In turn, Kazakhstani researchers have found out that in order to increase the level of competitiveness, it is necessary to approach this problem comprehensively, first of all developing a methodology for the development of the carpet industry both at the state level and at the level of individual enterprises. Therefore, it is necessary to solve the existing problems in the carpet industry (Durru et al, 2019).

Obviously, it is necessary to develop a strategy capable of forming a single mechanism of sustainable digitalization for the long term, based on agreed interrelated actions of the state, regions and enterprises, taking into account market relationships. Improvement of the organizational and economic mechanism, the solution of social problems, especially the improvement of the welfare of the population, the search for ways out of the crisis, inevitably entail an increase in the digitalization of carpet products of the Republic of Kazakhstan both in the domestic and foreign markets.

Methods

Assessment of the digitalization in the domestic carpet industry requires set of methods which enables to deeply analyze this sector. For this reason, this research provides complex methods of digitalization assessment of carpet industry of Kazakhstan. In turn complex methods mainly include: method eco-system management and analysis of comparative indicators during the assessment of economic efficiency of digitalization.

In turn, analysis of comparative indicators of economic efficiency includes several transformations depending on the desired outcome. There is an option to identify changes in the cost of product as a result of digitalization, which in turn can be transformed to calculate specific costs features. Authors have provided several formulas which allow to calculate economic efficiency in various cases including: in case if digitalization may result in rise in price of a good or if it affects other sectors of economy, which may require an analysis even at macroeconomic level.

Results

Advantages of digitalization in the carpet industry are following:

– digitalization of the industry allows to significantly save production costs (production data is stored digitally and does not require additional costs);

– decrease the number of workforces by means of digitalization;

– ability to initiate the amendments at any stage of the CAD file;

– quick adaptation to new market conditions, depending on demand the batch size can be easily changed at any moment;

– customization of the production line,by applying three-dimensional technologies, collections that are slightly different from each other can be printed. In turn, it creates personalized production lines of goods;

– absence of the usual restrictions.

According to the Table 2 below, production digitalization features is described, which also can be applied to the carpet industry.

The revival of the domestic carpet industry has an economic, social impact to Kazakhstan. Carpet production improves employment in the country, as it creates new workplaces. It also encourages the development of other light industry sectors (production of cotton and wool), which helps to restore regions affected by social stress.

Discussions

Digitalization of the economy across the countries varies depending on the level of their development and to the economic policies. This is mainly related with the economic development of countries. Developed countries are far behind those developing countries. Some developing countries currently can be on such stage of digitalization, which some western countries have passed in the previous century. However, overall global industrial digitalization in economic development can be divided into certain stages, specific features (Table 1).

Table 1. Evolution of Global Production Digitalization

<table>
<tr><td>1990-2000</td><td colspan="2">2005</td><td>2010</td><td>2015</td><td>2020</td><td>2030</td></tr>
<tr><td colspan="3">Foundation</td><td>Development</td><td>Advance</td><td>Turnover</td><td>Systematic digital transformation</td></tr>
<tr><td>Development of e-business</td><td colspan="2">Development of e-market</td><td>Growth of new digital products and e- services</td><td>Massive digitalization in traditional business</td><td>Transformation of business processes and business models</td><td>Systematical transformation</td></tr>
<tr><td>“Web 1.0”</td><td colspan="3">“Web 2.0”</td><td colspan="2">“Web 3.0”</td><td>“Web 4.0”</td></tr>
<tr><td colspan="4">since 1960s-Industry 3.0 (Third Industrial Revolution)</td><td colspan="3">since 2011-Industry 4.0 (Fourth Industrial Revolution)</td></tr>
<tr><td colspan="4">Emergence of the digital economy concept</td><td colspan="3">Broad understanding of the concept of digital economy</td></tr>
<tr><td colspan="7">Note - compiled by the authors</td></tr>
</table>

According to Table 1, starting from 2017, which is believed to be in the stage of digital economy maturity, the concept of “Industry 4.0” has been deeply embedded in the development of the national economies worldwide. According to preliminary forecasts, direct impact of digitalization on economy of Kazakhstan will amount to 1.7-2.2 trillion tenges by 2025. Therefore, total volume of investments, including private investments, will provide a significant return on investment till 2025, by 4.8-6.4 times larger than the initial amount.

Domestic carpet industry in Kazakhstan was also influenced by the digitalization boom. Overall, the domestic carpet market of Kazakhstan can be classified as an oligopoly market based on its parameters. This is due to the fact that carpet industry in Kazakhstan consists of several leading enterprises.

In these conditions, the most challenging aim for all carpet industry enterprises is to ensure the intensification of production and cost reduction of customized industrial products. Therefore, main solution is to switch to the Digital Factory model.

According to the concept of fourth industrial revolution “Industry 4.0”, digitalization is becoming a crucial factor in the development of the carpet industry. This can be observed by the fact that the quality of carpets increasing, new ways to win in tough competition are emerging.

The fourth industrial revolution “Industry 4.0” also plays a crucial role in the digitalization of the national economy. Nowadays, the concept of fourth Industrial Revolution, known as “Industry 4.0” is the most important global economic trend in the world. For this reason, President of Kazakhstan, Mr. K. Tokayev focused special attention to the development of digitalization in Kazakhstan. “Industry 4.0” aims to use advanced info communication technologies for a significant transformation of industrial sectors. These technologies include predictive tracking and real-time decision-making. Autonomous robot systems and internet access of industrial objects use complex technologies in order to analyze large data sets. Based on these technologies, main attributes of the new generation industry will be rapid adaptability, flexibility of production, and a focus on the production of personalized (customized) products. Ultimately, all these factors create new opportunities to increase the efficiency and profitability of production as a whole.

In 2017, the concept of “Industry 4.0” was firmly embedded in the daily life of Kazakhstani officials, economists and entrepreneurs. Former president of Kazakhstan, Mr. Nursultan Nazarbayev has also prioritized technological modernization of the economy, focusing on digitalization and the creation of new industries. As a result, Ministry of investment and development of the Republic of Kazakhstan immediately initiated the implementation of Industry 4.0 concept in Kazakhstan.

According to the current President of Kazakhstan, K. Zh.Tokayev: “… one of the main factors of competitiveness in modern times is digitalization of the national economy. Therefore, implementation of modern digital technologies is a strategic goal for the Government of Kazakhstan. Meanwhile, in order to achieve this goal, another important step is to develop and strengthen the domestic IT sector. Kazakhstan needs young, educated and motivated specialists in IT sector. National digitalization project needs to have a goal to train at least 100 thousand highly qualified IT specialists. In turn, export of goods and services with digital technologies should reach at least 500 million USD by 2025” (Akorda, 2021).

Currently, digitalization in Kazakhstan is moving slowly than expected. Government of Kazakhstan tries to develop digitalization by boosting the governmental programs, which are mostly aimed at industrial digitalization. However, such efforts result in ineffective outcomes and digitalization level of the economy is still low. This in turn, affects the labor productivity in the economy, which still has a weak performance.

This study is aimed to conduct a deep analysis of the digitalization phenomena and discusses main features of digitalization of the domestic carpet industry of Kazakhstan. In this regard, authors use several methods and conducts analysis of the evaluation methods of digitalization, which is aimed to improve financial stability and labor productivity of an enterprise. Thus, any action linked with digitalization needs to have a positive economic impact on an enterprise or the industry as a whole.

The carpet industry has a certain feature regarding the economic forecasting and economic and mathematical modeling, which should be taken into account while developing a system of models of relationships between indicators of industrial development. This feature requires that the described general principles of modeling to be supplemented in such a way that corresponding features are taken into account as much as possible (Marketing.rbc., 2021).

Table 2. Features of enterprise-level digitalization in the carpet sector

<table>
<tr><td>Firm</td><td>ERP,
PLM</td><td>NX Digital processing</td><td>Teamcenter
Interaction platform</td><td>Tecnomatix
Digital production</td><td>SIMATIC IT
Manufacturing</td></tr>
<tr><td>Production</td><td>MES/
MOM</td><td rowspan="4">SIMATIC NET</td><td>SIMATIC IT
Planning</td><td>SIMATIC IT
Production control</td><td>SIMATIC IT
Analytics</td></tr>
<tr><td>Employee</td><td>PCS 7,
SCADA</td><td colspan="3">SIMATIC Win CC
SCADA systems</td></tr>
<tr><td>Equipment</td><td></td><td>SIMATIC
observers</td><td>SIMATIC
Operator panel</td><td>SINUMERIC
Emergency management systems</td></tr>
<tr><td>Operation</td><td></td><td>SIRIUS
indicators</td><td>SIMATIC IDENT
Industrial Identification</td><td>SIMATIC
In/Out systems</td></tr>
<tr><td colspan="6">Note - conducted by the authors on the basis of research data</td></tr>
</table>

One of the features of the carpet industry is the rapid return on investment. Technological features of the industry allow us to quickly change the product range at its lowest cost, ensuring high mobility of production.

Robotics and Big Data Systems in this sector will become the basis for innovative modernization of industrial enterprises. Accordingly, both terms allow to improve business environment in the country to a new level.

Table 2 describes the production digitalization processes of enterprises in the carpet sector. Application of digital technologies allows a carpet manufacturing company to ensure availability of data at all stages of the product life cycle, from development to maintenance. This allows the enterprise to improve quality of production decisions, assure “quick transformation” in terms of market entry. Also, digitalization increases flexibility, safety and operational efficiency and allows to create new business opportunities.

Nowadays, importance of internet on selling products and services increases the need for such a digital “transition period”. The German government's “Industry 4.0” initiative has also emerged as a response to the need for horizontal and vertical integration across all sectors, by ensuring efficient use of information and data and turning development into a continuous process across the entire value chain. It is necessary to clearly understand that every progressive industrial enterprise should actively use digital technologies (Alekseev, 2019).

Digitalization usually refers to the storage of data or information in the form of digital signals. They are represented as 1 or 0 logical signals (yes, no). In this sense, the term is mainly used in areas such as data storage. It describes the process of digitalizing other forms of representation. In the business context, “analytics” can be considered as further digitalization of information. Thus digitalization allows to make more effective management decisions.

Based on the idea that every carpet manufacturer conducts its economic activities for the purpose of generating income, it is obvious that investment will benefit both in monetary terms and in strategic terms by complex implementation of digitalization. Obviously, an investor makes the decision by accessing the economic impact on annual production or other economic parameters.

Therefore, the basic principle of decision making in implementation of digital ideas is the payback period of such an investment. Accordingly, calculation of the annual impact from implementation of digital technologies can be calculated as sum of investment effects, in terms of macroeconomics which can be observed by the growth of national income and gross domestic product.

Calculation of economic efficiency is based on bringing costs to existing digital assets (Brousseau, 2007). Such costs are calculated using the formula:

$$RC = CPU + IDA \times PTS \quad (1)$$

where: RC – reduced costs;

CPU – cost per unit of product (services);

IDA – investing in a digital asset;

PTS – standard coefficient of efficiency of capital investments.

The recommended value for PTS is set by a measure of at least 0.15 units (for conditions in Kazakhstan), which is justified to some extent, by the fact that investments in digitalization needs to bring to the domestic industry additional benefits in the medium term.This is due to the fact that efficiency needs to be higher than the inflation rate in the country.

In turn, within the framework of the state programs aimed at development of domestic carpet industry, government needs to identify itself the minimum value of the efficiency factor.

Determination of the economic efficiency of digitalization, requires to ensure comparability of indicators. This is the second methodological principle of describing trends in the digital economy. Comparability of indicators needs to be based on the volume, quality, time spent on production, as well as environmental factors.

Implementation of digitalization brings transparency to the industry. An entrepreneur needs to pay attention on the total cost of such implementation in the carpet production. Total cost of digitalization of carpet production refers to the cost of purchasing, maintaining and disposing of such digital asset.

Economic impact of digitalization can have various types: digitalization of technological processes in carpet production, organizational methods of carpet production, digitalization of technologies. In turn, quality characteristics are productivity, durability, operating costs etc.

Economic effect (EE) of digitalization of technological processes, organizational methods of carpet production is calculated using the formula:

$$EE = (PUC - MUC) * Qi + \Delta Mon \times Qi, \quad (2)$$

where: Qi – volume of production using new digital technologies and methods of production organization;

PUC – reduction of per unit costs by digitalization;

MUC – reduced main unit cost.

According to the second formula, as well as by industry or other economic entities, it is possible to determine the change in the value of products (works, services) using digital technologies, digital assets by similar approach. This formula can also be used to consider changes and individual cost elements.

Digital technologies introduced into the industry affect several areas of consumption and production simultaneously, so calculation of the annual economic effect is calculated using the formula:

$$T_e = \sum^{n}_{i=1} E_i * Q_i, \quad (3)$$

where: E_i – annual economic result obtained from the production and use of new digital technologies used in the i-th sphere of consumption;

n – the number of consumption spheres;

Q_i – part of the production of new digital technologies used in the i-th sphere of consumption.

If new digital technologies lead to an increase in prices for goods (works, services), but at the same time increase the quality of the final product produced, then the calculation of annual economic efficiency is carried out according to the formula below:

$$T_e = (P_c - P_n * I) * Q_1, \quad (4)$$

where: P_C – the profit from the sale of new high-quality products using digital technologies. It is calculated as the difference between the profit from the sale of high-quality products and products produced without using digital technologies.

If the subject of carpet production needs to determine the social impact of the introduction of digital technologies in the form of a reduction in the number of personnel, then it is necessary to consider changes in the labor intensity of the unit of production.

As for labor resources, in the context of digitalization of the economy, the issue of labor productivity remains an important issue. Since many works in Kazakhstan and abroad are specifically devoted to the social nature of digitalization, then one can doubt the future of labor resources, as well as the future of digitalization. However, due to the fact that entrepreneurs aim to increase profit, then the implementation of digital technologies is expected to bring a positive impact.

The proposed methodology for evaluating investments in digitalization allows us to determine the economic effect. At the same time, business entities note that any investment in a digital asset is not only a direct financial loss and profit (their comparison indicates the profitability of digitalization), but also that digital injections create a synergetic effect (Biankina, 2017).

Financial expenditures of the industry into digital technologies allow us to implement several business processes that contribute to the growth of the company's competitiveness. Firstly, competitiveness of internal business processes expected to rise. Complex implementation of digital technologies allows us to ensure the connection of all organizational elements, reduce management costs and improve the quality of production and sales. For example, GPS system initially allowed transport companies to improve the quality of delivery in terms of control, delivery and speed. However, gradually companies have discovered new ways to use this on-board technology and data by directing transport. These innovations have made it possible to reduce fuel consumption, carbon dioxide emissions and increase the number of provided services.

Secondly, digital investment provides a “competitive effect”. The essence of changes in this direction is that the innovations used in more progressive companies are later copied by other companies that are behind the leaders.

Digital technologies are abundantly integrated into a wide range of economies and business activities and provide opportunities for rapid deployment (through modernization of systems or infrastructure) (Kosareva, 2019).

Electronic digital platforms allow to maximize digital investment and business entities to fill the supply chain with consumers and suppliers, digitalize the business and business models of their environment, as well as transform logistics and transport networks (Nasrat et all, 2017).

Based on the aforementioned methods of assessing digitalization in carpet production, it can be seen that the main factor for business entities is the financial result. An entrepreneur is not interested in indicators that characterize the degree of readiness for digitalization or the level of coverage of his industrial production network. Digitalization of the economy will not lead to a change in the initial foundations of business. Based on this, the main criterion for the effectiveness of digitalization of the industry for an economic entity remains profitability and economic efficiency (Petrovic et all, 2019).

In addition to indicators, criteria for evaluating the effectiveness of the digitalization of a particular carpet-producing enterprise, it is necessary to identify the main indicators to assess the level of digitalization in the industry.

According to the readiness of the carpet industry and their current share in this direction (investments, developments), it is also necessary to take into account the side effects of investments in digital assets, as they are often much larger than the investments. Disadvantages of international indices for the development of the digital economy can be attributed to the fact that they do not take into account the specifics of each item, there is only one type of adjustment of the indicators of countries to the calculated requirements of international indices (Tsifrovoi Kazahstan, 2021).

Currently, there is a difficult situation in which sales market is decreasing, in turn pressure on imported products is increasing. As a result, enterprises depend both on the prices of competitors and on the prices of imported similar products. Introduction of digital and computer technologies has simplified carpet design and manufacturing processes. In turn, for management purposes nowadays physical parameters of the equipment can be controlled remotely via a smartphone or tablet. As a result, part of the daily work can be carried out through automated systems. Digital technologies work faster and are more reliable than human work, which is also significant as personnel shortages problem is common in Kazakhstani light industry sector. Concept of "fast fashion" is becoming more relevant in the carpet industry, which aims to renew the assortment several times during the year. In this regard, "fast fashion" forces manufacturers to look for new printing methods, and digital printing becomes the best option. Its effectiveness is explained by its wide possibilities, which means that any type of printing can be applied to almost any material (Geczy et all, 2018).

Table 3. Carpet production digitalization features at economic sector level

<table>
<tr><td colspan="8">Strategic management. Ecosystem method in management.
Identification of the transformation zone and justification of the need for digitalization.
Coordination of strategic documents for the stages of Digital Economy Development.
Reconstruction. Diversification. Formation of an innovative space.</td></tr>
<tr><td colspan="8">Service departments</td></tr>
<tr><td rowspan="2">Production</td><td rowspan="2">R&D</td><td rowspan="2">Personnel</td><td rowspan="2">Marketing</td><td rowspan="2">Finance</td><td colspan="2">Information technologies</td></tr>
<tr><td>Digital Platforms</td><td>Cyber security</td></tr>
<tr><td colspan="5">Electronic Document Management</td><td colspan="2" rowspan="11"></td></tr>
<tr><td>Robots
IIoT</td><td>Agile
IIoT</td><td>Agile
IoT, IIoT</td><td>CRM
Targeting</td><td>Electronic trans-actions</td><td rowspan="10">Solutions for the development and start of digital platforms.</td><td rowspan="10">Solutions for Information Systems. Virtualization and online capabilities: SaaS, IaaS, Paas, AIaaS.</td></tr>
<tr><td>VR
AR
Mixed R</td><td>VR
AR
Mixed R</td><td rowspan="3">Crowd sourcing, Freelance, virtu-al employment</td><td>Multiplicity</td><td>Block-chain technologies</td></tr>
<tr><td>Drones</td><td rowspan="2">Multi-D Printers</td><td>E-commerce</td><td>Crowd funding</td></tr>
<tr><td>Crowd-sourcing</td><td>E-learning</td><td rowspan="3">Audit of the quality of elec-tronic services (e-SQMSU)</td><td rowspan="2">Virtual curren-cies, ICOs</td></tr>
<tr><td>Multi-D Printers</td><td>Digital mod-els, Digital copies</td><td rowspan="3">Gadgets, bracelets, chips</td></tr>
<tr><td>SRM, MES, PLM, BIM</td><td rowspan="2"></td><td>Online technol-ogies</td></tr>
<tr><td>Robots</td><td>Mobile applica-tions (Apps)</td><td>QR codes.
NFC
FinTech</td></tr>
<tr><td colspan="6">Artificial intelligence, neural networks</td><td rowspan="5">Basicknowledge of cybersecurity: technological solutions; economics</td></tr>
<tr><td colspan="6">BIG DATA and Machine Learning</td></tr>
<tr><td colspan="6">Basic concepts of Biotechnology, neurotechnology, etc.</td></tr>
<tr><td colspan="6">"Industry 4.0." ability to solve applied problems using technology</td></tr>
<tr><td colspan="6">Basic knowledge of BIG DATA, Machine Learning, Artificial Intelligence</td></tr>
<tr><td colspan="8">Competence in quality management of integrated electronic services</td></tr>
<tr><td colspan="8">Basic competencies in IT architecture and programming</td></tr>
<tr><td colspan="8">Supporting digital literacy and expanding mixed competencies,
Life long Learning</td></tr>
<tr><td colspan="8">Note - conducted by the authors</td></tr>
</table>

Despite the urgent need for modernization, the introduction of digital technologies is observed only in a small number of Kazakhstani companies. Most players are not ready for today's technological realities. However, there are other prospects, enterprises are introducing new technologies at all stages of the life cycle, becoming more competitive and increasing exports. The state also plays a role in this, providing support at various levels, from financing programs with low interest rates to organizing special clusters (Baimukhamedov, 2019).

Conclusions

Finally, it can be observed that current methods aimed to access the digitalization have some weaknesses. Historically, digitalization assessment mainly was aimed on the technical aspects and financial parameters were not deeply analyzed. Current situation in the global world of digitalization has stepped forward and most cycles of digitalization are now far behind. Thus, focus needs to be changed to the financial aspect. Modern enterprises need quick return on investment. Digitalization processes in turn, needs to be financially effective, with no harm to the quality of product.

Digitalization has some crucial effect to the labor productivity. Massive digitalization of the production process requires less labor force. However, enterprises need to understand that this does not mean only to fire the employees. In order to decrease the labor force as a result of digitalization, enterprise needs to focus on the education of the remaining staff. Thus, employees required to be well-educated on all digitalization cycle, so that technical aspect will not suffer much. This in turn, allows to achieve high quality transformation based on the digitalization of production process. As a result, labor productivity improvement is achieved at its best to the enterprise.

This research has offered some assessment techniques of digitalization with the focus on the carpet industry of Kazakhstan. Although, this sector is relatively new sector for the domestic economy, offered techniques can be used for the enterprises in the market to make some quality decisions to improve the production process by means of digitalization. Enterprises can have some positive impact on their financial performance by using aforementioned techniques before implementation of new digitalization solutions.

Therefore, such factors as determination of development level of digital economy, required infrastructure and education of the population are also important. Digital economy is a complex phenomenon which covers processes of transformation of social and economic institutions of society at the micro and macro levels. Thus, evaluation of the digital economy needs to be undertaken on the basis of a number of indicators that allow us to analyze the digital economy at different levels.

References

Ali M. Impact of digitalization in textile industry [Electronic resource] / M. Ali, S. Basha // Journal of composition theory. — 4. — P. 374-382. — 2019. — Access mode: http://www.jctjournal.com/gallery/47-nov2019.pdf

Brousseau E. Internet and Digital Economics: Principles, Methods and Applications. — Cambridge; New York: Cambridge University Press, 2007.

Geczy A. The End of Fashion: Clothing and dress in the age of globalization. Bloomsbury Visual Arts. [Electronic resource] / A. Geczy. — 2018. — Access mode: https://ualresearchonline.arts.ac.uk/id/eprint/16723/3/The%20End%20of %20Black.pdf

Kotarba, Marcin. Measuring digitalization: Key metrics [Electronic resource] / Marcin Kotarba // Foundations of Management. — 2017. — 9/1, 123-138. — Access mode: https://dx.doi.org/10.1515/fman-2017-0010

Nasrat S. The Afghan Carpet Industry: Issues and Challenges [Electronic resource] / S. Nasrat // Economic Alternative. — 2017. — 4. — 475-490. Access mode: https://www.unwe.bg/uploads/Alternatives/Carpet_Industry_i_4_2016_05.01.2017.pdf

Petrovic V. Digitalization in the textile industry-4.0 Industrial revolution in clothing production [Electronic resource] / V. Petrovic, M. Pesici, D. Joksimovic // Environmental and Light Industry Technologies. — 2019. — 3. — 11-21.— Access mode: http://www.tfzr.uns.ac.rs/Content/filV_PETROVIC_ISDIT.pdf

Zhou J. Digitalization and intelligentization of manufacturing industry [Electronic resource] / J. Zhou // Shanghai University and Springer-Verlag Berlin Heidelberg. — 2013. — Access mode: https://doi.org/10.1007/s40436-013-0006-5

Анализ рынка ковров и ковровых изделий Казахстана. Каталог маркетинговых исследований. — 2021. — 57 с. [Электронный ресурс]. — Режим доступа: https://marketing.rbc.ru/research/46323/ (дата обращения: 05.06.2022).

Алексеев А.Н. Реорганизация предприятий в эпоху цифровизации [Электронный ресурс] / А. Н. Алексеев // Вестн. Моск. ун-та им. С. Витте. — 2019. — Вып. 2. — С. 82–86. — Режим доступа: https://cyberleninka.ru/article/n/reorganizatsiya-predpriyatiy-v-epohu-tsifrovizatsii

Баймухамедов М. Ф. Технологическая модернизация экономики страны на основе реализации государственной программы «Цифровой Казахстан» [Электронный ресурс] / М.Ф. Баймухамедов, Г.С. Баймухамедов, М.С. Аймурзинов // Аграрный вестн. Урала. — 2019. — Вып. 2. — С. 181–196. — Режим доступа: https://cyberleninka.ru/article/n/tehnologicheskaya-modernizatsiya-ekonomiki-strany-na-osnove-realizatsii-gosprogrammy-tsifrovoy-kazahstan

Бианкина А. О. Цифровые технологии и их роль в современной экономике [Электронный ресурс] / А.О. Бианкина // Экономика и социум: современные модели развития. — 2017. — Вып. 16. — С. 12–19. — Режим доступа: https://creativeconomy.ru/lib/40371

Государственные стандарты. Покрытие и изделия ковровые тканые машинного производства. Методы определения линейных размеров и поверхностной плотности. — М.: Изд-во стандартов, 2001. — 98 с.

Дурру О. Конкурентоспособность рынка ковровых изделий Республики Казахстан [Электронный ресурс] / О. Дурру, Р.К. Ниязбекова, М.К. Сейдахметов, А.М. Есиркепова, Д. Дурру // Технология текстильной промышленности. — Вып. 1 (379). — С. 83–91. — Режим доступа: https://ttp.ivgpu.com/wp-content/uploads/2019/08/379_14.pdf

Истомина Е.А. Оценка трендов цифровизации в промышленности / Е. А. Истомина // Вестн. Челяб. гос. ун-та. — 2018. — Вып. 12. — С. 108–116.

Косарева И.Н. Особенности управления предприятием в условиях цифровизации / И.Н. Косарева // Вестн. евразийской науки. — 2019. — Вып. 3. — С. 1–9.

Послание Главы государства К.-Ж. Токаева народу Казахстана. Казахстан в новой реальности: время действий [Электронный ресурс]. — Режим доступа: https://www.akorda.kz/ru/addresses/addresses_of_president/poslanie-glavy-gosudarstva-kasym-zhomarta-tokaeva-narodu-kazahstana-1-sentyabrya-2020 (Дата обращения: 10.08.2022)

Цифровой Казахстан: что ждать от госпрограммы [Электронный ресурс]. — Режим доступа: bnews.kz/ru/analysis/reviews/tsifrovoi_kazahstan_chto_zhdat_ot_gosprogrammi (Дата обращения: 16.08.2022)

Постановление Правительства Республики Казахстан от 12 декабря 2017 г. № 827 Об утверждении Государственной программы «Цифровой Казахстан» (с изм. и доп. на 01.10.2020 г.) [Электронный ресурс]. — Режим доступа: www.adilet.kz (Дата обращения: 11.06.2022).

Д.Е. Қанашаев, А.Е. Есболова, Р.К. Андарова, Г.А. Жадигерова, Мустафа Нурсой

Кілем өндірісіндегі цифрландыруды бағалау ерекшеліктері

Аңдатпа

Мақсаты: Қазақстанның кілем өнеркәсібін бағалау үшін пайдаланылуы мүмкін цифрландыруды бағалау әдістерін талдау. Өз кезегінде мұндай талдау цифрландыру мен жаһандық цифрландырудың заманауи тенденцияларын қарастыруды талап етеді.

Әдістері: Авторлар Қазақстандағы кілем өнеркәсібінің цифрлық трансформациясының әлеуметтік-экономикалық аспектілерін зерттеген, бұл бірінші кезекте кәсіпорынның қаржылық тұрақтылығын арттыруды мақсат етеді. Қосымша цифрландыру барысында негізгі факторы ретінде инновациялық адами капиталды дайындау, дамыту және тиімді пайдалануды ұсынады.

Нәтижелер: Кілем өнеркәсібі басқа салалармен салыстырғанда ерекшеліктері бар, бұл негізінен тұтынушылардың талғамындағы тенденциялардың жылдам өзгеруіне және инвестициялардың жылдам қайтарылуына байланысты. Кілем өнеркәсібін цифрландыру күрделі болуы және бизнес циклінің барлық аспектілерін қамтуы қажет.

Қорытынды: Қазіргі уақытта цифрлық трансформация кілем өндірісінің сапасы мен қаржылық қайтарымдылығын арттырудың шешуші құралына айналуда. Цифрландыруды бағалаудың ескі әдістері тиімсіз болып келген, өйткені ол тек техникалық аспектілерді қамтыды. Алайда, цифрландыру бизнес циклінің барлық аспектілерін қамтуы керек. Өз кезегінде мұндай кешенді әдістерді қолдану, кілем өндіруші кәсіпорынның қаржылық көрсеткіштері мен еңбек өнімділігін арттыруға мүмкіндік береді.

***Кілт сөздер*:** цифрландыру, цифрлық трансформация, кілем өнеркәсібі, кастомизация, индустрия 4.0, өндірісті роботтандыру, цифрлық платформа, еңбек өнімділігі, экономикалық тиімділік.

Д.Е. Канашаев, А.Е. Есболова, Р.К. Андарова, Г.А. Жадигерова, Мустафа Нурсой

Особенности оценки цифровизации в ковровом производстве

Аннотация:

Цель: Анализ методов оценки цифровизации, которые потенциально могут быть полезны для оценки ковровой отрасли Республики Казахстан. В свою очередь, анализ цифровизации требует учета современных тенденций в секторе и глобальной цифровизации.

Методы: Авторы рассмотрели социально-экономические аспекты цифровой трансформации ковровой отрасли Казахстана, связанные с подготовкой, развитием и эффективным использованием инновационного человеческого капитала как ключевого фактора повышения финансовой устойчивости предприятия.

Результаты: Ковровая промышленность имеет уникальные характеристики по сравнению с другими отраслями, в основном из-за быстрой смены тенденций во вкусах потребителей и быстрой окупаемости вложенной инвестиции. Цифровизация ковровой промышленности требует комплексного подхода и охвата всех аспектов бизнес-цикла организации.

Выводы: В настоящее время цифровая трансформация становится важнейшим инструментом повышения качества и финансовой отдачи коврового производства. Общепринятые методы оценки цифровизации стали неэффективными, так как охватывают только технические аспекты. Таким образом, внедрение цифровизации на производстве должна охватывать все аспекты бизнес-цикла и должна учитывать технические и финансовые аспекты. В свою очередь, такой комплексный подход позволяет улучшить финансовые показатели и производительность труда коврового предприятия.

Ключевые слова: цифровизация, цифровая трансформация, ковровая промышленность, кастомизация, Индустрия 4.0, роботизация производства, цифровая платформа, производительность труда, экономическая эффективность.

References

Ali, M., & Basha, S. (2019). Impact of digitalization in textile industry. *Journal of composition theory, 4*, 374-382. Retrieved from http://www.jctjournal.com/gallery/47-nov2019.pdf

Brousseau, E. (2007). *Internet and Digital Economics: Principles, Methods and Applications.* Cambridge; New York: Cambridge University Press.

Geczy, A. (2018). The End of Fashion: Clothing and dress in the age of globalization. Bloomsbury Visual Arts. Retrieved from https://ualresearchonline.arts.ac.uk/id/eprint/16723/3/The%20End%20of%20Black.pdf

Kotarba, & Marcin (2017). Measuring digitalization: Key metrics. *Foundations of Management, 9/1,* 123-138. Retrieved from https://dx.doi.org/10.1515/fman-2017-0010

Nasrat, S. (2017). The Afghan Carpet Industry: Issues and Challenges. *Economic Alternative, 4,* 475-490. Retrieved from https://www.unwe.bg/uploads/Alternatives/Carpet_Industry_i_4_2016_05.01.2017.pdf

Petrovic, V, Pesici M, & Joksimovic D. (2019). Digitalization in the textile industry-4.0 Industrial revolution in clothing production. *Environmental and Light Industry Technologies, 3,* 11-21. Retrieved from http://www.tfzr.uns.ac.rs/Content/filV_PETROVIC_ISDIT.pdf

Zhou, J. (2013). Digitalization and intelligentization of manufacturing industry. *Shanghai University and Springer-Verlag Berlin Heidelberg.* Retrieved from https://doi.org/10.1007/s40436-013-0006-5

Analiz rynka kovrov i kovrovykh izdelii Kazakhstana (2021). [Kazakhstan Carpet & Carpet Market Analysis]. *Katalog marketingovykh issledovanii [Market Research Catalog], 1,* 1-57. Retrieved from https://marketing.rbc.ru/research/46323/ [in Russian].

Alekseev, A.N. (2019). Reorganizatsiia predpriiatii v epokhu tsifrovizatsii [Reorganization of enterprises in the era of digitalization]. *Vestnik Moskovskogo universiteta imeni S. Vitte [Bulletin of S. Vitte Moscow University], 2*, 82-86. Retrieved from https://cyberleninka.ru/article/n/reorganizatsiya-predpriyatiy-v-epohu-tsifrovizatsii [in Russian].

Bajmuhamedov, M.F., Bajmuhamedova, G.S., & Ajmurzinov, M.S. (2019). Tekhnologicheskaia modernizatsiia ekonomiki strany na osnove realizatsii gosudarstvennoi programmy “Tsifrovoi Kazakhstan” [Technological modernization of the country's economy on the basis of the implementation of the state program “Digital Kazakhstan”]. *Agrarnyi vestnik Urala* [*Agrarian Bulletin of Ural],* 2, 181-196. Retrieved from https://cyberleninka.ru/article/n/tehnologicheskaya-modernizatsiya-ekonomiki-strany-na-osnove-realizatsii-gosprogrammy-tsifrovoy-kazahstan [in Russian].

Biankina, A. O. (2017). Tsifrovye tekhnologii i ikh rol v sovremennoi ekonomike [Digital technologies and their role in the modern economy]. *Ekonomika i sotsium: sovremennye modeli razvitiia [Economics and Society: Modern Development Models],* 16, 12–19. Retrieved from https://creativeconomy.ru/lib/40371 [in Russian].

Gosudarstvennye standarty (2001). Pokrytie i izdeliia kovrovye tkanye mashinnogo proizvodstva. Metody opredeleniia lineinykh razmerov i poverhnostnoi plotnosti [State standards. Machine-made carpeting and carpeting products. Methods for determining linear dimensions and surface density]. Moscow: Izdatelstvo standartov [in Russian].

Durru, O., Niyazbekova, R., Seidakhmetov, M., Yessirkepova, A., & Durru, D. (2019). Konkurentosposobnost rynka kovrovykh izdelii Respubliki Kazakhstan [Competitiveness of the carpet manufacturing market of the Republic of Kazakhstan]. *Tekhnologiia tekstilnoi promyshlennosti [Technology of Textile Industry]*, *1, 379*, 83-91. Retrieved from https://ttp.ivgpu.com/wp-content/uploads/2019/08/379_14.pdf [in Russian].

Istomina, E.A. (2018). Otsenka trendov tsifrovizatsii v promyshlennosti [Evaluation of digitalization trends in industry]. *Vestnik Cheliabinskogo gosudarstvennogo universiteta [Bulletin of Chelyabinsk State University]*, *12*, 108–116 [in Russian].

Kosareva, I.N. (2019). Osobennosti upravleniia predpriiatiem v usloviiakh tsifrovizatsii [Features of enterprise management in conditions of digitalization]. *Vestnik evraziiskoi nauki [Bulletin of Eurasian Science]*, *3*, 1-9 [in Russian].

Poslanie Glavy gosudarstva K.–Zh. Tokaeva narodu Kazakhstana. Kazakhstan v novoi realnosti: vremia deistvii (2020) [Message of the Head of State K. Tokayev to the people of Kazakhstan. Kazakhstan in a new reality: time of action]. *akorda.kz.* Retrieved from https://www.akorda.kz/ru/addresses/addresses_of_president/poslanie-glavy-gosudarstva-kasym-zhomarta-tokaeva-narodu-kazahstana-1-sentyabrya-2020 (Date of access 10/08/2022) [in Russian].

«Tsifrovoi Kazakhstan»: chto zhdat ot gosprogrammy (2021) [Digital Kazakhstan: what to expect from the state program]. *bnews.kz*. Retrieved from bnews.kz/ru/analysis/reviews/tsifrovoi_kazahstan_chto_zhdat_ot_ gosprogrammi [in Russian].

Postanovlenie Pravitelstva Respubliki Kazakhstan ot 12 dekabria 2017 goda No. 827 Ob utverzhdenii Gosudarstvnnoi programmy «Tsifrovoi Kazakhstan» (2020) [Resolution of the Government of the Republic of Kazakhstan from December 12, 2017 No. 827 on the approval of the State Program “Digital Kazakhstan”]. *adilet.kz.* Retrieved from www.adilet.kz (Date of access 12/06/2022) [in Russian].

DOI 10.31489/2022Ec4/55-66
JEL: J21
UDC 331.526

A.B. Karibayeva[1], Zh.M. Zhartay[1*], A.R. Nurgabdeshov[2], L.A. Korchevskaya[3], S.F. Yeremina[1]

[1] Buketov Karaganda University, Kazakhstan
[2]Heriot-Watt University, United Kingdom
[3]Kherson National Technical University, Ukraine

[1]aigerimkaribayeva1@gmail.com, [2]zhartayzh@gmail.com, [3]nurgabdeshov@gmail.com,
[4]lilkorchevska@gmail.com, [5]sofaeremina2004@gmail.com

[2]https://orcid.org/0000-0002-4676-4140

[2]Scopus Author ID: 57190138159,
[3]Scopus Author ID: 357196478162,
[4]Scopus Author ID: 36080755500

Background and genesis of the development of the definition and essence of the Green Economy

Abstract

Object: to reveal the essence of green economy and to explore the history of the development of the definition of green economy.

Methods: methods of system, dynamic and structural analysis.

Findings: the analysis of existing definitions of "green economy" was carried out and revealed a variety of not always similar opinions and interpretations of its definition. The search and formulation of the most precise and capacious modern definition of "green economy" was carried out. Russian and international scientific research on the topic of sustainable development and green economy were studied.

Conclusions: as a result, the author concludes that it is necessary to develop a new definition of "green economy", which will unambiguously define its essence. In conclusion, the author emphasizes that the concept of "green economy" does not replace the concept of sustainable development, but the achievement of sustainability of the state depends almost entirely on the formation of the "right" economy.

Keywords: green economy, sustainable development, innovative economy, economic growth, ecology, UN, UNEP, green economy initiative, human well-being, environment, industries.

Introduction

Over the past decade, it has been frequently argued that traditional economic models must be reformed to address climate change, biodiversity loss, water scarcity, etc., and at the same time address key social problems. The global financial crisis of 2008-2009 gave rise to these discussions (Barbier, E., 2010), which translated into the concept of a green economy. In addition, in 2015, countries around the world adopted the so-called 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (the General Assembly, 2015). These goals recognize that the eradication of global poverty must go hand in hand with strategies not only to create economic growth, but also to address a range of different social needs, including education, health care, social protection and job creation, while tackling pollution and climate change. Thus, the Sustainable Development Goals also establish a real link between ecological and economic systems. They also reinforce the need for a transition to a green economy, that is a fundamental transformation toward more sustainable modes of production and consumption.

While the concept of green economy has only recently attracted significant international attention, green economy policies have been discussed and analyzed for several decades by economists and scientists, especially in the field of ecological and environmental economics. "Green economy" is a relatively new concept in economic science. It appeared more than 20 years ago. To date, scientists and experts have not found a generally accepted and capacious concept of "green" economy, with which most of the world's experts would agree. Before revealing the essence of this term, let us consider its history of origin and study its definitions from various organizations.

It is assumed that a deeper study of the history of the emergence of the term "green economy" will formulate clear boundaries of the concept of "green economy" and the concept of sustainable development.

* Corresponding author. E-mail address: *zhartayzh@gmail.com*

Literature Review

In the 1990s, the phrase “green economy” was first used in economics. It was initially used to refer to a variety of financial phenomena and lacked numerical explanations, at times being contradictory. The world community has currently defined boundaries and the most crucial common interpretation of the phrase “green economy”. Negative negotiations on its core components have been resolved.

Unused reference points in allied fields, such as “green” chemistry, “green” industry, “green” development, etc., have emerged, signaling a discernible trend toward a more dynamic usage of the phrase “green economy” in the abstract.

Concurring to Google Researcher insights, more than 45 thousand logical distributions are as of now committed to the issue of green economy. Within the future, concurring to the drift displayed, as it were an increment in logical distributions on the green economy is anticipated.

Numerous advanced Russian researchers accept that “... since the Rio + 20 Summit archive and logical distributions have not however shaped an concurred understanding of the term “green economy”, and there's no “road map” for its advancement, but there are as of now its common standards, we ought to escalating investigate on this issue”.

It should be recognized that there is a need for a fundamental approach to both unexplored and existent ideas, which, so to say, should recognize or reject the application of specific ideas in legal research based on a thorough consideration of their essence, principles, and cons.

Therefore, we believe it is important to provide an accurate and comprehensive definition of the green economy that can clearly describe its role within the world's primary financial science for advancement both in theory and in reality.

Methods

The scientific work uses the methods of comparative analysis and induction, forming a general concept of “green economy” and its constituent elements.

Results

There has been a recent surge of interest in the green economy in academic circles concerned with economics and biology. The term “green economy” was introduced in 1989 in a groundbreaking report for the British government by a group of leading financial analysts entitled Blueprint for a Green Economy. The report was prepared for the UK government's discussion of the term “incremental improvement”. In any case, this paper did not characterize the term or elaborate on the quintessence of the green economy.

2008, the term was restored within the setting of talks approximately the numerous worldwide emergencies and reactions to them. In the midst of the monetary emergency and the issues of the worldwide subsidence, UNEP (United Nations Environment Programme) championed the thought of “green stimulus packages” and distinguished particular zones where expansive open ventures may allow a boost to the green economy. It has propelled a few governments to execute green bundle motivating forces as portion of their financial recuperation endeavors. In October 2008, UNEP propelled its Green Economy Activity to supply investigation and arrangement back for ventures in green divisions and contaminating seriously businesses. As part of this initiative, UNEP, together with Edward Barbier, one of the authors of the “Blueprint for a Green Economy”, prepared a report called “A Global Green New Deal”, which was released in April 2009. This report proposed a combination of policies that would stimulate economic recovery and at the same time could make the world economy more sustainable.

“A Global Green New Deal” recommended nations to devote a significant percentage of funds to green industries in order to accomplish three goals: achieving environmental recovery, eliminating poverty, and lowering carbon emissions and environmental degradation.

The greening course provided the basis for a popular domestic and international policy in the field of stimulating green technologies. In addition, the United Nations constantly publishes reports to support the environmental industry, especially on the eve of the Climate Change Conference. In HIS reports and statements, he also declares the conclusion that the greening of the world economic architecture and development models by maintaining the appropriate pace of sustainable development will mark a turning point in the development of civilization.

In 2010, Prime Ministers and Ministers of Ecology of the countries of the world in Nusa Dua (Indonesia) at the UNEP Global Environmental Forum reaffirmed their commitment to the concept of a green economy and that it is necessary to provide opportunities for environmental development for all people to further extract economic benefits (Table).

They also acknowledged UNEP's pioneering role in further defining and advancing the concept and urged the organization to contribute to this work as part of the 2012 UN Conference on Sustainable Development preparations.

Table. The benefits of green economy

Economic benefits	Social benefits	Environmental benefits
Reduced poverty and inequality* Increased economic growth and employment* Improved training and skills* Development of new markets and specialization Increased productivity, and increased commodity and agricultural yields Improved energy security Improved competitiveness and trade balances	Reduced poverty and reduced social inequality* Increased employment* Improved training and skills* Better public services Improved health outcomes	Sustainable management of natural assets and resources Reduced greenhouse gas and other emissions Better adaptation to climate change and resilience to natural disasters Improved environmental quality
Note – compiled by the authors on the basis of Employment Policies for a Green Economy at the European Union Level, https://https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy		

The UN General Assembly unanimously resolved to make the topic of the green economy one of the conference's primary themes in March 2010. This attracted worldwide interest to the picture of the green economy, which in turn was reflected in the quantity of publications on this picture. The Green Ecology Report, published by UNEP in November 2011 as part of the Green Ecology Initiative, was one of the important reports. Importantly, the report offers a working definition of the green economy, which has subsequently been used in a significant number of other publications.

Numerous governmental organizations and calibers have also been established in recent years to promote the green economy as a concept and to do research, analysis, and advocacy. Many organizations have begun to attempt to define the green economy (Fig. 1).

There isn't a strong consensus on what the phrase “green economy” signifies just yet. The UNEP Government Council acknowledged in the Nusa Dua Declaration that additional clarification of the phrase “green economy” is necessary. However, it was agreed upon that a green economy must be viewed in the context of sustainable development and in accordance with the Ri principles. There are many different possible roads to a green economy or a green future, depending on local circumstances, many delegators emphasized.

Year	Organization	The term
2009	UNEP (United Nations Environment Programme)	A geen economy is a system of economic activities related to the production, distribution and consumption of goods and services that result in improved human well-being over the long term, while not exposing future generations to significant environmental risks or ecological scarcities"
2011	UNEP (United Nations Environment Programme)	A green economy is a resource-efficient, low-carbon development-based economy that leads to improved human well-being and social justice, while significantly reducing environmental risks and preventing biodiversity loss
2011	UNCTAD (United Nations Conference for Trade and Development)	A green economy is an economy that seeks long-term social benefits in short-term activities and results in improved human well-being and reduced inequalities without exposing future generations to significant environmental risks and ecological scarcities
2011	The Coalition for a Green Economy (GEC)	A green economy is a sustainable economy that provides a better quality of life for all within ecological limits
2011	The International Chamber of Commerce(ICC)	A green economy is a an economy in which economic growth and environmental responsibility work together in a mutually reinforcing fashion while supporting social development progress
2011	The South African government (UNDESA)	A green economy to benefit from new prospects for economic activity from climate change, innovation drawn from technology, research and manufacturing, responsibility of government to create an enabling environment, and partnership of all constituencies and citizens to achieve the goals of the green economy
2011	The Commission on Sustainable Development at the United Nations	A green economy is an economy that focuses on seizing opportunities to advance economic and environmental goals simultaneously
2012	The European Bank for Development and Reconstruction	A green economy is one in which public and private investments are made in a way that minimizes the environmental impact of economic activity and where market failures are addressed through proven policies and legal frameworks that systematically consider ecosystem conditions, manage associated risks and foster innovation
2012	The Danish Group 92	A green economy is ‘not a state but a process of transformation and a constant dynamic progression. The Green Economy does away with the systemic distortions and dis-functionalities of the current mainstream economy and results in human well-being and equitable access to opportunity for all people, while safeguarding environmental and economic integrity in order to remain within the planet’s finite carrying capacity. The economy cannot be Green without being Equitable

Figure 1. Definitions of the “green economy” by various organizations for the period 2009-2012

Note – compiled by the authors on the basis of Employment Policies for a Green Economy at the European Union Level, https://https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy

The concept of a green economy is associated with several different economic theories, concepts, practical approaches and assessment tools. All relevant elements were combined into a multi-level structure (Fig. 2). The purpose of this structure is to formulate concepts and their interrelations so that the structure can serve as a "heuristic of green development and economy".

As a result, firstly, the green economy is connected with the theories of environmental economics and ecological economics. The implementation of these theories leads to the emergence of various concepts and approaches. Environmental economics is associated with cleaner production and resource efficiency, environmental economics relies on advanced concepts such as industrial ecology or closed-loop economics. The hierarchy of waste is related to the economics of the environment, depending on the extent to which different approaches are implemented. All these concepts are based on a practical approach or solutions to achieve the goals of the green economy.

Practical solutions for a "green economy" encompass a broad range of approaches that can be implemented such as reuse, repair, recovery or recycling, applying eco-design rules or developing industrial symbiosis. In order to measure the effects of these solutions on green economy goals, different assessment tools can be used such as LCA, LCC, S-LCA, MFA, EEIO and CBA.

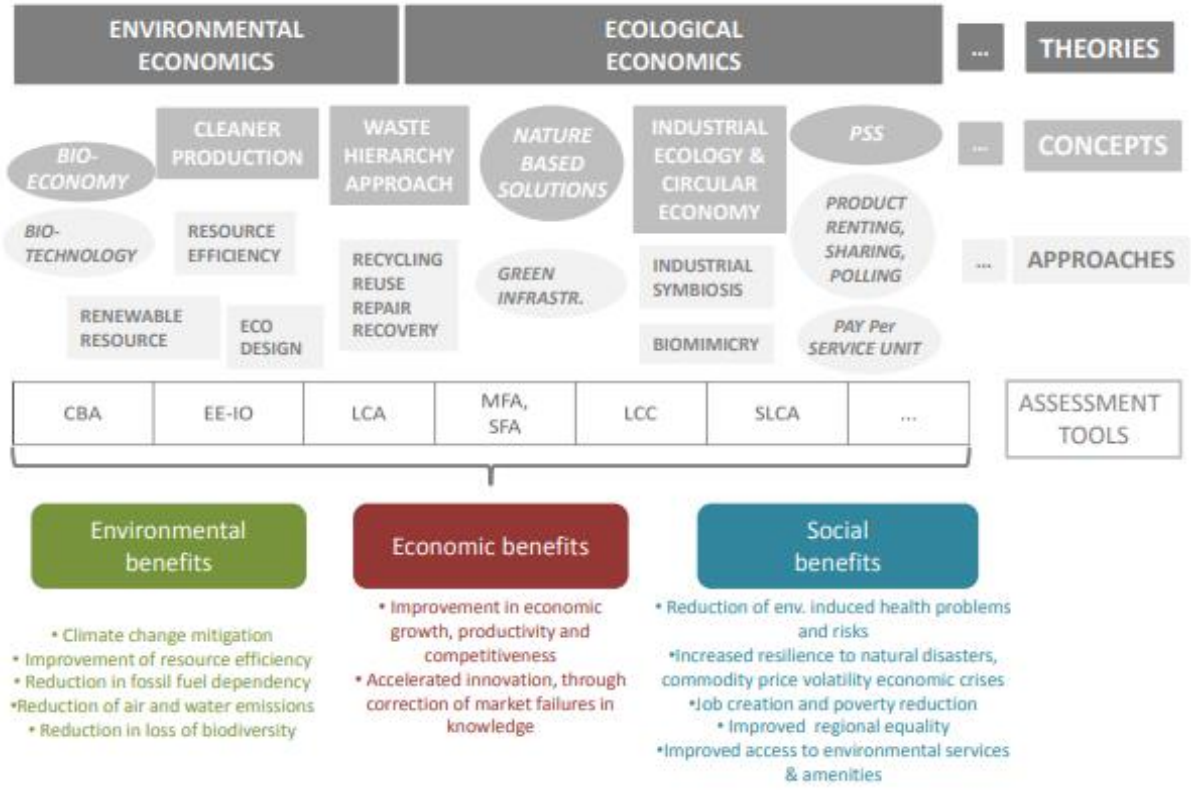


Figure 2. Generic framework showing the different layers of the green economy concept (for the concepts, current concepts are marked with boxes, emerging concepts are in circles and in italics).

Note – compiled by the authors

In Kazakhstan, the need for a transition to a green economy was first announced in 2012 in the Message of ex-President Nazarbayev "Strategy "Kazakhstan – 2050". New political course of the established state". In his speech the President emphasized: "... All developed countries are increasing investment in alternative and "green" energy technologies. Already by 2050 their use will allow us to generate up to 50% of all energy consumed. It is obvious that the era of hydrocarbon economy is gradually approaching its end... I propose to create in 2013 an international organization "Green Bridge", and to start implementation of Green 4 project on the basis of four satellite cities around Almaty. The forthcoming exhibition EXPO-2017 in Astana should give a powerful impetus to the transition of the country to a "green" path of development..." (The strategy Kazakhstan-2050, 2012).

The environmental policy of Kazakhstan is built in accordance with the main strategic document – the Strategy "Kazakhstan-2050" (The strategy Kazakhstan-2050, 2012). In this Message to the people of Ka-

zakhstan, N.A. Nazarbayev noted: “It is fundamentally important for us to rethink our attitude to our natural resources. We must learn how to manage them properly, accumulating income from their sale in the treasury, and most importantly – to transform the natural resources of our country into sustainable economic growth as efficiently as possible”.

A new direction in the development of the country was the transition to a “green economy”, through the adoption in 2013 of the Concept for the transition of the Republic of Kazakhstan to a “green economy”. The “green economy” in this document is defined as an economy with a high level of quality of life of the population, careful and rational use of natural resources in the interests of present and future generations, in accordance with the international environmental obligations adopted by the country, including the Rio Principles, the Agenda for the XXI Century, the Johannesburg Plan and the Declaration Millennia.

In 2018, experts of the United Nations Economic Commission for Europe (UNECE) completed the Third Environmental Performance Review for Kazakhstan (EPR). The voluntary national review of Kazakhstan on achieving the SDGs was published in 2019 on the UN website (The strategy Kazakhstan-2050, 2012).

A prototype national structure of SDG indicators has been created with the Bureau of National Statistics' direction, and work is currently being done to publish a national platform/page for reporting on the SDGs on the Committee's website. However, there is a low level of knowledge of the SDGs among central government officials and at the local level.

Kazakhstan joined the OECD Declaration on “green growth” (National Review of Kazakhstan, 2016) in 2016 and the Declaration on Reducing Risks Associated with Lead. These declarations call for signatory nations to make efforts to implement “green wealth” strategies, promote “green” investments, manage natural resources sustainably, and review internal policies to do away with environmentally harmful practices like fossil fuel subsidies. In order to strengthen its own “green growth” policy, the nation works hard to actively engage in the work of the ECD Environmental Policy Committee and its subsidiary bodies, share best practices, and implement ECD methodological recommendations.

In 2017, a large-scale EXPO-2017 event was held in Kazakhstan, the theme of which was “Future Energy”. The theme of EXPO-2017 – “Energy of the Future”, highlighted one of the most pressing topics of concern to the world community – sustainable development and alternative energy sources. After the EXPO-2017 in Kazakhstan, the NAO “International Center for Green Technologies and Investment Projects” (ICTIP) was established, which is designed to continue green initiatives in Kazakhstan.

On January 2, 2021, Kazakhstan adopted a new Environmental Code of the Republic of Kazakhstan. The Order of the Acting Minister of Ecology, Geology and Natural Resources of the Republic of Kazakhstan dated December 2, 2021 No. 482 approved the Requirements for separate waste collection, including the types or groups (totality of types) of waste subject to mandatory separate collection, taking into account technical, economic and environmental expediency.

NGOs contribute to the promotion of sustainable development policy in Kazakhstan. There are 2,917 active NGOs in Kazakhstan, the number of environmental NGOs is 18% of the total number of NGOs.

The works of V.S. Bochko (2014) give a structured and well-reasoned division of contemporary approaches to the definition of “green” economy. He identifies four basic types of approaches and provides the most thorough and comprehensive critique of modern approaches to the “green” economy in his works (Fig. 3).

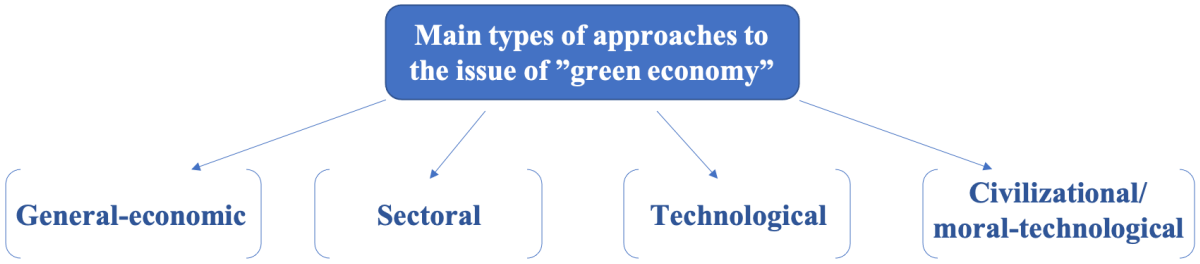


Figure 3. The relationship between the green economy and sustainable development

Note – compiled by the authors on the basis Green Cities and a Green Economy. Sustainability. https://gggi.org/wp-content/uploads/2020/11/Green-Growth-in-Action-Attaining-Green-Cities_reduced-size

To fully understand Bochko's definitions, it is necessary to understand that he sees the definition of the green economy as the need to live in harmony with nature, which is humanity's second eternal problem, and to consider his 4 types of approach:

1. General-economic. Thus, according to T.V. Zakharova, “green” growth based on clean technologies, organic agriculture, efficient energy and water consumption, knowledge-intensive urban infrastructure development, waste management, green transportation, etc., can become the primary pathway for innovative development in Russia. However, there are opposing viewpoints on this matter. Since this is an unjustified extreme, V.S. Bochko (2014) points out.

According to our opinion, the general ecological approach is justified given that the classical ecological theory currently lacks a solution to the array of global environmental and ecological issues and does not address the fundamental question of how to ensure environmental sustainability in the face of the current crisis. At the same time, the proposed modern notion of a “green” economy clearly denotes the direction of growth, the greening of the modern economy, and the creation of new environmentally friendly enterprises through state demand and the emergence of a new demand and consumption culture among society.

We can find the confirmation of the correctness of this point of view in the works of foreign authors. Thus, the perspective of dynamic potential and institutional theory are considered in the works of Yang, Zhang, Jiang & Sun (2015). They studied companies in emerging economies and their response to “green” management pressure, as well as the results of the implementation of “green” management methods.

An intriguing example comes from the research H.B. Dulal, R. Dulal, and P.K. Yadav (2015) conducted on the Asian experience in the area of green economic development. They demonstrate how Asia's ongoing rapid economic growth is successfully removing millions of people from the cycle of poverty, but it is also quickly driving resource consumption to unsustainable levels. Increased energy production and consumption, according to the authors, results in increased external costs like deforestation as well as adverse effects like increased emissions of greenhouse gases (GHG), non-renewable resource depletion, river pollution, desertification, flooding, and long-term climate change (Fig. 4).

Figure 4. Green economy (bioeconomy) as a part of civilization's responsibility.

Note – compiled by the authors on the basis Green economy. UNEP https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy

They conclude that the distributional capacity of the economy, the aggregate demand for resources and economic activity, and the financial instruments currently in use are all shifting to some extent. It hasn't yet been broadly adopted to use a tool like a carb tax, which has tremendous potential to reduce emissions

growth and prevent the economy from getting locked onto carb-intensive routes. Despite the widespread destruction of natural resources, the environment, and the rise in GHG emissions, a tax on the extraction of natural resources has not been implemented on a broader scale yet. The authors believe that the spread of "green" fiscal measures in Asia is very effective (Dulal, H.B., Dulal, R., Yadav, P.K., 2015). Without a doubt, this conclusion emphasizes the state's crucial role in promoting and forming the "green" economy.

Many contemporary European experts concur that there is a good likelihood that the "green economy" concept will become the dominant economic system in the future. So D.M., Pociovălișteanu, I. Novo-Corti, M.I. Aceleanu, A.C. Serban & E.F. Grecu (2015) demonstrates that in order to achieve sustainable economic growth, environmental protection must also be developed. This raises the issue of the need to transition to a "green" economy because it creates a link between sustainable and economic growth while also enhancing human health, social justice, employment opportunities, and environmental protection (Fig. 5).

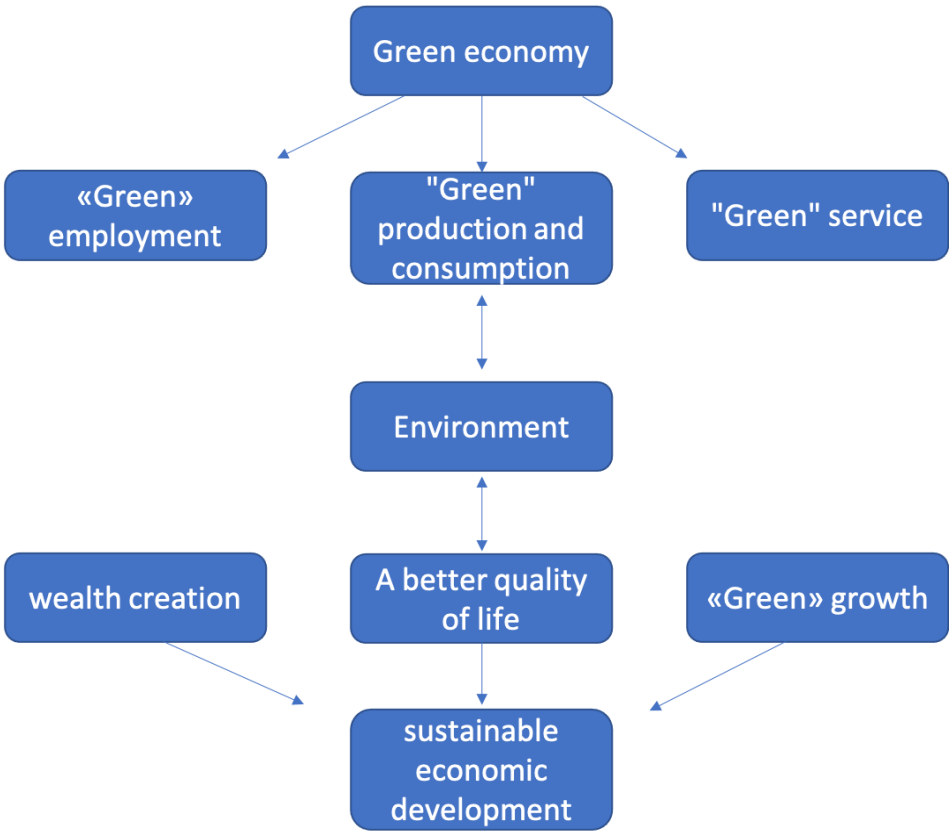


Figure 5. The relationship between the green economy and sustainable development

Note – compiled by the authors on the basis of Employment Policies for a Green Economy at the European Union Level, https://https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy

2. Sectoral, which to a greater extent understands the development of "green" industries, including the transition to a low-carbon economy. The issues of alternative energy based on renewable energy sources and its role in the development of a "green" economy are actively considered by modern scientists around the world, such as J. Mauritzen (2016), J.J. Andrea, C. Burns & J. Touza (2017), J. Meckling & L. Hughes (2018). B.N. Porfiriev and other adherents of the sectoral approach put alternative energy on the first and key place among "green" industries and understand "... "green" economy as development, production and operation of technologies and equipment to control and reduce pollutant and greenhouse gas emissions, climate change monitoring and forecasting, as well as technologies of energy and resource saving and renewable energy. It also includes the development, production and use of technologies and materials to protect buildings and structures from extreme fluctuations in temperature, humidity and wind loads; production of environmentally friendly products, including agricultural products (food, natural fibers) and consumer goods (e.g., drugs and personal care products on a natural, natural basis without chemical additives)" (Meckling J., Hughes L., 2018; Porfiriev, B.N., 2012). But as these authors discuss the need to modernize and improve

production efficiency in the context of solving global environmental problems, such as global warming, etc., it becomes clear that this group of viewpoints is identical to the first, so-called general scientific group.

Some authors, in particular V.S. Bochko, believe that "... this interpretation of the green economy in its essence is not fundamentally different from the concepts of "ecological nature management", so acts as their new more understandable version compared to the poorly understood model of sustainable development" (Porfiriev, B.N., 2012).

According to our opinion, this approach to the "green" economy is similar to the theory of balanced nature management (Golubetskaya N.P., 2001), which holds that humanity has a responsibility to make up for the harm done to nature in order to restore the ecological balance to its original state. The premises of this approach are difficult to contest, but in our opinion, they do not adequately address the problems associated with the development of environmentally friendly transportation and transportation infrastructure, environmentally friendly construction, and tourism. For instance, a number of contemporary scientists, such as M. Stroebel (2015), who discuss "green economies" and the creation of new "green" sectors of the economy or the revision of the role of traditional industries specifically focus on the role that tourism plays in the development of a "green" economy. They mention the fact that tourism provides a unique framing for the "green" economy as it positions the sector for further "green" growth as evidence that tourism may contribute to growth, development, and poverty reduction while lowering the impact on the environment (Stroebel M., 2015).

Also, this approach does not consider such an important natural resource as atmospheric air. Important social issues and the problem of the development of social institutions for the formation of an ecological culture of the population remain outside the scope of this research.

3. Technological, by which we propose to understand "... the transition of all industries to technologies that ensure the creation of environmentally friendly industrial and food products" (Bochko, V.S., 2014). Additionally, this approach has little bearing on the tourism sector or other emerging "green" industries like "green" construction. This approach gives business priority in the transition to a "green" economy, contradicting the business's primary goal of making a profit. The state's role in this approach is minimal and not the most important factor. Since the "green" economy, in its modern interpretation, is primarily focused on solving governmental problems, the state is the primary stakeholder in it.

The lack of attention to the relationship between the development of the green economy and the development of green cities, which are currently actively influencing demand for green technology and are one of the drivers of the green economy, is, in our opinion, the weakness of the sectoral and technological approach.

Many contemporary authors discuss the crucial role that cities play in the development of a "green" economy. The research by P. Baranova & F. Paterson (2017), I. Monasterolo & M. Raberto (2018), and others reflect these challenges and the necessity to develop an effective "green" fiscal policy. According to P. Newton & P. Newman (2015), the "green" agenda for cities and the economy as a whole is one of the primary operations of global organizations. It is also becoming an increasingly important national and urban priority. The authors illustrate the connection and mutual influence of "green" urban infrastructure, eco-cities, and the "green" sector of the economy using Australia as an example. They carried out a study, and the results revealed that 85% of the companies responded that "green" growth was a priority. Additionally, subject to more active government encouragement, the surveyed companies recognize opportunities for industry participation that would be more active in the transition to a low-carb ("green") economy (Fig. 6).

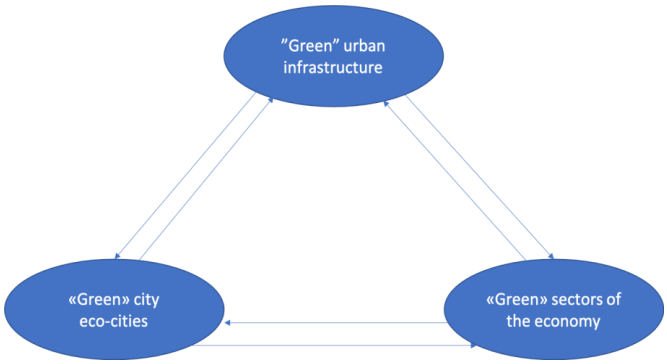


Figure 6. Critical links of the green economy: the role of the built environment sector in providing green cities and green economies according to the model of P. Newton, P. Newman (2015)

Note – compiled by the authors on the basis of the research of P. Newton, P. Newman (2015).

4. “Civilizational / moral-technological”, at allocation of which V.S. Bochko (2014) and his associates “...proceed from the fact that green economy is conscious transition of the intellectually developed society to ecologically clean technologies in all spheres, including a life and rest. This approach is based on taking into account the growth of general and professional culture of people”. It is challenging to argue against this methodology, but in contemporary society, different nations are at various stages of development, including economic development.

For instance, S. Bracking (2015) also researched the importance of personal participation at the individual level in the transition to a green economy. In his work, he considers the relationship between assets and their derivatives and inquires as to the extent to which productivity in the green economy generates tangible or virtual assets. His research uses two case studies, one from South Africa's Clean Development Mechanisms (CDMs) and the other from the global private green bond market, to demonstrate how both public and private finance can create virtual economic activity through processes of social valuation and proper accumulation (Duwe, S., 2015).

In summarizing the analysis of contemporary approaches to defining the green economy, it should be noted that none of the approaches (general ecological, sectoral, technological, and civilizational) can be deemed complete because they all have flaws. Accordingly, a new approach to defining the green economy is required, one that synthesizes the benefits of the approaches that are currently in use. However, our opinion is that the fundamental approach is the general ecological approach, which views the green economy as a new theorem.

Discussions

I would like to note that, in summarizing the opinions of Russian and foreign scientists on the definition of the “green” economy, most of them are in agreement on the following issues:

1. The global ecological threat to human civilization caused by the deterioration of the Earth's environmental situation necessitates balancing economic goals with environmental goals, hence a shift to “green” economic principles is unavoidable.
2. We are in the preliminary stages of a radical change in economic paradigm and the transition at the state level to balancing the system of economic values with environmental values. Classical economic theory, including the theory of “zero wealth”, does not provide clear, practical guidelines for the further development of the world economy.
3. A new, comprehensive definition of the green economy is required, one that outlines its position within modern science and establishes its boundaries. Current approaches in green economy methodology can be schematically presented and divided into two main groups:

- These are aspects of green economy aimed at fostering an environment suitable for human habitation;
- “green economy” components designed to create environmentally friendly conditions and new opportunities for human life that do not endanger the natural environment

We believe that the most appropriate approach is to combine existing theoretical approaches and create a new vision of a green economy on the basis of an analysis of the strengths and weaknesses of current approaches to defining a green economy.

Conclusions

The key finding from the research sample is that the “green economy” describes its purpose as balancing unstable ecological, scientific, and economic systems for the survival of human civilization. A priority and stabilizing component of the green economy is the ecological component. The modern definition of the term “green economy” must start from a synthesis of general economic, social, technological, and cultural perspectives. According to this definition, the “green economy” is an environment that promotes sustainable growth through the dominance of clean industries, the use of alternative energy sources, and resource-saving technologies, and where environmental progress and the development of ecological culture are actively encouraged.

References:

Andrea, J. J., Burns, C., Touza, J. (2017). Renewable Energy as a Luxury? A Qualitative Comparative Analysis of the Role of the Economy in the EU’s Renewable Energy Transitions During the ‘Double Crisis’. / Ecological Economic. 142, 81–90. https://doi.org.10.1016/j.ecolecon.2017.06.011

Baranova P., Paterson F. (2017). Environmental Capabilities of Small and Medium Sized Enterprises: Towards Transition toa Low Carbon Economy in the East Midlands. *Local Economy*.32(8), 835–853.

Barbier, E. (2010). How is the global green new deal going? Nature, 464(7290), 832-3. https://doi.org/10.1038/464832a
Bracking, S. (2015). Performativity in the Green Economy: how far does climate finance create a fictive economy? Third World Quarterly, 36(12), 2337-2357. https://doi.org/DOI:10.1080/01436597.2015.1086263.
Building an Equitable Green Economy(2020). *Green Economy – what will it take?* BEGE. Retrieved from http://www.92grp.dk/files/fokus-og-nyheder/07-TARA.pdf
Dulal, H.B., Dulal, R., Yadav, P.K. (2015). Delivering Green Economy in Asia: the Role of Fiscal Instruments. *Futures.* 73, 61–77. http://http://dx.doi.org/10.1016/j.futures.2015.08.002
Duwe, S. (2015). Governing the Transition toa Green Economy. *Freie Universität Berlin.* http://dx.doi.org/10.17169/refubium-7030
Environment, U. N. (2009). *Green economy*. UNEP, November 18, 2022, Retrieved from https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy
European Bank for Restruction and Development. (2020). *Green economy transition approach 2021-2025*.EBRD. Retrieved from https://www.ebrd.com/what-we-do/get.html
Golubetskaya N. P. (2001). Sustainable Use of Natural Resources in the Transition Economy. *NIA-Priroda*. https://doi.org.10.15826/vestnik.2018.17.1.006
Green Economy Coalition (2011). *Towards to Green Economy*. GEC. Retrieved from http://www.greeneconomycoalition.org/
Mauritzen, J. (2016). Cost, Contractors and Scale: An Empirical Analysis of the California Solar Market. The Energy Journal. 38(6). http://dx.doi.org/10.2139/ssrn.2927690
Meckling J., Hughes L. (2018). Protecting Solar: Global Supply Chains and Business Power. *New Political Economy.* 23(4),1–17. https://doi.org. 10.1080/13563467.2017.1330878
Monasterolo, I., Raberto, M. (2018). The EIRIN Flow-of-Funds Behavioural Model of Green Fiscal Policies and Green Sovereign Bonds. *Ecological Economics.* 144, 228–243. https://doi.org. 10.1016/j.ecolecon.2017.07.029
Newton, P., Newman, P. (2015). Critical Connections: The role of the Built Environment Sector in Delivering Green Cities and a Green Economy. *Sustainability.* 7(7), 9417–9443. https://doi.org.10.3390/su7079417
Pociovălișteanu, D. M., Novo-Corti, I., Aceleanu, M. I., Șerban, A. C., Grecu, E. (2015). Employment Policies for a Green Economy at the European Union Level. Sustainability, Vol. 7, No. 7, 9231–9250. https://doi.org/10.3390/su7079231
Stroebel M. (2015). Tourism and the Green Economy: Inspiring or Averting Change? Third World Quarterly. 36(12), 225–2243. https://doi.org.10.1080/09669582.2019.1666858
United Nations Department of Economic and Social Affairs. (2012). A guidebook to the Green Economy. *Issue 1: Green Economy, Green Growth, and Low-Carbon Development – history, definitions and a guide to recent publications.*UNDESA. Retrieved from https://sustainabledevelopment.un.org/content/documents/GE%20Guidebook.
United Nations Environment Programme. (2009). *Green Economy Initiative.Sustainable Consumption and Production*. UNEP. Retrieved from https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy
United Nations Environment Programme. (2011). Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. UNEP. Retrieved from http://www.un.org/ru/development/sustainable/ger_synthesis
United Nations. (2011). *The green economy: trade and sustainable development implication.* UN. Retrieved from http://unctad.org/en/docs/ditcted20102en
United Nations Environment Programme. (2012). *ICC comments on the UNEP draft Green Economy Report.* UNEP. Retrieved from https://cdn.iccwbo.org/content/uploads/sites/3/2011/05/ICC-comments-on-the-UNEP-draft-Green-Economy-Report
Yang, J., Zhang, F., Jiang, X., Sun, W. (2015). Strategic Flexibility, Green Management, and Firm Competitiveness in an Emerging Economy. *Technological Forecasting and Social Change.* 101, 347–356. http://dx.doi.org/10.1016/j.techfore.2015.09.016
Бочко В.С. Зеленая экономика: вторая вечная проблема человечества [Текст] / В.С. Бочко // Вестник УрФУ Сер.: Экономика и управление. — 2014.— № 3. — С. 113-119.
Захарова Т. В. «Зеленая» экономика как новый курс развития: глобальный и региональный аспекты [Текст] / Т. В. Захарова // Вестн. Том. гос. ун-та. Экономика. — 2011. — № 4. — С. 28–38.
Порфирьев Б. Н. «Зелёная» экономика: общемировые тенденции развития и перспективы [Текст] / Б. Н. Порфирьев // Вестн. Рос. акад. наук. — 2012. — №4.— С. 323–332.
Послание Президента Республики Казахстан «Стратегия «Казахстан–2050»: Новый политический курс состоявшегося государства». — 2012. [Электронный ресурс]. — Режим доступа: https://www.akorda.kz/ru/official_documents/strategies_and_programs (Дата обращения:01.11.2022).

Ә.Б. Кәрібаева, Ж.М. Жартай, А.Р. Нургабдешов, Л.А. Корчевская, С.Ф. Еремина

«Жасыл» экономиканың анықтамасы мен мәнінің даму тарихы

Аңдатпа

Мақсаты: Зерттеудің мақсаты жасыл экономиканың мәнін ашу және жасыл экономика анықтамасының даму тарихын зерделеу.

Әдісі: Жүйелік, динамикалық, құрылымдық және корреляциялық талдау әдістері пайдаланылды.

Қорытынды: Жүргізілген талдау «жасыл» экономика ұғымы бойынша анықтамалардың және пікірлердің әртүрлілігін анықтады. «Жасыл» экономиканың ең дәл және ауқымды заманауи анықтамасын іздеуімен тұжырымдауы жүзеге асырылды. Тұрақты даму және «жасыл» экономика тақырыбы бойынша ресейлік және халықаралық ғылыми зерттеулер қолданылды.

Тұжырымдама: Нәтижесінде авторлар «жасыл» экономиканың мәнін нақты анықтайтын жаңа пікірдің әзірлеу қажеттілігі туралы қорытындыға келді. Сонымен қатар «жасыл» экономика ұғымы тұрақты даму ұғымын алмастырмайды деп атап өтілген, бірақ мемлекеттің тұрақтылығына қол жеткізуі толығымен «дұрыс» экономиканың қалыптасуына байланысты.

Кілт сөздер: «жасыл» экономика, тұрақты даму, инновациялық экономика, экономикалық өсу, экология, БҰҰ, ЮНЕП, «жасыл» экономика бастамасы, адамның әл-ауқаты, қоршаған орта, өнеркәсіп салалары.

А.Б. Карибаева, Ж.М. Жартай, А.Р. Нургабдешов, Л.А. Корчевская, С.Ф. Еремина

История развития определения и сущности зеленой экономики

Аннотация:

Цель: Целью настоящего исследования является раскрытие сущности «зеленой» экономики и изучение истории развития определения «зеленой» экономики.

Методы: Методы системного, динамического, структурного и корреляционного анализа.

Результаты: Произведенный анализ имеющихся дефиниции определения «зеленая» экономика обнаружил разнообразие не всегда совпадающих суждений и трактовок ее определения. Осуществлен поиск и формулировка наиболее точного и емкого прогрессивного описания «зеленой» экономики. Изучены международные научные исследования по теме устойчивого развития и «зеленой» экономики.

Выводы: В результате авторы заключают, что необходимо разработать новое определение «зеленой» экономики, которое определенно обусловит ее сущность. В заключение авторы подчеркивают, что понятие «зеленая» экономика не заменяет идею устойчивого развития, но достижение устойчивости государства практически абсолютно зависит от формирования «правильной» экономики.

***Ключевые слова*:** зеленая экономика, устойчивое развитие, инновационная экономика, экономический рост, экология, ООН, ЮНЕП, инициатива «зеленой» экономики, благосостояние человека, окружающая среда, отрасли промышленности.

References:

Andrea, J. J., Burns, C., & Touza, J. (2017). Renewable Energy as a Luxury? A Qualitative Comparative Analysis of the Role of the Economy in the EU's Renewable Energy Transitions During the "Double Crisis". Ecological Economic. 142, 81–90. https://doi.org.10.1016/j.ecolecon.2017.06.011

Baranova P., & Paterson F. (2017). Environmental Capabilities of Small and Medium Sized Enterprises: Towards Transition toa Low Carbon Economy in the East Midlands. *Local Economy.* 32(8), 835–853.

Barbier, E. (2010). How is the global green new deal going? Nature, 464(7290), 832-3. https://doi.org/10.1038/464832a

Bochko, V. S. (2014). «Zelenaia» ekonomika: vtoraia vechnaia problema chelovechestva [Green Economy: The Second Eternal Problem of Mankind]. *Vestnik UrFU. Seriia Ekonomika i upravlenie [Bulletin of Ural Federal University: Series Economics and Management]*, 3, 113–119. Retrieved from https: //elar.urfu.ru/bitstream/10995/55087/1/vestnik_2014_3_012.pdf [in Russian].

Bracking, S. (2015). Performativity in the Green Economy: how far does climate finance create a fictive economy? Third World Quarterly, 36(12), 2337-2357. https://doi.org/DOI:10.1080/01436597.2015.1086263.

Building an Equitable Green Economy (2020). *Green Economy – what will it take?* BEGE. Retrieved from http://www.92grp.dk/files/fokus-og-nyheder/07-TARA.pdf

Dulal, H. B., Dulal, R., & Yadav, P. K. (2015). Delivering Green Economy in Asia: the Role of Fiscal Instruments. *Futures.* 73, 61–77. http://http://dx.doi.org/10.1016/j.futures.2015.08.002

Duwe, S. (2015). Governing the Transition toa Green Economy. *Freie Universität Berlin.* http://dx.doi.org/10.17169/refubium-7030

Environment, U. N. (2009). *Green economy*. UNEP, November 18, 2022. Retrieved from https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy

European Bank for Restruction and Development (2020). *Green economy transition approach 2021-2025*.EBRD. Retrieved from https://www.ebrd.com/what-we-do/get.html

Golubetskaya, N. P. (2001). Sustainable Use of Natural Resources in the Transition Economy. *NIA-Priroda*. https://doi.org.10.15826/vestnik.2018.17.1.006

Green Economy Coalition (2011). *Towards to Green Economy*. GEC. Retrieved from http://www.greeneconomycoalition.org/

Mauritzen, J. (2016). Cost, Contractors and Scale: An Empirical Analysis of the California Solar Market. The Energy Journal. 38(6). http://dx.doi.org/10.2139/ssrn.2927690

Meckling J., & Hughes L. (2018). Protecting Solar: Global Supply Chains and Business Power. *New Political Economy*. 23(4),1–17. https://doi.org. 10.1080/13563467.2017.1330878

Monasterolo, I., & Raberto, M. (2018). The EIRIN Flow-of-Funds Behavioural Model of Green Fiscal Policies and Green Sovereign Bonds. *Ecological Economics*, 144, 228–243. https://doi.org. 10.1016/j.ecolecon.2017.07.029

Newton, P., & Newman, P. (2015). Critical Connections: The role of the Built Environment Sector in Delivering Green Cities and a Green Economy. *Sustainability*, 7(7), 9417–9443. https://doi.org.10.3390/su7079417

Pociovălișteanu, D. M., Novo-Corti, I., Aceleanu, M. I., Șerban, A. C., & Grecu, E. (2015). Employment Policies for a Green Economy at the European Union Level. Sustainability, Vol. 7, No. 7, 9231–9250. https://doi.org/10.3390/su7079231

Porfiriev, B. N. (2012). «Zelenaia» ekonomika: obshchemirovye tendentsii razvitiia i perspektivy [Green Economy: Global Development Trends and Prospects]. *Vestnik Rossiiskoi akademii nauk [Bulletin of the Russian Academy of Sciences]*. 82(4), 323–332. https://doi.org/10.15826/vestnik.2018.17.1.006 [in Russian].

Strategiia Kazahstan–2050 [Strategy Kazakhstan-2050] (2012). *Novyi politicheskii kurs sostoiavshegosia gosudarstva [New political course of the established state]*. IPS Adilet. Retrieved from https://adilet.zan.kz/rus/docs/K1200002050/links [in Russian].

Stroebel M. (2015). Tourism and the Green Economy: Inspiring or Averting Change? Third World Quarterly. 36(12), 225–2243. https://doi.org.10.1080/09669582.2019.1666858

United Nations Department of Economic and Social Affairs. (2012). A guidebook to the Green Economy. *Issue 1: Green Economy, Green Growth, and Low-Carbon Development – history, definitions and a guide to recent publications.*UNDESA. Retrieved from https: //sustainabledevelopment.un.org/content/documents/GE%20Guidebook.

United Nations Environment Programme (2009). *Green Economy Initiative.Sustainable Consumption and Production.* UNEP. Retrieved from https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy

United Nations Environment Programme (2011). Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. UNEP. Retrieved from http://www.un.org/ru/development/sustainable/ger_synthesis

United Nations (2011). *The green economy: trade and sustainable development implication.* UN. Retrieved from http: //unctad.org/en/docs/ditcted20102en

United Nations Environment Programme (2012). *ICC comments on the UNEP draft Green Economy Report.* UNEP. Retrieved from https://cdn.iccwbo.org/content/uploads/sites/3/2011/05/ICC-comments-on-the-UNEP-draft-Green-Economy-Report

Yang, J., Zhang, F., Jiang, X., Sun, W. (2015). Strategic Flexibility, Green Management, and Firm Competitiveness in an Emerging Economy. *Technological Forecasting and Social Change.* 101, 347–356. http://dx.doi.org/10.1016/j.techfore.2015.09.016

Zakharova, T.V. (2011). «Zelenaia» ekonomika kak novyi kurs razvitiia: globalnyi i regionalnyi aspekty [Economy as a New Course of Development: Global and Regional Aspects]. *Vestnik Tomskogo gosudarstvennogo universiteta. Seriia ekonomika i upravlenie [Tomsk State University Journal of Economics]*. 4 (16), 28–38. https://doi.org/10.15826/vestnik.2018.17.1.006 [in Russian].

DOI 10.31489/2022Ec4/67-73
JEL: J01, J08
UDC: 331.29

L. Kurmangaliyeva[1*] E. Aimagambetov[2], B. Jazykbayeva[3], Z. Kapelyuk[4]

[1,2,3]Karaganda University of Kazpotrebsoyuz, Kazakhstan
[4]Siberian University of Consumer Cooperation, Russia
[1]lyazat2013@mail.ru, [2]rector@keu.ru, [3]baldirgan_keu@mail.ru, [4]zkapelyuk@inbox.ru

[1]https://orcid.org/0000-0001-8419-7952,
[2]https://orcid.org/0000-0003-4590-8242,
[3]https://orcid.org/0000-0003-0738-2526,
[4]https://orcid.org/0000-0002-5503-8570

[2]Scopus ID: 57193844919,
[3]Scopus ID: 57216712120,
[4]Scopus ID: 57208474076

Labor income trends in Kazakhstan

Abstract

Object: To research the labor income of the population in the Republic of Kazakhstanin the context of the growth and development of the country's economy.The Subject of the Study is the employment trends in the labor market of Kazakhstan, along with the regulations that have been developed to manifest economic transformation.

Methods: The researcher conducted immersive empirical research from peer-reviewed sources, using comparative and component analysis.

Findings: The labor trend of Kazakhstan can be categorized into four stages that illustrate each major transformation in the labor market.

Conclusions: The current state of Kazakhstan's labor market has been influenced by many factors, including structural changes, market conditions, economic dynamics, information technology and the COVID-19 epidemic. The authors identified four main trends throughout the article in terms of labor income. At the first stage of the development of the Kazakh labor market, there were no relevant legislative guidelines; the second stage included the creation of a legal framework. The third and fourth stages are focused on improving the current labor legislation.

Keywords: employment, Labor, shadow economy, Gross Domestic Product (GDP), Kazakhstan's labor market, Information Technology (IT).

Introduction

The onset of the COVID-19 pandemic has imparted adverse effects on the global economy, Kazakhstan included. The last global economic recession took place in 2009, and it caused the world's gross domestic product to decrease by an aggregate of 2.3% (Mussayeva, Vishnevskaya, 2022). Nonetheless, the impact of the Coronavirus on the global gross domestic product was more detrimental as it plummeted by 3.5% (Zayed et al., 2020). The COVID-19 pandemic negatively affected the social and economic facets and forced businesses to shut down indefinitely. Global trade declined, and people were restricted from traveling. Therefore, many enterprises had to retrench their employees to reduce operational costs and keep their businesses alive, increasing the global unemployment rate.

Unemployment in Kazakhstan increased by 11%, and the people who lost their jobs at this time were placed under a new category of "temporarily unemployed". The 11% increase in unemployment translates to more than nine hundred thousand jobs (Mussayeva, Vishnevskaya, 2022). As a result, the economic productivity in Kazakhstan decreased considerably, which increased poverty by 14% (Aktymbayeva et al., 2021). However, the economic growth of Kazakhstan is recovering steadily and is projected to improve further as the temporarily unemployed people return to their jobs. Therefore, this research article aims to unveil the trends in the labor market of Kazakhstan.

Literature Review

Human capital is the most imperative type of capital in any community. Therefore, national governments must measure human capital to facilitate their countries' consistent growth and development. Understanding all the underlying factors that affect human capital, such as age, educational attainment, gender, profession, and other economic activities, is necessary to manifest favorable sustainable development goals.

* Corresponding author. E-mail address: *lyazat2013@mail.ru*

The sustainable development of a country is only possible when all the citizens of a country are empowered to exercise their human rights. The ultimate path towards achieving sustainable development in countries is for national governments to create favorable working environments and promote economic development.

The national government of Kazakhstan has done a commendable task as regards the country's sustainable growth and development. Kazakhstan is classified as an upper-middle-income earning country with a high potential for further development. The first years after Kazakhstan became a sovereign country were tough because there was a high emigration rate, high mortality, and a high fertility gap. Between the 90s and early 2000s, there was high external migration from Kazakhstan, which saw the movement of more than two million people (Kapyshev, 2021). Most of the people who emigrated from this country during this particular period were educated, which meant that Kazakhstan experienced a significant reduction in its workforce (Kapyshev, 2021). However, the national government of this country has managed to improve the living conditions in the country, and the levels of emigration have reduced significantly, especially in the last five years.

The per capita income in the country increased significantly between the years 2013 to 2017 (Bokayev et al., 2020). Nonetheless, the gap between the rich and the poor in Kazakhstan is high. Poverty is higher in the rural areas of Kazakhstan because they have less economic productivity. As it can be seen in Figure 1, there is a high rate of unemployment in rural areas. Furthermore, the few employed people in rural areas are paid low wages.

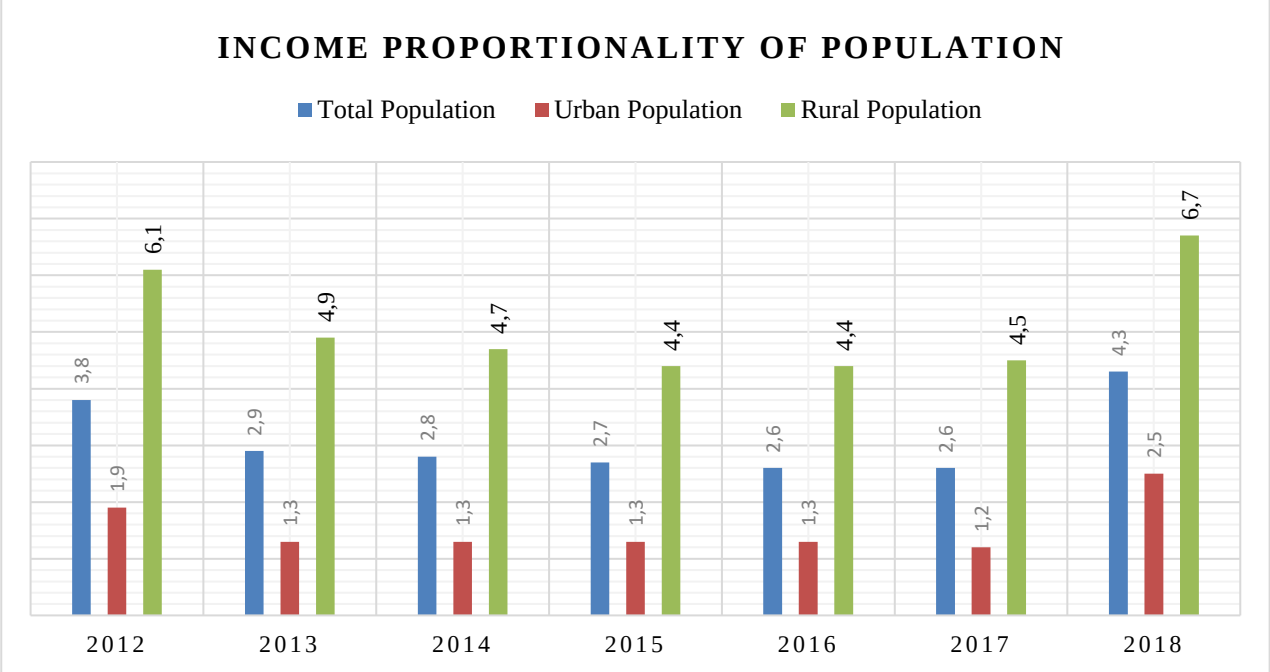


Figure 1. Income proportionality of population below the subsistence level (rural versus urban population).

Note: UNFPA Kazakhstan (2019)

Since independence, the high mortality rate in Kazakhstan is often caused by crime. There is a relatively high-income disparity in Kazakhstan, which is the leading cause of tension between the rich and the poor in the country. Moreover, the immense income disparity in this country contributes to low birth expectancy and the death of babies under five (Aimbetova et al., 2022). It is rather unfortunate that such intricacies are only present for the poor citizens of Kazakhstan in rural areas that lack basic amenities, such as clean drinking water. The fertility gap in Kazakhstan is favorable, which is why the country's population is increasing at a remarkable rate, as the country currently has more than 18 million people (Gaisina, Kaidarova, 2017).

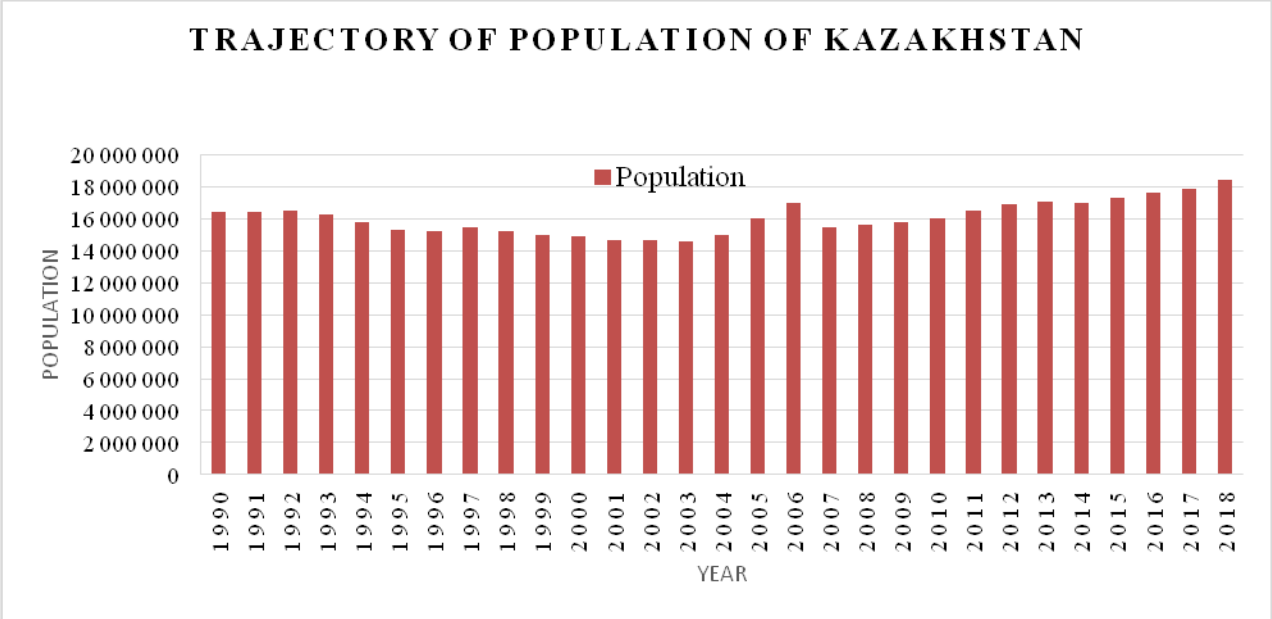


Figure 2. Trajectory of Population of Kazakhstan

Note: the Author's calculation is based on data collected from the Statistical Committee(ASPR, 2020)

Figure 2 above demonstares imperative data to note that the labor market is dynamic, and changes in labor trends in countries are affected by several factors. One of the most significant factors is a change in age and birth rates. In most cases, the working population comprises the young because they are energetic. However, the working population in most countries around the world is aging, and hence the workforce of these countries continues to shrink. Kazakhstan has a relatively high population of people that fit within the country's workforce. According to (ASPR, 2020), approximately seventy percent of Kazakhstan's people are between fifteen and sixty-five years old. Furthermore, the birth rates in Kazakhstan continue to increase steadily, increasing the aggregate number of young citizens in the country. Therefore, Kazakhstan has a relatively promising workforce, and there will be no need to import labor from other countries, as is the current situation in a country like Japan (Matanle, 2018).

Change in workforces in countries has been affected by the rise in global interactions where employees have been empowered to seek employment abroad. Technology has turned the world into a global village where one can seek a job in country miles away and even migrate to that country. For instance, Germany highly encourages professional migrants from other countries to help compensate for the rapidly shrinking workforce in the country (Festing, Harsch, 2018). Therefore, national governments that cannot secure employment for their citizens may suffer from brain drain as most intelligent citizens seek greener pastures in other countries.

The constant improvement of technology has created a digital economy that has altered how companies view talent acquisition. IT milestones, such as using big data, have helped companies focus on higher productivity and efficiency (Guarda et al., 2021). Information technology has changed the way companies strategize and acquire talent fit for their workforce. As a result, some redundant work functions have been delegated to robots and computers. Not only robots and computers are better than humans because they automate processes but also because they do not make any errors or get tired.

Methods

The researcher conducted empirical research to understand Kazakhstan's labor and population trends. The researcher used the keywords "population trends in Kazakhstan" and "labor trends in Kazakhstan". Most publications utilized in the research were peer reviewed and were strictly sought in Google Scholar. Data collected in the research was from reliable sources, and the researcher applied an integrated approach to collect and analyze the data. The methods of data collection and analysis that were utilized include: comparative analysis and component analysis. Comparative analysis was necessary to indicate the performance of Kazakhstan as compared to other countries. This information was relevant in illustrating how well Kazakhstan ranks as compared to global labor statistics. Component analysis was necessary for this research because it helps to illuminate each of the factors that affect labor trends in the case of Kazakhstan.

Results

The labor trend in Kazakhstan could be summarized into three stages as illustrated:

Stage One: 1991-1998 change of labor trends in a transitional economy;

Stage Two: 1999-2008 change of labor trends in the state of economic recovery and its subsequent growth;

Stage Three: 2009-2019 change of labor trends in an economic recession;

Stage Four: change of labor trends in the condition of the global economic crisis caused by the spread of the Coronavirus pandemic.

After a comparative study of the conditions in labor markets of Kazakhstan and foreign countries, it became apparent that workforce reduction occurred in all countries. Therefore, Kazakhstan did not perform poorly as compared to other countries worldwide. The Coronavirus altered labor trends as one out of five employees were compelled to work from home because of the lockdown in countries worldwide. Kazakhstan adopted the concept of remote working, as roughly 50% of the employees in the country were instructed to work from home (Díaz-Soloaga & Díaz-Soloaga, 2022).

One sector, as it mentioned in Figure 3, that employs a considerable number of citizens of Kazakhstan and yet is overlooked is agriculture because the number of people it employs is reducing over the years instead of increasing. In 2019, 14.86% of people in employment belonged to the agricultural sector compared to 2009 (Statista, 2022). The government of Kazakhstan speculates that investing in agriculture will help to reduce unemployment, which is why it has invested in digitizing agriculture via the implementation of precision farming (Abdullaev et al., 2020). People in rural areas will benefit the most from improved agriculture because there is a high endowment of land resources and an unutilized pool of human capital.

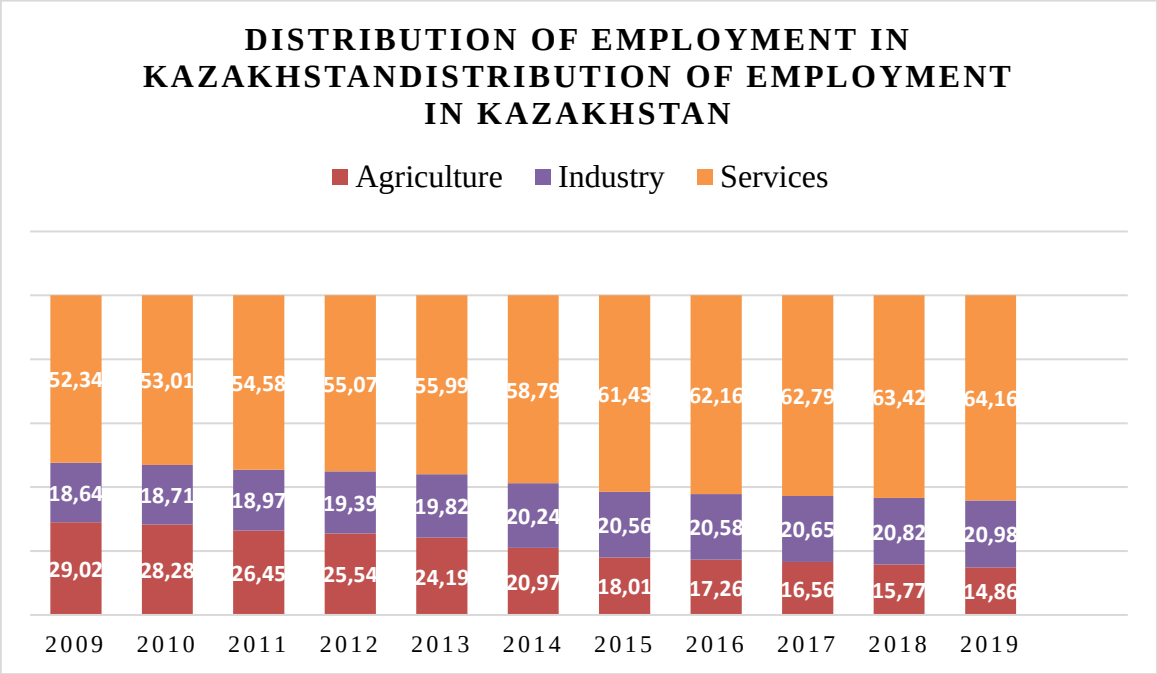


Figure 3. The distribution of employment in Kazakhstan according to economic sectors.

Note: Statista. Calculation of agriculture, industry and services employment (2022).

Discussions

As illustrated above, Kazakhstan's labor market has undergone many transformation stages. In this section, we will critically analyze each of the stages.

Stage One: 1991-1998. This stage was full of uncertainty as Kazakhstani nationals were radicalized, and so were the reforms at the time. A massive workforce reduction caused by an overall decrease in productivity commenced after corporatization and privatization of government property. During this stage, the government of Kazakhstan was still finding ground by building state infrastructure, legislating, and catering to the economy in general. Consequently, the government cared only about the workforce it dealt with and overlooked people working in low-rated services, forming underground economies free from government intervention. The intricacy of employment and pursuit of market equilibrium led to the creation of the labor

exchange. The labor exchange was made up of two institutions the employment promotion fund and the state employment service (Daulieva et al., 2021).

Be it as it may, the employment crisis in Kazakhstan deteriorated at this stage as the country had an unstable financial and credit system, leading to an upsurge in non-payments. During this period, the gross domestic product reduced by 31%, and the inflation rate reached three and four digits (Gaisina, Kaidarova, 2017). The yearly consumer price inflation levels were above 100% until the situation upgraded in 1996. The economic growth of Kazakhstan began improving after the implementation of presidential executive orders that guided the development of entrepreneurship in the country.

Stage Two: 1999-2008. The beginning of this period was somewhat challenging because, in 1999, the labor exchange was liquidated, leading to a peak in employment that reached 13.5%. Also, liquidating this institution led to the halt of unemployment benefits. As if not enough, the labor market had become decentralized, most of whom took over and coordinated their affairs rather poorly. The government intervened to improve the situation by increasing the right and jurisdiction of private employers, and this occurrence marked the transition of Kazakhstan from a planned to a market economy (Korgan et al., 2019). In the fiscal year 2001-2002, the United States and European Union officially recognized Kazakhstan as a market economy. Kazakhstan was the first CIS country to receive this type of recognition. The labor laws of Kazakhstan improved further during this stage as it was when the new law of employment of the population and the labor code was introduced to the Republic of Kazakhstan. Between 2007 and 2008, there was a global economic crisis, and Kazakhstan was affected like all other nations. By 2008 the unemployment rate had reduced to 7.3%, including the unemployment caused by the economic crisis.

Stage Three: 2009-2019. This period reduced economic growth caused by increased employment in the shadow economy. Therefore, the growth of the underground economy means that the national government misses out on collecting taxes, yet it was necessary to promote further growth and development of Kazakhstan. In 2011 the “Employment 2020 Roadmap Program” was introduced (Jusibalieva et al., 2020). Its role was to resolve employment intricacies that faced specific demographics based on gender, age, disability status, growth of the shadow economy, and increased immigration from Uzbekistan and Kyrgyzstan. Also, at this particular stage, the role of IT proved essential as it accommodated the possibilities of remote working.

Stage Four: from 2020 to the present. An epidemiological complication caused the period of a global crisis through the spread of the COVID-19 pandemic. The GDP of Kazakhstan decreased by 1.8% in the first six months; the service sector plummeted by 5.6% percent (Mussayeva, Vishnevskaya, 2022). The labor scenario changed because more than half of the business enterprises in the country switched to remote working. The national government introduced the “Employment Roadmap 2025”, which will create up to 130,000 jobs in 6,500 projects (BR2025, 2022). In 2020, the global unemployment rate increased to 6.5% from 5.4% in the previous year. Kazakhstan performed reasonably well as the increase in unemployment at this period only increased by 0.1%, from 4.8% to 4.9% (Mussayeva & Vishnevskaya, 2022).

Conclusions

Kazakhstan's pursuit of improving its economy's employment needs meets the requisite threshold that constitutes a market economy. The present state of Kazakhstan's labor market has been influenced by a myriad of factors, including structural alterations, market conditions, economic dynamics, information technology, and the COVID-19 epidemic. The authors identified four main trends throughout the article in terms of labor income. The first stage of Kazakhstan's labor market lacked relevant legislative guidelines; the second stage involved the creation of a legal framework. The third and fourth stages focus on improving the labor laws in place. There is a favorable balance between the rate of population increase in Kazakhstan and the increase in job opportunities in the country. Therefore, if all factors are constant, the trajectory of employability in this country is promising, and it is only a matter of time before Kazakhstan achieves its sustainable growth and development goals.

References

Abdullaev, K., Irmulatov, B., Komarov, A., & Nugis, E. (2020). Precision agriculture in the North of Kazakhstan. *Journal of Agricultural Science, 2(31),* 115–121. Retrieved from https://agrt.emu.ee/pdf/2020_2_abdullaev.pdf.

Aimbetova, G., Dossybayeva, G., Suleimenova, R., Turgambayeva, A., & Turgambayeva, A. (2022). Life Expectancy as a Quality of Life Indicator. Iranian Journal of Public Health, 51(5), 1195. Retrieved from https://doi.org/10.18502/ijph.v51i5.9442.

Aktymbayeva, B., Koshkimbayeva, U., Abisheva, Z., Tokbergenova, U., & Tumazhanova, M. (2021). Tourism Industry Development and Governance: A Comparative Stage Review of Kazakhstan’s Experience for the Years of Inde-

pendence, 1991-2020. GeoJournal of Tourism & Geosites, 34(1), 69-76. Retrieved from http://gtg.webhost.uoradea.ro/PDF/GTG-1-2021/gtg.34110-621.pdf.
ASPR (2020). Stat.gov.kz. https://stat.gov.kz/kazstat?lang=en.
Bokayev, B., Ismailova, R., & Torebekova, Z. (2020). Affecting International Migration Trends through a Multi-Faceted Policy: Kazakhstan within Central Asia and the EAEU. Studia Politica: Romanian Political Science Review, 20(2), 223-243. Retrieved from https://repository.apa.kz/bitstream/handle/123456789/311/2020_2_Studia-politica%20%281%29%20%281%29.pdf?sequence=2&isAllowed=y.
BR2025 (2022). «Business Roadmap 2025» State Program for Entrepreneurs Support. Retrieved from https://baiterek.gov.kz/en/programs/gosudarstvennaya-programma-podderzhki-i-razvitiya-biznesa-dorozhnaya-karta-biznesa-2025.
Daulieva, G., Islamoglu, M., & Yeralieva, A. (2021). Government Administration of the Digital Economy in the Republic of Kazakhstan. Kazakhstan-Spectrum. 100. 96-109. 10.52536/2415-8216.2021-4.07.
Díaz-Soloaga, P., & Díaz-Soloaga, A. (2022). Forced telecommuting during the COVID-19 lockdown: The impact on corporate culture in Spain and Kazakhstan. Corporate Communications: An International Journal, ahead-of-print. https://doi.org/10.1108/CCIJ-02-2022-0018.
Festing, M., & Harsch, K. (2018). Macro talent management in Germany: A strong economy facing the challenges of a shrinking labor force. In Macro Talent Management. 1th edition. 101–122. Routledge.https://www.taylorfrancis.com/chapters/edit/10.4324/9781315200200-5/macro-talent-management-germany-marion-festing-katharina-harsch.
Gaisina, S., & Kaidarova, L. (2017). Financial literacy of rural population as a determinant of saving behavior in Kazakhstan. Rural Sustainability Research, 38(333), 32–42.
Guarda, T., Balseca, J., García, K., González, J., Yagual, F., & Castillo-Beltran, H. (2021). Digital transformation trends and innovation. 1099(1), 012062. Retrieved from https://iopscience.iop.org/article/10.1088/1757-899X/1099/1/012062.
Jusibalieva, A., Akhmetova, G., Saubetova, B., & Baykadamov, N. (2020). State support and regulation of entrepreneurship as factors of employment development. Central Asian Economic Review, 1, 8–21. Retrieved from https://caer.narxoz.kz/jour/article/view/77?locale=en_US.
Kapyshev, A. (2021). Brain drain in Kazakhstan: Reasons and Consequences. «Push factors affecting emigration from Kazakhstan». Retrieved from http://repository.kazguu.kz/handle/123456789/1007.
Korgan, B., Sabirova, R., & Adietova, E. (2019). The innovative economy of Kazakhstan. News of the National Academy of Sciences of the Republic of Kazakhstan. Series of Social and Human Sciences. 4(326), 123-130. Retrieved from https://tou.edu.kz/arm/storage/files/60cc542d5c00d5.70980038.pdf.
Matanle, P. (2018). Depopulation Dividend for a Shrinking Japan. AsiaGlobal Online, 5.https://www.asiaglobalonline.hku.hk/depopulation-japan-aging-sustainability/.
Mussayeva, G., & Vishnevskaya, N. (2022). Labor market of the Republic of Kazakhstan: Transformation Stages and Current State. 293–299. Retrieved from https://doi.org/10.2991/assehr.k.220208.052.
Statista (2022). Kazakhstan—Employment by economic sector. Statista. Retrieved from https://www.statista.com/statistics/436296/employment-by-economic-sector-in-kazakhstan/.
UNFPA Kazakhstan (2019). UNFPA_FullReport_Eng_Final_0.pdf. https://kazakhstan.unfpa.org/sites/default/files/pub-pdf/UNFPA_FullReport_Eng_Final_0.pdf.
Zayed, N.M., Islam, K.A., & Raisa, T.S. (2020). Emerging Strategies and Economic Impact of Covid-19: A Case Study of Gulf Cooperation Council Countries (GCC). Academy of Strategic Management Journal.1(20).

Л.А. Курмангалиева, Е.Б. Аймағамбетов, Б.К. Джазықбаева, З.А. Капелюк

Қазақстандағы еңбек табыстарының тенденциялары

Аңдатпа

Мақсаты: Ел экономикасының өсуі мен дамуы тұрғысынан Қазақстан Республикасы халқының еңбек табыстарын зерттеу. Зерттеу нысаны Қазақстанның еңбек нарығындағы жұмыспен қамту тенденциялары, сондай-ақ экономикалық өзгерістерді көрсету үшін әзірленген нормативтік актілер.

Әдістері: Зерттеушілер салыстырмалы және компоненттік талдауды қолдана отырып, рецензияланған көздерде ниммерсивті эмпирикалық зерттеу жүргізді.

Нәтижелері: Қазақстанның еңбек үрдісін еңбек нарығындағы әрбір ірі трансформацияны бейнелейтін төрт кезеңге бөлуге болады.

Тұжырымдар: Қазақстанның еңбек нарығының қазіргі жағдайына құрылымдық өзгерістер, нарықтық жағдайлар, экономикалық динамика, ақпараттық технологиялар және COVID-19 эпидемиясы сияқты көптеген факторлар әсер етті. Авторлар еңбек кірісі тұрғысынан мақалада төрт негізгі тенденцияны анықтады. Қазақстандық еңбек нарығын дамытудың бірінші кезеңінде тиісті заңнамалық бағдарлар болмады; екінші кезең құқықтық базаны құруды қамтыды. Үшінші және төртінші кезеңдер қолданыстағы еңбек заңнамасын жетілдіруге бағытталған.

Кілт сөздер: еңбекпен қамту, еңбек, көлеңкелі экономика, жалпы ішкі өнім (ЖІӨ), Қазақстанның еңбек нарығы, ақпараттық технологиялар (I.T).

Л.А. Курмангалиева, Е.Б. Аймагамбетов, Б.К. Джазыкбаева, З.А. Капелюк

Тенденции трудовых доходов в Казахстане

Аннотация:

Цель: Исследование трудовых доходов населения Республики Казахстан в контексте роста и развития экономики страны. Предметом исследования являются тенденции занятости на рынке труда Казахстана, а также нормативные акты, которые были разработаны для проявления экономических преобразований.

Методы: Исследователи провели иммерсивное эмпирическое исследование из рецензируемых источников, используя сравнительный и компонентный анализ.

Результаты: Трудовую тенденцию Казахстана можно разделить на четыре этапа, которые иллюстрируют каждую крупную трансформацию на рынке труда.

Выводы: На нынешнее состояние рынка труда Казахстана повлияло множество факторов, включая структурные изменения, рыночные условия, экономическую динамику, информационные технологии и эпидемию COVID–19. Авторы выделили четыре основные тенденции на протяжении всей статьи с точки зрения трудовых доходов. На первом этапе развития казахстанского рынка труда отсутствовали соответствующие законодательные ориентиры; второй этап включал создание правовой базы. Третий и четвертый этапы сосредоточены на совершенствовании действующего трудового законодательства.

Ключевые слова: трудоустройство, труд, теневая экономика, валовой внутренний продукт, рынок труда Казахстана, информационные технологии.

DOI 10.31489/2022Ec4/74-84
UDC 339.727.3
JEL G30

O. Borzenko[1*], N.V. Kuznietsova[2]

[1]SI "Institute of economy and forecasting NAS Ukraine", Kyiv, Ukraine
[2] Institute of International Relations Taras Shevchenko National University, Kyiv, Ukraine
slozko2003@ ukr.net, [2] nk@spline.net

[1]https://orcid.org/0000-0002-1017-5942, [2] https://orcid.org/0000-0002-6812-7409

[1]Scopus Author ID: 57208315150, [2]Researcher ID: 0782819

Analysis of current trends in the development of the syndicated loans market in the world and in Ukraine

Abstract.

Object: The main purpose of the paper is to study the essence and role of syndicated lending in the world economy, to identify changes in this process associated with the Covid-19 pandemic, and also to study the particularities of syndicated lending in Ukraine and to determine the role of Ukrainian companies in this market. The object of the study is the processes of international syndicated lending as one of the most important instruments of financing the activities of major companies and the use of the international experience to enhance the ability of Ukrainian enterprises to attract additional financial resources in the international capital markets.

Methods: During the study of syndicated lending development on the global scale and in the Ukrainian market the authors used methods of mathematical analysis and synthesis based on statistical databases published by international analytical agencies and companies, in particular such monthly analytical reviews as Cbonds Review and Cbonds statistical reference books, as well as Thomson Reuters, Loan Market Association databases, etc. The database of the Ministry of Finance of Ukraine was used to study issues related to the development of syndicated lending in Ukraine.

Findings: The authors studied this market from the perspective of identification of the structure and functions of the key parties to syndicated lending transactions, analyzed the main banks arranging syndicated lending, the main borrowers and the main areas of investment. The article introduces the main disproportions in the development of the global market of the syndicated lending by regions, member countries, major lending banks and corporate debtors. The article presents the analysis of the participation of Ukraine and Ukrainian borrowers in the processes of international syndicated lending. The analysis of particularities of the development and sectoral orientation of the syndicated loans market in Ukraine for the last 20 years was made; the main imbalances in its development were examined. The main stages and their distinctive features of the development of syndicated lending market in Ukraine were distinguished; the dependence of the intensity of syndicated lending and its sectoral orientation on the changes in the macroeconomic indexes of the country was proved.

Conclusions: The article reveals the main disproportions in the development of the world syndicated lending market and its direct dependence on the pace of development of the world economy. The authors defined stages of the development of syndicated lending in Ukraine, their particularities and reasons for the extremely low level of use of this instrument of financing in Ukraine. This paper focuses on the fact that the establishment of an effective system of syndicated lending in Ukraine can help to multiply the potential of the banking system as a whole. Syndicated lending can be used to accumulate the required credit resources, in particular, for large long-term investments in project financing and investment lending.

***Key words*:** international financing, syndicated lending, bank loan, Ukrainian syndicated lending market, managing banks (for the syndicated lending), borrowers, financial long-term investments.

Introduction

Under the current conditions of intensified globalization processes and the development of international financial markets, the mechanism of international syndicated lending is one of the main sources of long-term debt financing for enterprises in economically developed countries. This fact proves that up to 75% of the large investment projects in these countries are financed by banking syndicates, which is due to the possibility for borrowers to attract a larger volume of funds than from a single lender, reducing the cost and time required to arrange credit, and for the lending banks, in turn, the possibility to diversify credit risks. In recent years, the total volume of the syndicated loans is about one-third of the entire international capital market, including issues of bond loans, promissory notes and stocks. The practice of establishing international bank

* Corresponding author. E-mail address: *slozko2003@ ukr.net*

syndicates for lending to investment projects requiring large capital for the long term and risk diversification becomes increasingly popular, and syndicated lending market is seen as the most flexible and large-scale source of capital. The current market of syndicated lending is highly diversified both in terms of the scale of activity of its players and in terms of geography. The analysis of the development of the world syndicated lending market, its dynamics and structure shows a rapid growth in the number and amount of syndicated transactions due to a number of advantages of involvement of this form of financing of large-scale investment projects in many countries of the world.

To make capital investments, Ukrainian companies need to attract a large amount of financing, both in the form of new equity capital and in the form of funds from debt investors. Along with direct investment in the economy, debt capital markets are one of the key mechanisms used by large companies and banks around the world to raise financing for capital investments, modernization of production facilities, refinancing and development strategies implementation. In this regard, the key to Ukraine's stable economic growth will be the access of its companies and enterprises to domestic and foreign sources of long-term financing. Today syndicated lending in Ukrainian sector remains underdeveloped. There are no precedents for the establishment of international syndicates where Ukrainian banks would be participants at the moment, but such establishments may take place in the future for the development of the country. This type of attraction of credit funds can be an effective tool for the development and acceleration of economic processes in Ukraine. In developing countries and in countries with transformation economy there is a limited ability of their national banking systems to long-term lending (while maintaining a high share of bank lending in the structure of investment financing sources), and as a consequence, a shortage of domestic investment resources. The access of Ukrainian companies and enterprises to internal and external sources of long-term debt financing, in particular to the syndicated lending markets, will act as a driving force for further economic development of the country. The problem of insufficient investment and capital investment and, accordingly, the need for additional funding remains extremely urgent for Ukraine. Against this background, it is especially important to develop a mechanism for attracting funding from international capital markets through syndicated lending, which envisages the granting of a large loan to a borrower by a group of banks under a single loan agreement.

Literature Review

The works of such scientific researches and analysts as J. Armstrong, E. Asarnow, S. Dennis, D. Domanski, P. Kugler, M. McAdams, J. Shek and others are devoted to the development of theoretical and practical bases of the international credit market.

Cohen G.J., Friedrichs M., Gupna K., Hayes W., Lee S.J., Marsh W.B, Mislang N., Shaton M.O., Sicilian M. focused their works on the analysis of modern trends and peculiarities of syndicated lending market development in the developed countries (Cohen, G. J. *et al.* 2021). The analysis of the essence, the issue of practice and technology for the provision of syndicated lending, in particular in the markets of the countries with transformation economies are disclosed in the papers of such Ukrainian scientists and economists as O. Rogach, A. Filipenko, L. Kvasnyi, N. Kurdyk, N. Moroz, V. Mishchenko, N. Panteleeva, I. Furman, S. Tsyganov, A.Yanshina and others. In particular, problems of development and particularities of the syndicated lending market in Ukraine and the market of the CIS countries before the Covid-19 pandemic were studied by O. Borzenko, N. Kuznietsova (Kuznietsova, N.V., & Borzenko, O.O., 2017), these issues were addressed in the papers by S. Tsyganov, A. Yanshina (Tsyganov, S.A., & Yanshina, A.M., 2015). Statistical materials on syndicated lending processes are published by a number of international analytical agencies, including such monthly analytical publications as Cbonds Review and statistical reference books of Cbonds, Thomson Reuters and Loan Market Assosiation, etc. At the same time, the issues of development of syndicated lending processes and their particularities under the conditions of the Covid-19 pandemic and after its active phase, particularly in Ukraine, have been insufficiently studied (Kuznietsova, 2018).

Methods

The purpose of the paper is to study the essence and role of syndicated lending in the world economy, to identify changes in this process related to the Covid-19 pandemic, and also to study the particularities of syndicated lending in Ukraine as well as to determine the place of Ukrainian companies in this market. The purpose of the graduation thesis is to study and explain the characteristics of syndicated lending in order to enhance the ability of the domestic economy to attract additional financial resources in the capital markets. The object of the study is the processes of international syndicated lending as one of the most important instruments of financing the activities of major companies in developed and developing countries, as well as

countries with transformation economy. Today, in the context of internationalization of economic life, the growing needs of economic entities in different countries of the world for long-term credit resources are related to the issues of financial support for companies in all sectors of economy.

Results

Syndicated lending is an essential element of international monetary and credit relations. And this fact is confirmed by its significant volumes amounting to USD 3-4.5 trillion annually over the past decades. Let's take a look at the changes in the volume of the global syndicated lending market over the 2010-2020 period in order to understand the scale of the said market (Table 1). Thus, in 2011, the figure was USD 4 trillion, and for the first time since the global financial crisis of 2008-2009 it almost reached the pre-crisis level of the year 2007 in terms of volume of lending. According to Table 1, there is an unstable state of the international syndicated loans market. Thus, there was an increase of USD 1146 billion, or 140.15%, in 2011 compared to 2010, and in 2012 there was a decline of USD 700 billion, or 17.50%. These years represent both the greatest decline and the greatest increase in syndicated lending market over the past decade. The year 2018 showed a historic peak on the threshold of the Covid-19 pandemic with the highest volume of syndicated lending in the world – USD 5.1 trillion, which in turn demonstrated the popularity of syndicated lending as a mechanism for raising significant funds to finance large projects.

Discussions

In 2020, USD 728 billion, or 17% less than in 2019, was raised. Thus, there was a significant reduction in transactions in the syndicated loans market, which was associated with a significant decline in economic growth rates in a number of countries around the world.

Table 1. International Syndicated Lending Market Dynamics, USD billion (2010-2020)

Index	Years										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Global syndicated loans volumes	2854	4000	3300	4206	4482	4315	4010	4570	5100	4491	3496
Note - compiled by the author based sources											

Three sectors can be distinguished among the borrowers of syndicated loans. The corporate sector holds the largest volume of lending with 70% of all loans, followed by the financial sector with 16%, the sovereign sector with 2%, and the remaining 12% comes from other sectors. A significant volume of syndicated lending is directed to the corporate sector due to the processes of mergers and acquisitions both of which have become extremely popular in recent years and require significant financial investments. In turn, the insignificant volume of lending to the sovereign sector is explained by the fact that governments make significant borrowings only when they face hard times and only if the funds allocated to them by international financial and credit institutions are insufficient.

Let's examine the main corporate borrowers and the purpose of attracting financing (Table 2).

Table 2. Top 10 global syndicated loans, 2020

Borrower	State	Amount of credit, USD mln.	Primary purposes
T-Mobile USA Inc	USA	28,500	Acquisition of another business
Airbus SE	Netherlands	16,543.5	Main corporate goals
General Electric Co	USA	15,000	Main corporate goals
Boeing Co	USA	13,825	Main corporate goals
Daimler AG	Netherlands	13,154.4	Main corporate goals
Depository Trust Co	Netherlands	12,800	Main corporate goals
Royal Dutch Shell PLC	USA	12,010.9	Main corporate goals
Walmart Inc	USA	11,810	Main corporate goals
PG&E Corp	USA	10,825	Emergence from bankruptcy
Thermo Fisher Scientific Inc	USA	10,060.3	Acquisition of another business
Note - compiled by the author based on sources			

The major borrower in the syndicated loans market in 2020 was T-Mobile USA Inc, a wireless service provider. The main purpose of this loan was to acquire another business. Another seven companies men-

tioned the main corporate goals of the company as the purpose of syndicated loan (among them are such companies as Airbus SE – aircraft construction company, General Electric Co – manufacture of a large number of equipment, Boeing Co – aircraft construction company, etc.).

The largest banks managing syndicated loans are such banks as J.P. Morgan, BofA Securities Inc, Citigroup Inc., Mizuho Financial Group, Wells Fargo & Co, Mitsubishi UFJ Financial Group, BNP Paribas SA., etc (Table 3). In total, about 60% of all loans are arranged by the 25 largest banks managing syndicated loans in the world. It should be noted, however, that almost one third (32.9%) of all syndicated loans in 2020 were provided by the first five managing banks. Consequently, it may be concluded that the global syndicated loans market is monopolized by a small group of the largest transnational banks of the world. The best global manager in the syndicated loans market is J.P. Morgan, an American financial holding company, this company has long held the first place, although it was second to BofA Securities Inc, an American multinational investment banking company, during the period from 2015 to 2017. They vie for the first place every year. The third place is almost steadily occupied by Citigroup Inc. – one of the largest international financial conglomerates. Over the past 10 years, the list of top managers and their positions have hardly changed. Starting from the 5th place on the list the dynamics of changing places intensifies (Cohen, G. J., *et al.* 2021).

The leading company, J.P. Morgan, has closed deals amounting to USD 274.1 billion, which comprised 9.0% coverage of the entire global syndicated lending market. The second leading manager of the global syndicated lending market, BofA Securities Inc., is almost as good as the top spot (USD 256.6 billion). This company has closed even more deals than J.P. Morgan, and the coverage of the entire market is 8.4%. Starting from the fourth place the market coverage significantly decreases, the share of banks does not exceed 4%, and the share of banks from the last group of five in the list is determined at the level of 2%.

The share of each bank arranging syndicated lending may vary significantly depending on the region. Thus, J.P. Morgan, Bank of America Merrill Lynch, Wells Fargo & Co, Citi group Inc. and Barclays are leaders in the North American region and this top five had 45% of all granted syndicated loans.

BNP Paribas SA, Barclays, J.P. Morgan, Deutsche Bank AG, HSBC are leaders in the European region with respect to syndicated loans. The list of leading banks in Asia and the Pacific region is a bit different. They are Mizuho Financial Group, Sumitomo Mitsui Banking Corp, Mitsubishi Tokyo Financial Group Inc., Citigroup Inc., HSBC, as well as State Bank of India, Bank of Chine Ltd, Industrial@Comm. Bank Chine, Chine Development Bank. The main managing banks for syndicated loans in Japan in recent years are mainly national banks. For example, the share of such banks as Mizuho Financial Group, Sumitomo Mitsui Banking Corp, Mitsubishi Tokyo Financial Group Inc. and Development Bank of Japan Inc. in the Japanese market is 90.2%.

Table 3. World Top 15 banks arranging syndicated loans, 2020

No.	Bank	Lending volume, USD billion	Market share, %
1	JP Morgan	274.2	9.0
2	BofA Securities Inc	256.7	8.4
3	Citi group Inc.	187.3	6.1
4	Mizuho Financial Group	151.3	4.9
5	Wells Fargo & Co	136.8	4.5
6	Mitsubishi UFJ Financial	127.9	4.2
7	BNP Paribas SA	122.0	4.0
8	Sumitomo Mitsui Finl Grp Inc.	119.1	3.9
9	Barclays	81.3	2.7
10	Bank of China Ltd	78.3	2.6
11	Goldman Sachs & Co	72.0	2.4
12	Deutsche Bank	71.6	2.3
13	HSBC Holdings PLC	68.6	2.2
14	Credit Agricole CIB	65.5	2.1
15	Credit Suisse	61.0	2.0
Note - compiled by the author based on sources			

The regional distribution of syndicated lending in the world (Table 4) shows that the North and South America had USD 1.9 trillion (54.5% of the global syndicated lending) out of USD 3.4 trillion of the total volume of syndicated lending in 2020, while USD 1.7 trillion (50.5% of the global syndicated lending) went to the United States of America; Europe had USD 776 billion (22.2%); Asia and Africa had USD 815 billion

(23,3%), including Japan's share of 7.4%; China and Hong Kong together had a share of 6.1%. In 2020, seven countries – the largest borrowers of syndicated loans (USA, Great Britain, Canada, Japan, Germany, France) received 72% of the total volume of loans granted, which demonstrates a high degree of concentration in the syndicated loans market. At the same time, one can also mention the emergence of certain processes of diversification in the relevant regional market due to a more active participation of borrowers from China.

Table 4. Regional distribution of syndicated lending in the world, 2020

Region	Volume in USD billion	Share of the world index, %
Whole World	3496.5	100
North and South America	1904.8	54.5
Latin America	21.9	0.6
Brazil	3.8	17.4*
Mexico	7.6	36.1*
North America	1881.2	53.8
USA	1749.6	50.1
Canada	131.6	3.8
Africa, Middle East, Central Asia	97.9	2.8
Middle East	65.4	1.9
Saudi Arabia	16.8	17.1*
UAE	32.3	33.0*
Europe	775.8	22.2
Eastern Europe	39.9	5.1*
Western Europe	735.8	94.9*
France	144.2	19.6*
Germany	133.6	18.2*
Great Britain	137.6	18.5*
Asia-Pacific region	460.5	13.2
China	106.8	3.1
Hong Kong	103.5	3.0
Japan	257.5	7.4
**share of the country in this region*		
Note - compiled by the author based on sources		

Let us examine the sectoral distribution of syndicated loans (they almost coincide with the sectoral distribution of syndicated loans in the European region) using the example of North and South America indexes. Thus, 16.85% of the total market of syndicated lending in the American region belong to the industrial sector; 16.50% – to the financial sector; 14.94% – to the fuel and energy industry (these three industries together cover almost 50% of the total market); 7.11% – to the medical sector; 6.75% – consumer goods and services; the remaining 37.85% are distributed among various areas.

The following companies are among those that have attracted the largest volumes of syndicated loans in Europe, the Middle East and Africa over the past 5 years: Bayer AG, Syntegna AG, Shire PI.C, 21st.Centure Fox Inc., Danon SA, Yamal SPG (these companies attracted syndicated loans totaling USD 135.6 billion). Bayer AG, a German company, managed to attract the largest syndicated loan in the amount of USD 56.9 billion among the above mentioned companies. The companies represent such sectors as healthcare (Bayer AG and Shire PI.C), agricultural industry (Syntegna AG), media (21st.Centure Fox Inc.), food industry (Danon SA) and fuel and energy (Yamal SPG).

There are also certain regional differences in terms of the purposes for which syndicated loans are used. In North America and Europe most of the syndicated loans are used for general corporate development purposes and to refinance existing debt. In Japan, most of the funds raised are used to finance working capital.

The analysis of the structure of the global syndicated lending market in terms of its international segment and the ratio of domestic syndicated lending in certain groups of countries appears to be quite interesting. Thus, if the ratio between domestic and international syndicated loans in the ten major borrowing countries is determined, it can be noted that the international segment is in the lead. There is a distinct dominance of the international segment in such countries as the United States, Great Britain, Germany, France and Swit-

zerland, where the share ranges from 52% in the USA to 90% in Switzerland. In such countries as Japan, Canada, India, syndicated lending is implemented mainly through the domestic market.

Let us turn to the syndicated leading market in Ukraine. The processes of syndicated lending in Ukraine have started since 2000 and in comparison with the developed countries of North America and Western Europe they have not yet been sufficiently developed. It is necessary to identify the main stages of the development of syndicated lending market in Ukraine for a complete understanding of the said market. After the collapse of the USSR in the early 1990s and the transition of its former member countries to a new formation and the development of a market economy, syndicated lending was first used as a large-scale mechanism to raise funds for individual companies and the economy as a whole. In the second half of the 1990s, after the introduction of a national currency, relative stabilization in the economy of the country, which included the restraining of inflation, the first agreements on syndicated lending began to appear in Ukraine. The first stage (1995-2000) of the development of Ukrainian syndicated lending market is characterized by the following: extremely low total annual volume of borrowed resources – up to USD 100 million (the lowest index among the countries of Central and Eastern Europe); a small number of deals and an extremely small range of borrowers.

The second stage in the development of syndicated lending market in Ukraine was in 2000-2004. During these years, financial flows to Ukraine through syndicated lending increased significantly against the background of general economic stability and reached USD 450 million in 2000 and 2004 (Table 5). These actions were intensified against the background of significant national GDP growth rate. The average GDP growth rate in Ukraine for the second stage was 8.3%. In 2000-2004, a significant number of Ukrainian banks entered international loan markets for the first time.

The third stage of the development of Ukrainian syndicated loans market (2005-2008) was characterized by an extremely high increase in the volume of syndicated loans in Ukraine on the background of high GDP growth rate. The main borrowers of syndicated loans in Ukrainian market during this stage were mainly Ukrainian banks. Thus, in 2005, 12 out of 22 syndicated lending borrowed in Ukraine were received by commercial banks, in 2006 – 21 out of 37 loans, in 2007 – 41 out of 56 loans.

Table 5. GDP and volumes of syndicated loans in Ukraine, 2000-2020

Year	GDP, USD billion	GDP, % growth rate	Syndicated lending in Ukraine, USD million	Syndicated lending in Ukraine, in % compared to the previous year
2000	32.3	5.9	450	-
2001	39.3	9.2	100	-77.3
2002	43.9	5.3	100	0
2003	52.0	9.5	150	150.0
2004	67.2	11.7	450	300.0
2005	89.2	3.1	1800	400.0
2006	111.9	7.6	2750	153.8
2007	148.7	8.2	6900	250.9
2008	188.2	2.2	2600	-62.3
2009	121.5	- 15.1	600	-76.9
2010	136.0	0.3	170	-71.7
2011	163.2	5.4	2750	1617.3
2012	175.7	0.2	1900	-30.9
2013	179.5	- 0.03	2000	105.3
2014	132.3	- 6.5	500	-75.0
2015	90.5	- 9.8	790	158.0
2016	93.3	2.9	600	-24.1
2017	122.2	20.34	0	-
2018	130.8	16.68	0	-
2019	153.8	17.6	80	-
2020	155.5	1.2	-	-
2021	200.0	28.4	376,0	-
Note - compiled by the author based on sources				

At the same time, in 2005 large industrial enterprises of the country and enterprises in the field of mobile communications began to actively enter international loan markets. Among them are Alchevsk Metallurgical Complex (with USD 350 million of borrowings), Kyivstar mobile communications company (USD 150 million), Azovstal industrial enterprises (USD 100 million) and Industrial Union of Donbass (USD 85 million). In 2005 syndicated lending in Ukraine amounted to USD 1.8 billion in total. This index exceeded the limit of USD 1 billion for the first time, and in 2006 it amounted to USD 2.750 billion.

In 2007, syndicated lending in Ukraine reached its peak with a total volume of USD 6.9 billion against the background of the dynamic development of international financial markets and high rates of economic growth, which was observed in Ukraine (Table 5). 56 agreements were concluded during this year. The vast majority of borrowers were still represented by the banking sector (41 deals were closed for lending to domestic banks, which amounted to more than 73% of all the loans). Key banks that arranged syndicated loans in Ukraine were the major Western banks – BNP Paribas, Barclays Capital, Deutsche Bank, Bayern LB, ABN AMRO, ING Wholesale Banking, HSBC. This is due to obvious reasons: foreign banks have many years of experience in syndicated lending and are able to attract more financial resources than Ukrainian banks. The total amount of loans provided by them amounted to 90% of the entire Ukrainian market of syndicated lending.

At that period, a characteristic feature of syndicated lending agreements of Ukrainian banking system was their insignificant and short-term nature. The average size of the loan that Ukrainian banks received during the third stage was rather small, with the average deal amounting to USD 85 million. The period from 2005 to 2008 is characterized by the entry of small Ukrainian banks to the international syndicated lending markets (group II according to the amount of total assets according to the NBU classification). This group includes such banks as Dongorbank (USD 5 million in loans), Industrial bank (USD 20 million), Credit-Dnepr (USD 14 million), etc.

During this period, the largest deals were made in the real sector of Ukraine's economy. According to the volume of attracted loans, the following sectors were marked: iron and steel industry, communications and telecommunications, oil, gas and transport industry, food industry. Loans were granted to such industrial and transport companies as Metinvest (USD 1,500.00 million), Ukrainization (USD 550 million), System Capital Management (USD 545 million), etc.

Banking institutions remained in the first place by the number of deals during the third stage (2005-2008) in the syndicated lending market. Other industries, where syndicated loans were directed, were represented by 1-2 companies. Thus, the sector of iron and steel was represented by Metinvest Holding; the mining industry – Interpipe Ukraine, Ferrexpo; the financial sector – System Capital Management; transport, communications and telecommunications – Ukrainian Radio Systems, Ukrainization; agricultural and industrial complex – Grain Trading Company.

The fourth stage in the history of the development of syndicated lending market in Ukraine (2009-2013) is associated with the economic recovery of world economy against the background of the stagnation of the Ukrainian economy during these years (Table 5). In 2009, the volume of syndicated loans raised in Ukraine amounted to only USD 600 million. The structure of borrowers in the Ukrainian market of syndicated lending faced a sharp reduction in the number of commercial banks-borrowers: in 2007 16 banks were the borrowers of syndicated leading, in 2009 there were only 2 banks. During 2011-2014 none of the Ukrainian banks raised syndicated leading. The market of syndicated lending has gradually redirected to the real sector of the Ukrainian economy. During this period, borrowings were made mainly by enterprises of the iron and steel industry and the food industry. The largest loans were received by the agricultural industry and food industry (Kernel Trade, Nibulon, Ukrlandfarming, Creative Group, Ferrexpo AG), the mining industry (DTEK), and the iron and steel industry (Metinvest). Thus, in 2015 Ukrainian agricultural holding Ukrlandfarming received a syndicated lending for 5 years in the amount of USD 600 million at a Libor +8 rate; Ferrexpo AG – USD 420 million at a Libor +2.5 rate; Metinvest mining and metallurgical complex – USD 1 billion at a Libor +3% rate also for a five-year period.

Since 2010, banking institutions have no longer been the main borrowers of syndicated lending. Therefore, with a general decrease in the number of syndicated loans granted to Ukrainian borrowers, in 2010 only 1 loan out of 4 loans granted was for the banking sector, and in 2011, 2012, 2014, as it was stated earlier, Ukrainian banks did not participate in this process at all. There are several reasons for the reduced activity of Ukrainian commercial banks in borrowing syndicated loans: accumulation of large amounts of unpaid and problem loans in the Ukrainian banking system, restructuring of the current debt of banks, decline of trust in the banking system in the domestic market and, as a result, increased credit risks. Debts of Ukrainian banks

were born during the economic growth in Ukraine, and had to be repaid under the conditions of low liquidity, profitability and reduced business activity. A number of banks that defaulted at the time were unable to fully repay their syndicated loans.

In 2009-2013 there were changes in the structure of banks providing syndicated loans in Ukraine. Five largest banks providing syndicated loans are: ING Bank (23% of all loans granted), UniCredit Bank AG (20%), Sberbank of Russia (9%), Gazprombank (9%), Deutsche Bank (8%). In 2012, such three Russian banks as Sberbank of Russia, VTB Bank and Gazprombank (a total of 24% of the syndicated loans granted) appear in the list of top ten managing banks. The share of other banks was 5-6%.

The fifth stage of the development of syndicated lending market in Ukraine (2014-2016) demonstrates a sharp decrease in the volume of loans granted to Ukrainian enterprises and banking sector of the country, which was associated with increased risks of political and economic nature due to the events in Eastern Ukraine and the annexation of the Crimean Peninsula. The leading positions in the market were still held by foreign managing banks. However, Russian banks almost totally disappear from the group of the key banks arranging syndicated loans. The volume of syndicated loans in these years ranged from USD 500-800 million annually. The share of the Ukrainian syndicated lending market was only 0.01% of the global market. In 2015, there was some increase in the volume of loans granted, but the volume of USD 790 million was the largest in recent years. As for the previous stage, the main loans were directed to the real sector of the economy and the main borrowers were agricultural enterprises – Nibulon Agricultural Enterprise LLC (USD 135 million), Kernel Group LLC (USD 415 million), Myronivsky Hliboproduct PJSC (USD 200 million). One can see that foreign lenders prefer borrowers who have experience in attracting syndicated loans or other types of medium- and long-term international financing.

If to summarize the sectoral distribution of syndicated loans in Ukraine (for the last two stages), the share of individual sectors is as follows: metallurgical industry – 47%, food industry – 26%, energy – 11%, agricultural sector – 10%, banking industry – 4%, other industries – 2%. In 2016, only one Ukrainian company was able to attract a syndicated loan – Kernel Agro-Industrial Group raised financing in the amount of USD 65 million. The loan was used to expand production capacity for processing grain and oilseed crops. The increase in agricultural production has had a direct impact on the country's export dynamics. It should be noted that the agricultural sector of the country has recently been developing with an accelerated pace and most investors and creditors consider this sector to be the most promising for the country's economy.

The sixth stage (2017 - 2021) in the development of syndicated lending processes in Ukraine is characterized by almost complete collapse of the process of international financing of Ukrainian banks and enterprises. However, during this period significant structural shifts in the domestic banking market of Ukraine started, the processes of establishing a syndicate of banks for domestic financing headed by the Ukrainian managing bank and consisting of only Ukrainian member banks were developed for the first time. Thus, the State Agency of Automobile Roads of Ukraine has borrowed USD 376 million for 5 years at 4,9% per annum in the domestic market under the state guarantee for the reconstruction and current repair of roads. The state bank “Ukreximbank” acted as the managing bank with a share of 45% of the total volume of syndicated lending project. Six Ukrainian banks have granted the specified amount to Ukravtodor: Ukreximbank (USD 165 million), Oschadbank (USD 150 million), Ukrgasbank (USD 50 million), TAScombank (USD 14 million), Bank Credit Dnepr (USD 13 million), FUIB (USD 10 million).

Conclusions

Summarizing the above, one should say that the process of syndicated lending in Ukraine as a tool to attract additional capital to finance companies is not a widespread and well-developed phenomenon yet. Compared to the USA and Europe, where syndicated lending processes were established dozens of years ago, this financing mechanism has not been sufficiently developed in Ukraine yet. The volume of borrowed funds fluctuates significantly during the period analyzed (2000 - 2021) and it has sharp rises and falls depending on changes in the main macroeconomic indices of the country. In recent years, Ukrainian enterprises have received insignificant foreign currency loans from foreign banks to provide production and export financing of an episodic nature. The global financial crisis of the years 2008-2009, political and economic situation in eastern Ukraine that has been lasting since 2014, and now the war with the Russian Federation have had the most negative impact on the sustainable development of this process. Another factor was the decline of trust in domestic borrowers among foreign investors after the last financial crisis. The market of syndicated loans in Ukraine is represented by a small number of borrowers, mainly representing export-oriented industries, the number of industries involved in the processes of syndicated lending is very small. The banking sector

has hardly received any syndicated loans in recent years due to the accumulation of large amounts of unpaid loans and bad debts, which makes it necessary for them to work on restructuring the current debt (Yanshina, 2008). Under these conditions, there is virtually no Ukrainian market of syndicated lending and it does not perform its main tasks for the economy at the present stage.

The existing credibility gap between the international banking sector and Ukrainian banking institutions and enterprises; prevailing lack of credit histories in the international capital markets among Ukrainian companies; lack of financial reporting according to international standards among the majority of Ukrainian enterprises; insufficient level of transparency and quality of corporate governance; insufficient development of domestic legislation (while there is a lack of uniform documentation on the organization of syndicated lending; lack of secondary market for syndicated loans; insufficient degree of integration of Ukraine into the system of international capital movement in general and into the loan capital market in particular can also be classified as the reasons that restrain the implementation of a full-fledged syndicated lending mechanism in Ukraine.

Syndicated loans can be a powerful source of funding for production companies, as well as the economy as a whole after the end of the war in Ukraine. This leads to the need to develop new approaches to the implementation of international syndicated lending at its various stages, starting with changes in methods used to determine the competitiveness and financial stability of enterprises and financial institutions, the availability of audited accounts prepared according to international standards, the availability of certain credit ratings (S@P, Moody's, Fitch), and ending with the issues of granting collateral and guarantees against syndicated loans, including state guarantees, in accordance with the development priorities of the national economy.

At the same time, the establishment of an effective system for managing syndicated loans in Ukraine will multiply the opportunities both for the post-war reconstruction of the country as a whole, and for enhancing the potential of Ukrainian banking system in particular. The use of the mechanism of syndicated loans will help to accumulate the necessary credit resources for major long-term investments in the economy of Ukraine. It should be noted that the restoration and enhancement of competitiveness of enterprises of the real sector of Ukrainian economy requires and will require increased investment in the restoration of fixed assets and the implementation of new technologies, which will be aimed at improving the competitiveness of products not only in metallurgy and food industry (as mentioned above, the vast majority of syndicated loans allocated to the real sector went to the said industries), but also in relation to enterprises in other industries and sectors of the economy.

References

Cohen, G. J., & Friedrichs, M., & Gupna, K., & Hayes, W., & Lee, S. J. (2018). The Syndicated Loan Market: Matching Data. Finance and Economic Discussion Series (FEDS). Retrieved from: https://www.federalreserve.gov/econres/feds/the-us-syndicated-loan-market-matching-data.htm

Kuznietsova N. V. (2011). Kontrol, liberalizatsia ta reguluvanua ruhu kapitaliv u suchasnomy sviti [Control, liberalization and regulation of the movement of capital in the modern world]. Kyiv: Kyiv university [in Ukrainian].

Kuznietsova, N. V. (2018). Runok sundukovanuch kredutiv v Ukraini: analiz strukturu ta dunamicu rozvutku [The market of international syndicated loans in Ukraine: analysis of the structure and dynamics of development]. Naykovuy visnuk Uzgorodskogo natsionalnogo yniversitety Miznarodni ekonomichni vidnosunu ta svitove gospodarstvo – Science Magazine of Uzhhorod national University International economic relations and world economy , 19/2, 57-62 [in Ukrainian].

Kuznietsova, N. V., & Borzenko, O. O. (2017). International market of syndicated lending: world trends and the state of its development in Ukraine. *Journal of Global Economy Review. Department of Business Administration*, Kozani, Greece, 7, 11-21.

Tsyganov, S. A., & Yanshina, A. M. (2015). Osobluvisty formuvaniy runky sundukovanocho kredutuvania v krainach z transformtsiynoy economikoy [Particularities of the development of syndicated lending market in the countries with transformation economy]. Finansy Ukrainy - Ukrainian Finance Magazine, 8, 11-19 [in Ukrainian].

Yanshina A. M. (2008). Rozvutok sundukovanocho kredutuvania v Ukraini [Development of syndicated lending in Ukraine]. Aktualny problem mignarodnych vidnosyn - Current problems of international relations, Taras Shevchenko National University of Kyiv, Institute of International Relations, 72, 151-158 [in Ukrainian].

Thomson Reuters. Global syndicated loans review. (2021). Retrieved from: http://thesource.refinitiv.9m2021_global_syndicated_loans_review

Loan Market Assosiation. Guide to syndicated loans. (2021). Retrieved from: https://www.lma.eu.com/news-publications/lma-guides

Financial Cbonds Information. Retrieved from: www.loans.cbonds.com

Global Ranking: syndicated loans (2021). Retrieved from: http://loans.cbonds.info/rankings/
European Loan Market -review and outlook. M@G Investments. (2020). Retrieved from: https://www.mandg.com/dam/investments/institutional/shared/en/documents/insights/2020/q1/European-loan-market-review-and-outlook-v2.pdf
Syndicated Loan Market - Technologe Adoption. CRISIL. (2021). Retrieved from: https://content.marketaxess.com/sites/default/files/2021-06/Syndicated-Loan-Markets-Poised-Technology-Adoption-v4.pdf
Official statistics of Ukraine (GDP, syndicated loans). Retrieved from: http://index.minfin.com.ua/index/gdp/
Syndicated loans: statistics of Ukraine//Cbonds. Retrieved from: http://ua.cbonds.info/

Е. Борзенко, Н. В. Кузнецова

Әлемдегі және Украинадағы синдикатталған несиелеу нарығының қазіргі даму тенденцияларын талдау

Аннотация:

Мақсаты: Жұмыстың негізгі мақсаты — әлемдік экономикадағы синдикатталған несиелеудің мәні мен рөлін, COVID-19 пандемиясымен байланысты осы процестегі өзгерістерді, сонымен қатар Украинадағы синдикатталған несиелеу процестерінің даму ерекшеліктерін зерттеу және украиналық компаниялардың осы нарықтағы орнын анықтау. Бұл жұмыстың зерттеу объектісі ірі компаниялардың қызметін қаржыландырудың маңызды құралдарының бірі ретінде халықаралық синдикатталған несиелеу процестері және украиналық кәсіпорындардың халықаралық капитал нарықтарында қосымша қаржы ресурстарын тарту мүмкіндіктерін кеңейту үшін әлемдік тәжірибені пайдалану.

Әдісі: Әлемдік масштабта және Украина нарығында синдикатталған несиелеу процестерінің дамуын зерттеу үшін халықаралық аналитикалық агенттіктер мен компаниялар жариялайтын статистикалық мәліметтер базасына негізделген математикалық талдау және синтез әдістері қолданылды, атап айтқанда Cbonds Review ай сайынғы аналитикалық шолулары және Cbonds агенттігінің статистикалық анықтамалықтары, сондай-ақ Thomson Reuters, Loan Market Assosiation және т.б. Украинада синдикатталған несиелеуді дамытуға байланысты мәселелерді зерттеу үшін Украинаның Қаржы министрлігінің мәліметтер базасы пайдаланылды.

Қорытынды: Авторлар синдикатталған кредиттеу мәмілелерінің негізгі қатысушыларының құрамын анықтау және функцияларын айқындау тұрғысынан осы нарыққа зерттеулер жүргізді, синдикатталған кредиттеуді ұйымдастырушы негізгі банктер, негізгі қарыз алушылар және инвестициялаудың негізгі салалары талданды. Мақалада өңірлер, қатысушы елдер, негізгі кредитор банктер және борышкер компаниялар бойынша синдикатталған кредиттердің әлемдік нарығын дамытудағы негізгі теңгерімсіздіктері ашылған. Сонымен қатар Украина мен украиналық қарыз алушылардың халықаралық синдикатталған несиелеу процестеріне қатысуы зерттелген. Украинадағы синдикатталған несиелер нарығының соңғы 20 жылдағы даму ерекшелігі мен салалық бағытына талдау жасалды, оның дамуындағы негізгі ассиметриялар сараланған. Украинадағы синдикатталған несиелеу нарығының дамуындағы негізгі кезеңдер мен олардың айрықша белгілері айқындалды, синдикатталған несиелеу қарқындылығының және оның салалық бағытының елдің макроэкономикалық көрсеткіштерінің өзгеруіне тәуелділігі дәлелденді.

Тұжырымдама: Мақалада синдикатталған несиелеудің әлемдік нарығын дамытудағы негізгі диспропорциялар және оның әлемдік экономиканың даму қарқынына тікелей тәуелділігі ашылған. Авторлар Украинада синдикатталған несиелеу процестерінің даму кезеңдерін, олардың ерекшеліктерін, Украинада осы қаржыландыру құралын қолданудың өте төмен деңгейіне себеп болған себептерді анықтаған. Мақалада Украинада синдикатталған несиелерді ұйымдастырудың тиімді жүйесін құру тұтастай алғанда банк жүйесінің мүмкіндіктерін бірнеше есе арттыруға ықпал етуі мүмкін екендігіне баса назар аударылған. Синдикатталған несиелерді пайдалану, атап айтқанда, жобалық қаржыландыру мен инвестициялық несиелеу кезінде ірі ұзақ мерзімді инвестицияларды жүзеге асыру үшін қажетті несиелік ресурстарды жинақтауға мүмкіндік береді.

Кілт сөздер: Халықаралық қаржыландыру, синдикатталған несие, банктік қарыз, Украинаның синдикатталған несие нарығы, ұйымдастырушы банктер (синдикатталған несиелер), қарыз алушылар, қаржылық ұзақ мерзімді инвестициялар.

Е. Борзенко, Н.В. Кузнецова

Анализ текущих тенденций развития рынка синдицированного кредитования в мире и в Украине

Аннотация:

Цель: Основной целью работы является изучение сущности и роли синдицированного кредитования в мировой экономике, выявления изменений в данном процессе, связанных с пандемией Covid–19, а также исследование специфики развития процессов синдицированного кредитования в Украине и определение места украинских компаний на данном рынке. Объектом исследования данной работы являются процессы международного

синдицированного кредитования как одного из важнейших инструментов финансирования деятельности крупных компаний и использование мирового опыта для расширения возможностей украинских предприятий привлекать дополнительные финансовые ресурсы на международных рынках капиталов.

Методы: Для исследования развития процессов синдицированного кредитования в мировом масштабе и на рынке Украины использовались методы математического анализа и синтеза на основе баз статистических данных, которые публикуются международными аналитическими агенствами и компаниями, в частности, ежемесячные аналитические обзоры Cbonds Review и статистические справочники агенства Cbonds, а также базы данных Thomson Reuters, Loan Market Assosiation и др. Для исследования вопросов, связанных с развитием синдицированного кредитования в Украине, применялась база данных Министерства финансов Украины.

Результаты: Авторами проведено исследования данного рынка с точки зрения выявления состава и определения функций ключевых участников сделок синдицированного кредитования, проанализированы основные банки-организаторы синдицированного кредитования, основные заемщики и основные сферы инвестирования. В статье раскрыты основные диспропорции в развитии мирового рынка синдицированных кредитов по регионам, странам-участницам, основным банкам-кредиторам и компаниям-должникам. Исследовано участие Украины и украинских заемщиков в процессах международного синдицированного кредитования. Проведен анализ специфики развития и отраслевая направленность рынка синдицированных кредитов в Украине за последние 20 лет, проанализированы основные ассиметрии в его развитии. Выделены основные этапы и их отличительные черты в развитии рынка синдицированного кредитования в Украине, доказана зависимость интенсивности синдицированного кредитования и его отраслевая направленность от изменения макроэкономических показателей страны.

Выводы: В статье раскрыты основные диспропорции в развитии мирового рынка синдицированного кредитования и его прямая зависимость от темпов развития мировой экономики. Авторами выделены этапы развития процессов синдицированного кредитования в Украине, их специфика, раскрыты причины, обусловившие крайне низкий уровень использования данного инструмента финансирования в Украине. Акцентирование внимание на том, что создание эффективной системы организации синдицированных кредитов в Украине может способствовать многократному увеличению возможностей банковской системы, в целом. Использование синдицированных кредитов может позволить аккумулировать необходимые кредитные ресурсы, в частности, для осуществления крупных долгосрочных инвестиций при проектном финансировании и инвестиционном кредитовании.

Ключевые слова: международное финансирование, синдицированный кредит, банковский заем, украинский рынок синдицированных кредитов, банки–организаторы (синдицированных кредитов), заемщики, финансовые долгосрочные инвестиции.

DOI 10.31489/2022Ec4/85-94
JEL H25, O31
UDC 336.02

I. Lunina[1*], O. Bilousova [2], N. Frolova[3]

[1, 2, 3] State Organization "Institute for Economics and Forecasting of the National Academy of Sciences of Ukraine", Ukraine
E - mail: [1]ilunina@ukr.net , [2]bilousova.os@gmail.com , [3]nata.frolova99@gmail.com

ORCID ID: [1]http://orcid.org/0000-0003-3812-4802, [2]https://orcid.org/0000-0001-7434-3469, [3]https://orcid.org/0000-0002- 7979-950X
Web of Science Researcher ID: [1]AAP-2680-2020, [2]AAB-1694-2019, [3]AAD-5412-2022

The strategy of fiscal support for business research and innovation in the context of economic crisis

Abstract

Object: study of the problems of fiscal support for business research and innovation in the conditions of economic crises, analysis of the implied tax subsidy rate on R&D (Research and Development) expenditures, generalization of international experience of state support and stimulation of business innovative activities in crisis periods, substantiation of strategic directions of such support in crisis conditions. The subject of the study was fiscal support for business R&D, as well as the state's strategy for its implementation. The purpose of the article is to substantiate the strategic directions of fiscal support of business R&D in crisis conditions.

Methods: methods of systemic and historical-logical analysis, structural-functional analysis, and statistical comparisons were used.

Findings: the study determined certain peculiarities of fiscal R&D support and business innovations during the periods of economic crises in OECD (Organisation of Economic Cooperation and Development) countries; it is stated that such support, in particular, through tax allowances and direct budget support, as well as state funding of other R&D expenditures, should be an important component of economic recovery measures; strategic areas of fiscal support for business R&D have been developed to ensure the post-crisis reconstruction of the national economy on an innovative basis.

Conclusions: measures aimed at provision of high level of R&D investment (even in difficult conditions) should belong to the priority areas of economic policy, and state support for R&D investment should be counter-cyclical. The goals and measures of innovation policy in crisis conditions should spur the restoration of the national economic growth and improve its competitiveness, which requires, in particular, finding a balance between the creation of general conditions for innovation and state support for business R&D. The latter should be based on clearly articulated priorities of such support as well as areas of innovative activity that should be developed in the long term.

Having summarized the experience of applying various business support measures in crisis conditions, the following measures have been substantiated as foreground: to provide direct budget support for business R&D, as well as budget financing of high- risk long-term research of the creation of public goods and knowledge that have a high expansion potential; to improve the information base for fiscal decision-making, to broaden support for business R&D of small and medium-sized enterprises in order to create the potential for sustainable economic recovery.

Improving the effectiveness of the impact of R&D fiscal measures on the development of national economies requires ensuring a wide coverage of the components of the innovation system, in particular, by expanding state procurement of innovative goods and services; development of cooperation in the spheres of mutually complementary economic activities; expansion of public-private partnership projects and commercialization of public sector research.

Keywords: economic growth, economic crisis, fiscal support, tax allowances, direct budget support for scientific research and innovation, public finance, tax credit, R&D business expenses.

Introduction

In the conditions of an innovative economy, state support for business R&D investments should take into account new factors of economic growth and the provision of innovative structural shifts. Stimulation of business innovative activities is an important prerequisite for the successful development of national economies based on innovation. Different measures have been practiced for years in many countries of the world. However, the fiscal decisions of the different governments in crisis conditions aimed at the accelerating of getting over the crisis, show the capacity for improving measures of state support of innovative development of national economies in crisis conditions and of post-crisis recovery. It allows identify strategic directions for quicker adaptation to new conditions.

*Corresponding author's e-mail: *ilunina@ukr.net*

The set of stimulation measures launched by many countries of the world, among which is state support for business R&D in crisis conditions, needs to be improved with consideration of the good practices of countries that were able to successfully adapt to new conditions and priorities.

In Ukraine, nowadays there are no state support measures for business R&D (neither in the form of tax incentives nor direct budget R&D support). In addition, budget programs for funding research and innovation-investment projects have been curtailed or significantly reduced during periods of economic crisis. At the same time, about 44% of domestic enterprises spent less than 5% of their profits on R&D (Survey, 2020). Given that innovation is one of the most important driving force for economic growth, it is important to determine the strategic directions of fiscal support for business R&D in crisis conditions in order to create the innovative foundation for post-crisis recovery.

Literature Review

According to the results of many studies, starting with the fundamental works of Schumpeter and later Romer, who developed a model of equilibrium with endogenous technological changes, it has been proven that innovation is a key factor in increasing productivity, economic growth, and increasing well-being (Schumpeter, 2008; Romer, 1986; OECD et. al., 2018). The work reveals long-term causal relationships between innovations and economic growth per capita in 19 European countries in the period 1989–2014 (Maradana et. al., 2017).

The most vivid examples of such connections include the experience of China, where high rates of GDP (Gross Domestic Product) growth are observed against the background of steady growth in innovative activity, in particular, during crisis years. In 2009, R&D funding by business increased by 26%. For instance, in 2004 China's share in the world volume of R&D was 7%, in 2008 – 10.5%, but in 2009 it increased to 13% (Pellens et. al., 2018).

However, there are no reliable arguments for such dependence for transitional economies, since countries with transitional economies (including Ukraine) do not have effective innovation systems with a high return on investments in R&D (Zveryakov et. al., 2020).

The transition to a knowledge-based service economy led to a growing role for investments in intangible assets, which became as important as investments in machinery, equipment and buildings. In the new conditions, state support of the national economy must take into account new factors of economic growth that ensure the acceleration of innovative structural shifts (Guellec, Wunsch-Vincent, 2009).

The issue of assessing the impact of innovations on the realization of socio-economic goals, approaches to determining the efficiency and effectiveness of innovation policy are presented in the works of the OECD (OECD, 2016).

Having systemized the key driving forces of business R&D, which affect their ability to engage in innovative activities, financial resources obtained by enterprises due to measures of state support for such activities were defined (OECD et. al., 2018).

In many countries the most prevalent is state support for business R&D in the form of tax allowances. In OECD countries, in 2018, it accounted for about 56% of total state support for business R&D, compared to 36% in 2006. In the European Union (EU-27), during this period, the share of tax support doubled – from 26% to 57% (OECD, 2021).

At the same time, attention should be paid to the fact that the state can stimulate the innovative development of the national economy both directly – by supporting innovations (by financing state research or encouraging private business entities to invest their own funds in R&D and innovation), and indirectly – by creating appropriate conditions for firms, who are ready to invest more and apply innovations (in particular, through the development of material and institutional facilities) (Maradana et. al., 2017).

The formation of the policy of state support for innovative processes should take into account the theoretically argued features of such processes. Thus, within the framework of the theory of innovation systems, it has been proven that innovation processes are not consistent and linear, but include many interactions (OECD et. al., 2018) and support economic and social changes that help solve internal and global problems. This requires coordination of systemic innovation transformations (OECD, 2016).

According to the results of a regression analysis of state R&D expenditures in 26 OECD countries in the period 1995-2015, it was found that in many countries, state funding of investments in R&D has a procyclical nature – an increase in GDP by 1% contributed to an increase in state expenditures on R&D by approximately 0.15–0.2% (Pellens et. al., 2018), and the reduction of the budget deficit by 1 percentage point of GDP was accompanied by an increase in spending on R&D in the short term by 0.6–0.8%.

Izsak et al. researching the government policy in the crisis conditions of 2008-2009, drew attention to the expansion of targeted support measures for R&D, in particular, high-tech entrepreneurship, as well as to the emergence of trends in the commercialization of research findings and strengthening of ties between state and private developments (Izsak et. al., 2013).

Veugelers also points to an increase in state support for the most priority R&D expenditures in conditions of economic crisis (Veugelers, 2016). Among the disadvantages of such support are its focus mainly on firms that already spent significant funds on R&D, and at the same time insufficient attention to firms that wish to engage in R&D, which causes a decrease in returns from private R&D and, accordingly, additional state funding of R&D support measures.

Post-crisis reconstruction of the economy on an innovative basis requires significant financial resources. This indicates the need to develop strategic directions for fiscal support of R&D and innovation in times of crisis.

Methods

In the article, the methods of systematic as well as historical and logical analysis were used in the investigation of state support provided by various OECD countries in 1990-2020, the methods of structural-functional analysis and statistical comparisons – for the analysis of indirect state incentives in different countries and the analysis of fiscal support in periods of crisis, the method of graphic representation in the construction of graphs and charts.

Results

The key role of the financial factor in the innovative development of national economies is evidently confirmed by the indicators of the total financing of scientific, technological and innovative activities of the leading countries (both from the budget and by tax allowances, as well as by business (GBARD+GTARD). For instance, in Israel, according to our calculations, such costs, based on OECD data, averaged at 5.01% GDP for 2016-2019 and 4.23% for 2004-2007, in Korea – 4.56% and 3.24% of GDP, respectively. In Finland, Sweden and Japan, they exceeded 3% GDP on average between 2004 and 2020. Across OECD countries, R&D funding increased on average from 1.67% GDP in 2004-2007 to 1.98% in 2016-2019. (Table 1), including the private sector – from 0.94% to 1.02% GDP, respectively.

Table 1. Government expenditures on business R&D and R&D tax allowances to the private sector in OECD countries: 2004-2019, % GDP

Items	On average for 2004-2007	On average for 2008-2009	On average for 2011-2014	On average for 2016-2019
Total financing of scientific, technological and innovative activities (GBARD+GTARD)				
unweighted average	1.666	1.762	1.865	1.979
Tax allowances				
unweighted average	0.038	0.049	0.062	0.076
min	0.000	0.000	0.000	0.000
max	0.204	0.241	0.275	0.297
Direct budget support for business				
unweighted average	0.058	0.065	0.072	0.063
min	0.000	0.003	0.001	0.002
max	0.183	0.260	0.237	0.164
All budget allocations plus tax allowances				
unweighted average	0.585	0.664	0.650	0.651
min	0.063	0.087	0.096	0.090
max	1.000	1.138	1.306	1.201
Private sector expenses				
unweighted average	0.937	0.933	0.952	1,018
min	0.044	0.051	0.071	0.060
max	2.523	2.558	2.897	3.325
Note - calculated by the authors based on data from the OECD Statistical Bureau (OECD, 2021)				

International experience of state support for R&D

R&D tax allowances serve as a tool of indirect state incentive for businesses in the field of research and development. Over the past 15 years, most OECD countries have observed a steady trend towards their growth (except for 7 countries where their volumes increased and decreased in different years – these are Australia, Spain, Canada, Korea, Mexico, New Zealand, Hungary). This form of R&D support was not applied in Estonia, Luxembourg, Germany and Switzerland during this period.

In OECD member countries, tax incentives can take the form of enhanced deductions from taxable income (enhanced allowances) for research and development expenses (in an amount exceeding 100%). As part of the preferential R&D taxation regime, not all, but only operational R&D costs, which account for an average of about 90% of the total amount of R&D costs, are deductible. On average, across OECD countries, R&D expenses are distributed in the following proportion: 60/30/5/5, where 60% are labor costs, 30% are other opertional costs; 5% – capital expenditures on equipment, 5% – capital expenditures on buildings (OECD, 2019). Support which is based on indicators of operational costs stimulates investment in human resources and increases employment in the national economy, which is extremely important in crisis conditions.

If the taxable income turns out to be less than the amount of deductions, the unused amount of deductions may be carried over for future periods. The extension period varies from three years (as, for example, in the Czech Republic) to 8 years in Portugal and 18 years in Spain, and 20 years in the USA, or for an unlimited period (as, for example, in Great Britain and Lithuania) (OECD, 2020).

Another form of tax support is the compensation of business R&D expenses (in full or in part) against its tax liabilities (tax credit). If the amount of the credit exceeds the amount of a company's corporate income tax liability, or if a company is loss-making, some countries allow to deduct R&D tax credit from payroll tax liabilities, in particular from employers' social security contributions, or offset against future tax liabilities of a company, or receive compensation in the form of cash payments from the budget.

In a number of countries, the right to receive reimbursement for unused R&D tax credit is granted only to selected categories of companies, such as small and medium-sized enterprises or startups. Access to tax R&D allowances may also be bounded by capping the amount of reimbursements or establishing the minimum thresholds in terms of the amount of R&D expenses or number of employees involved in R&D, etc., which make an enterprise eligible (OECD, 2019, December). This is usually due to the intention of the governments to minimize their budget tax expenditures on R&D incentives and to encourage business entities (mainly medium and small businesses) to increase their funding for R&D.

In a number of countries, companies get the right to use tax R&D incentives, provided that their R&D spending shows an increase relative to the base level (either a certain fixed indicator or a moving average over several years). It is customary to call such a loan incremental, and a loan without a requirement regarding the dynamics of costs – volume-based R & D tax credits) (OECD, 2010, 4).

In 12 OECD member countries, and also in Brazil, China, Malta, Romania, accelerated depreciation is provided for capital expenditures on R&D, which allows companies to write off these costs as quickly as possible.

In 2019, Great Britain and France took the top positions with the highest ratios of R&D tax incentives as % of GDP with indicators of 0.33% and 0.28%, respectively. Moreover, Great Britain increased R&D tax incentives (as % of GDP) compared to 2007 by more than 6 times, and France – by almost 3 times.

In the OECD countries, the implied tax subsidy rate (ITSR) on R&D expenditures is used to measure the impact of R&D tax allowances on the investments of economic entities, which represents the percentage amount by which a company investing in R&D can reduce its cost of investments due to the application of such R&D tax allowances. The assessment of the implied tax subsidy rate on R&D expenditures is based on a methodical approach developed by an expert of the Canadian Tax Foundation, Yacek Warda in 1983 (Warda, 2001, 191). His analysis of the efficiency of R&D investments is based on the use of the $B\text{-}_{index}$, which reflects the reduced value of profit before taxation, sufficient to ensure the break-even of an additional unit of R&D expenses. The definition of indicator $B\text{-}_{index}$ has the following mathematical form:

$$B_{\text{-index}} = ATC /1- t, \quad (1)$$

where ATC is the cost of an additional unit of the company's R&D expenses after tax, t is the corporate income tax rate.

The implied tax subsidy rate on R&D expenditures is calculated according to the formula (Appelt et. al., 2019, 14-15):

$$ITSR = 1- B_{\text{-index}} . \quad (2)$$

The level of the implied tax subsidy rate on R&D expenditures depends on both the rates of R&D tax allowances (tax credit and deductions from taxable income) and the rates of reimbursement of unused tax credits. Therefore, the level of R&D tax support significantly varies not only across different OECD member countries,

but also across different kinds of companies within one country. Thus, the largest benefits from R&D tax incentives in 2021 in the EU countries were received by small and medium-sized profitable enterprises of Slovakia (their ITSR was 55%) and Iceland (42%). During 2007-2021, ITSR for SMEs were in many countries higher than for large companies, and therefore, it is reflected by the corresponding average implied tax subsidy rates on R&D expenditures in OECD countries (Table 2). In OECD countries, in 2021, the level of the implied tax subsidy rate on R&D expenditures was higher for profitable medium and small enterprises and amounted to an average of 21.3%, while for large enterprises it was an average of 17.5%. If in 2007 the difference between such rates was on average 1.2 percentage points, then in 2021 it achieved the level of 3.8 percentage points. In 2021, in some countries, the percentage points for small and large enterprises differed by more than twice (Colombia – 67 and 33%, the Netherlands – 39 and 15%, Great Britain – 27 and 12%).

Table 2. Unweighted average implied tax subsidy rate on R&D expenditures in OECD countries in 2007-2021, %

Enterprises	2007	2009	2012	2019	2021
Small and medium -sized profitable enterprises	10.4	12.1	13.2	17.7	21.3
Large enterprises	9.2	10.5	11.5	15.3	17.5
Note - calculated by the authors based on data from the OECD Statistical Bureau (OECD, 2021)					

The indicator of the implied tax subsidy rate on R&D expenditures can serve as a tool for measuring and forecasting the effects of R&D tax allowances on the income tax burden of enterprises that invest in R&D, and therefore – to determine the country's rank in the competition for attracting investments (Warda, 2001, 191).

The situation in Ukraine

The implementation of innovative projects and the development of innovative activities in Ukraine is significantly hampered by the lack of own funds or private capital of enterprises, as well as the lack of appropriate state support. The legislation of Ukraine does not provide an R&D tax credit, nor enhanced deductions of operational R&D expenses from the taxable corporate income. For certain period of time, the stimulation of investment and innovation activities was carried out by providing tax preferences for certain kinds of economic activities, technological parks, as well as free trade zones and territories of priority development. In 2005, most of these benefits were abolished. From 2017 until 2025, a benefit in the form of a coprorate income tax exemption of the aircraft industry, as a priority sector of the Ukrainian economy, was temporarily restored. However, most of the funds exempted from taxation in 2018 were directed by aircraft industry to the re-equipment of its material and technical base, while R&D was not funded in 2017-2018. Therefore, the provision of R&D stimulation requires a clear definition of the purposes of providing tax allowances and should be accompanied by increased control over their use (monitoring of the use of funds exempted from taxation).

Peculiarities of R&D state support during periods of economic crises

Bearing in mind that R&D increases the knowledge capital and has a long-term positive impact on the productivity and economic growth, the reduction of such costs during economic crises, in particular, is treated negatively by ZEW experts. Even more, the provision of a high level of R&D investment (even in difficult conditions) is attributed to priority areas of economic policy (Pellens et. al., 2018).

During the economic crisis of 2008-2009, in many OECD countries, the business expenses on R&D decreased. For instance, in 2009 they fell (as % GDP) compared to 2007 in 14 out of 37 countries. Total business expenses as a whole in OECD countries decreased by 2.5% – from 1.378% of GDP in 2007 to 1.344% in 2009 and 1.312% in 2010.

As you know, in crisis conditions the government can take different actions according to various scenarios (OECD, 2012): to increase budget support to businesses in order to secure certaint level of R&D business expenses; to increase of R&D funding in the public sector (universities, public scientific-research institutes etc.) in order to offset possible reduction of R&D funding in the private sector; to redistribute public R&D expenditures on priority goals and measures (projects) that gain the greatest macroeconomic effect, taking into account the risks of reducing government tax revenues and the need to save budget funds; to reduce R&D budget funding (in response to a reduction of tax revenues).

Discussions

According to Makkonen's findings, based on the analysis of changes in R&D budget expenditures of the EU countries after the economic crisis of 2008-2009, countries that demonstrated a pro-cyclical reaction

which corresponded to the general trend of reducing public spending (Makkonen, 2013) are, as a rule, less oriented towards innovation and have worse financial indicators.

Table 3. Budget R&D expenditures in pre-crisis 2007 and crisis 2009, % GDP

Countries	Budget support for business R&D in 2007,% GDP	Budget support for business R&D in 2009,% GDP	The growth of budget support for business R&D in 2009/2007,%	Other R&D budget expenditures, 2007, % GDP	Other R&D budget expenditures, 2009, % GDP	The growth of other R&D budget expenditures, 2009/2007, %
Australia	0.036	0.026	71.3	0.428	0.478	111.6
Austria	0.090	0.077	85.1	0.533	0.670	125.6
Belgium	0.073	0.087	119.5	0.517	0.574	111.1
Canada	0.022	0.029	129.7	0.557	0.615	110.4
Colombia	0.001	0.016	2314. 3	0.065	0.074	112.9
Czech Republic	0.106	0.112	105. 3	0.424	0.470	110.8
Denmark	0.043	0.055	128.5	0.750	0.929	124.0
Estonia	0.047	0.069	147.7	0.426	0.613	143.9
Finland	0.083	0.066	79.0	0.847	0.995	117.6
France	0.125	0.122	98. 1	0.602	0.782	129.9
Germany	0.078	0.083	106.7	0.671	0.805	120.0
Hungary	0.046	0.100	216.2	0.335	0.351	104.7
Iceland	0.075	0.006	8, 2	0.732	0.997	136.2
Ireland	0.045	0.046	102.9	0.409	0.479	117.2
Israel	0.168	0.157	93.4	-0.168	-0.157	93.4
Italy	0.039	0.042	108.5	0.577	0.578	100.2
Japan	0.028	0.028	102.5	0.623	0.692	111.0
Korea	0.136	0.160	117.0	0.760	0.895	117.8
Latvia	0.005	0.006	113.2	0.270	0.195	72.2
Lithuania	0.006	0.007	120. 7	0.497	0.511	102.8
Luxembourg	0.053	0.039	73.8	0.310	0.467	150.5
Mexico	0.013	0.025	195. 4	0.196	0.230	116.9
Netherlands	0.020	0.029	145.0	0.683	0.747	109.4
New Zealand	0.043	0.044	101. 9	0.395	0.475	120.3
Norway	0.063	0.085	135. 6	0.677	0.764	113.0
Poland	0.020	0.023	116. 6	0.292	0.309	105.5
Portugal	0.020	0.041	208.0	0.409	0.483	118.1
Slovak Republic	0.018	0.014	75. 3	0.188	0.344	182.9
Slovenia	0.068	0.138	202.6	0.446	0.538	120.7
Spain	0.113	0.121	107. 2	0.629	0.692	110.0
Sweden	0.109	0.139	127.5	0.635	0.707	111.3
United Kingdom	0.069	0.079	115.6	0.533	0.526	98.7
United States	0.184	0.275	149.5	0.629	0.669	106.3
Unweighted average	0.058	0.069	119.3	0.549	0.632	115.2
Note - calculated by the authors based on data from the OECD Statistical Bureau (OECD, 2021)						

According to our estimates in 2009 compared to 2007, 27 OECD countries increased their direct R&D budget support of economic entities (as % GDP), including Hungary, Slovenia, Portugal – by more than twice, and the Netherlands, Estonia, the USA, Turkey – by 45-77% (Table 3). On average across OECD countries, the amount of such support increased by 19.3% to 0.069% GDP. In 2009, the ratio of R&D tax allowances was increased in 13 OECD countries, including Belgium – by more than 3 times, in France – by 2.6 times. The average ratio of R&D tax allowances across OECD countries increased by 27.7% to 0.054%

GDP. Several countries (Portugal, Spain, Italy, Ireland, etc.) increased both direct budget and tax support for R&D, in response to the need to stabilize the economy during the crisis.

It should also be noted that in the crisis of 2009, not only direct budget support for private sector R&D expenditures increased, but also other budget expenditures on R&D (financing research organizations, material and institutional facilities). The average ration across OECD countries grew by 15.2% up to 0.632% GDP (Table 3). Therefore, broad support for innovation has become an important component of economic recovery measures.

So, as the OECD practice showed in the crisis of 2008-2009, the importance of state R&D support increased. Those measures gained the so-called "double dividend": stimulated the development of innovative activity and simultaneously encouraged the business to create new jobs (Sapirie, 2020). In addition, given the limited access to external sources of financing, such support allowed enterprises to reduce the investment cost.

According to the conclusions of OECD experts, the economic crisis of 2008-2009 affected the development of science, technology and innovation in general (OECD, 2012), as the aggravation of a number of problems, most of which arose before 2008, required a review of the policy in the field of research and development. Successful development was attained to countries that were able to adapt to new conditions.

Endogenous economic growth during the crisis years was facilitated, in particular, by applying better targeted state R&D support tools and measures, in particular, to the companies engaged in the production of in-demand innovations (Hud et. al., 2015).

A number of researchers have drawn attention to the advantages of direct budget support measures (Broughel et. al., 2019), to finance long-term, high-risk researces, as well as to target areas that either create public goods or have particularly high secondary effects. Therefore, the formation of a portfolio of policy measures should ensure a proper balance between direct and indirect measures (OECD, 2021).

It should also be noted that during the 2008-2009 crisis, the governments of many countries (OECD, 2016) inceased the efficiency and effectiveness of their innovation policy, in particular, due to the improvement of evaluation methods and evidence base. They also paid higher attention to supporting business R&D of small and medium-sized enterprises in order to support R&D in general and, consequently, to create the potential for sustainable economic recovery. In the following years, innovations received a high status in national programs of economic policy (OECD, 2012). For instance, Korea announced a new science and technology policy initiative "Post-corona, science and technology policy for a new future", which outlines 30 perspective technologies that will have a high priority for state R&D funding (González et. al., 2021).

The economic crisis caused by the COVID-19 pandemic and the following government restrictions on doing business, including long-term quarantines, showed the need for changes in the policy of state support for business R&D. The COVID-19 crisis helped to realize that innovations should not only ensure further recovery of the economy but also actively participate in restraining crisis. Thus, according to the conclusions of OECD experts, state R&D support measures should direct efforts to where innovation is most needed (OECD, 2021). Therefore, one of the key components of the national innovation policy during the economic crisis should be the determination of the priorities of state R&D support and business innovative activities, which should be ensured in the long term.

In recent decades, the share of support through tax allowances (compared to direct support measures) has increased in business R&D support. However, the main disadvantage of tax allowances is the lack of clear goals for their application. Summarizing the experience of using various measures in crisis conditions reveals the priority of applying measures of direct budget support for business R&D, as well as high-risk long-term research for the creation of public goods (for example, in the field of health care) or knowledge that has a high expansion potential.

Increasing the efficiency and effectiveness of state support for R&D requires the balance between support measures (R&D tax allowance, direct budget R&D support in the private sector, other budget R&D expenditures), as well as improving the information basis for fiscal decision-making in support of innovative development.

Increasing the effectiveness of the application of financial measures of innovative development of national economies requires ensuring a wide coverage of the components of the innovation system, in particular, by:

- the expansion of public procurement of innovative goods and services (i.e. from the demand side), the introduction of new standards and regulations (in particular, safety standards, methods of quality control of products, processes, services), as well as the use of innovative user-oriented initiatives (for example, waste disposal, energy efficiency measures, etc.);
- development of cooperation in the spheres of mutually complementary economic activity (based on the formation of clusters uniting enterprises, higher educational institutions, research institutions, other state and private organizations, as well as the implementation of "smart specialization" strategies);
- expanding commercialization of public sector research and public-private partnership projects.

Conclusions

During economic crises the fiscal state of countries usually becomes more complicated (strict budgetary restrictions arise) and at the same time the issue of providing a budgetary policy aimed at ensuring economic growth becomes urgent. In such conditions, there is a need to mobilize all national resources – financial, human capital, innovative potential. Based on the experience of many countries, the solution of these tasks requires higher government involvement in innovation policy, which must be effective, responds to current challenges, and ensures the coherence of various measures.

Innovative business activities require state support, especially in crisis conditions, when market signals are distorted and coordination processes are complicated. However, given the limited financial resources of the state, such support should have clear goals and forward private innovative efforts to where they are most needed.

The goals and measures of innovation policy in crisis conditions should make higher impact on the growth of the national economy and improve their competitiveness, which requires, in particular, finding a balance between the creation of general conditions for innovation and state support for business R&D.

The introduction of R&D tax allowances should be accompanied by enhanced control over tax compliance and better business reporting on the accrual of tax allowances, as well as their intended use.

References

Appelt, S., Galindo-Rueda, F. & González Cabral, A. (2019). "Measuring R&D tax support: Findings from the new OECD R&D". Tax Incentives Database. *Working Papers OECD: Science, Technology and Industry, 2019/06*. Retrieved from https://www.oecd-ilibrary.org/docserver/d16e6072-en.pdf?expires=1589309691&id=id&accname=guest&checksum=6DCCF40A2E5E9832A470DFEF3C849B56

Broughel, J. & Thierer, A. (2019, February). "Technological Innovation and Economic Growth: A Brief Report on the Evidence". *Mercatus Research, Mercatus Center at George Mason University*. Retrieved from https://www.mercatus.org/system/files/broughel-technological-innovation-mercatus-research-v1.pdf

González Cabral, A., Appelt, S. & Hanappi, T. (2021). "Effective Corporate tax rates for R&D: The case of expenditure-based R&D tax incentives". *Taxation Working Papers OECD, 54*. Retrieved from https://doi.org/10.1787/ff9a104f-en

Guellec, D., & Wunsch-Vincent, S. (2009). "Policy Responses to the Economic Crisis: Investing in Innovation for Long-Term Growth". *OECD Digital Economy Papers. 159.* (quoted from the summary). Retrieved from https://doi.org/10.1787/222138024482.

Hud, M. & Rammer, C. (2015). "Innovation Budgeting Over the Business Cycle and Innovation". ZEW. *Discussion Paper. 15-030*. Retrieved from https://ftp.zew.de/pub/zew-docs/dp/dp15030.pdf

Izsak, K., Markianidou, P., Lukach, R. & Wastyn, A. (2013). "The Impact of the Crisis on Research and Innovation Policies". Technopolis Group Belgium and Idea Consult. Retrieved from https://www.zsi.at/object/publication/3115/attach/0_Impact_of_crisis_on_R_D_1897_FINALVERSION.pdf

Makkonen, T. (2013). "Government science and technology budgets in times of crisis". *Research Policy. 42*. 817–822.

Maradana, R. P., Pradhan, R. P. & Dash, S. et al. (2017). "Does innovation promote economic growth? Evidence from European countries". *J Innov Entrep. 6,* 1. Retrieved from https://doi.org/10.1186/s13731-016-0061-9

OECD, & Eurostat (2018), *Oslo Manual 2018: Guidelines for Collecting. The Measurement of Scientific, Technological and Innovation Activities. Reporting and Using Data on Innovation, 4th Edition.* Retrieved from https://dx.doi.org/10.1787/9789264304604-en

OECD (2010). R&D tax incentives: rationale, design, evaluation. Retrieved from https://www.oecd.org/sti/ind/46352862.pdf

OECD (2012). Innovation in the crisis and beyond, in: OECD (ed.). Science, Technology and Industry Outlook 2012, 21–57.

OECD (2012). Science, Technology and Industry. Outlook 2012 Highlights. Retrieved from http://www.oecd.org/sti/rd-tax-stats.htm

OECD (2016). Science, Technology and Innovation. Outlook 2016. System Innovation; The Innovation Imperative. OECD 2015. Contributing to Productivity, Growth and Well-Being. Retrieved from https://www.oecd.org/fr/sti/oecd-science-technology-and-innovation-outlook-25186167.htm

OECD (2019). R&D. Tax Incentive Database. General and country-specific notes. Retrieved from https://www.oecd.org/sti/rd-tax-stats-bindex-notes.pdf

OECD (2019, December). "R&D Tax Incentives: Spain, 2019". Directorate for Science, Technology and Innovation. Retrieved from http://www.oecd.org/sti/rd-tax-stats-spain.pdf

OECD (2020). R&D. Tax Incentives Database. Retrieved from http://www.oecd.org/sti/rd-tax-stats.htm

OECD (2021). Science, Technology and Innovation. Outlook 2021. *Times of Crisis and Opportunity*, 13-14.

OECD (2021). Statistical Bureau. Retrieved from https://stats.oecd.org/Index.aspx?DataSetCode= RDSUB

Pellens, M., Peters, B., Hud, M., Rammer, C. & Licht, G. (2018, January). "Public Investment in R&D in Reaction to Economic Crises – A Longitudinal Study for OECD Countries". ZEW. *Discussion Paper*. *18-005.*

Romer, P. M. (1986). "Increasing returns and long-run growth". *Journal of Political Economy. 94.* 1002–1037.

Sapirie, M. (2020, May 15). "Recession And The Research Tax Credit, Tax Notes". Retrieved from https://www.taxnotes.com/opinions/recession-and-research-credit/2020/05/15/2cjkq

Schumpeter, J. A. (2008). The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest and the Business Cycle, translated from the German by Redvers Opie, New Brunswick (USA) and London (UK): Transaction Publishers.

Survey of business representatives regarding innovative activities and current needs in R&D (2020). Ministry of Digital Information of Ukraine. Final report. 56. Retrieved from https://mon.gov.ua/storage/app/media/innovatsii- transfer-tehnologiy/2020/08/28.08/opituvannya-28-08-2020.pdf

Veugelers, R. (2016). "Getting the Most from Public R&D Spending in Times of Austerity: Some Insights from SIMPATIC Analysis". *Breugel Working Paper* 2016/1, Brussels.

Warda, J. (2001). "Measuring the Value of R&D Tax Treatment in OECD Countries". *STI Review. 27*: Special Issue on New Science and Technology Indicators, OECD. 185-210. Retrieved from http://www.oecd.org/sti/37124998.pdf

Zveryakov, M. I., & Patlatoi, O. Ye. (2020). "Innovation development of transition countries in the context of their participation in global value chains". *Naukovyi Visnyk Natsionalnoho Hirnychoho Universytetu*. *2*. 172-178.

И. Лунина, О. Белоусова, Н. Фролова

Экономикалық дағдарыс жағдайында бизнес-зерттеулер мен инновацияларды бюджеттік қолдау стратегиясы

Аңдатпа:

Мақсаты: Экономикалық дағдарыстар жағдайында бизнесті зерттеу мен инновацияларды фискалдық қолдау проблемаларын зерделеу, ҒЗТКЖ шығындарына салық субсидияларының болжамды мөлшерлемесін талдау, дағдарыс кезеңдерінде бизнестің инновациялық қызметін мемлекеттік қолдау мен ынталандырудың халықаралық тәжірибесін жинақтау және дағдарыс жағдайында осындай қолдаудың стратегиялық бағыттарын негіздеу. Зерттеу тақырыбы бизнестің ҒЗТКЖ-ны қаржылық қолдауы, сондай-ақ оны жүзеге асыру жөніндегі мемлекеттің стратегиясы. Мақаланың мақсаты — дағдарыс жағдайында бизнестің ҒЗТКЖ-ны бюджеттік қолдаудың стратегиялық бағыттарын негіздеу.

Әдістер: Жүйелік және тарихи-логикалық талдау, құрылымдық-функционалдық талдау және статистикалық салыстыру әдістері қолданылды.

Қорытынды: Зерттеуде ЭЫДҰ елдеріндегі экономикалық дағдарыстар кезеңдерінде ҒЗТКЖ мен бизнес-инновацияларды бюджеттік қолдаудың кейбір ерекшеліктері айқындалды; мұндай қолдау, атап айтқанда, салықтық жеңілдіктер мен тікелей бюджеттік қолдау, сондай-ақ ҒЗТКЖ-ға жұмсалатын басқа да шығыстарды мемлекеттік қаржыландыру арқылы экономиканы қалпына келтіру жөніндегі шаралардың құрамдас бөлігі маңызды болуы тиіс деп бекітіледі; Ұлттық экономиканы инновациялық негізде дағдарыстан кейінгі қайта құруды қамтамасыз ету үшін бизнесті ғылыми-зерттеу және тәжірибелік-конструкторлық жұмыстарға бюджеттік қолдау көрсетудің стратегиялық бағыттары әзірленді.

Тұжырымдама: ҒЗТКЖ-ға инвестициялардың жоғары деңгейін қамтамасыз етуге бағытталған шаралар (тіпті қиын жағдайларда да) экономикалық саясаттың басым бағыттарына жатқызылуы тиіс, ал ҒЗТКЖ-ға инвестицияларды мемлекеттік қолдау антициклді сипатта болуы тиіс. Дағдарыс жағдайындағы инновациялық саясаттың мақсаттары мен шаралары ұлттық экономиканың өсуін қалпына келтіруді және оның бәсекеге қабілеттілігін арттыруды ынталандыруы тиіс, бұл, атап айтқанда, инновациялар үшін ортақ жағдайлар жасау мен ҒЗТКЖ саласындағы бизнесті мемлекеттік қолдау арасындағы тепе-теңдікті табуды талап етеді. Соңғысы осындай қолдаудың нақты тұжырымдалған басымдықтарына, сондай-ақ ұзақ мерзімді перспективада дамытылуы тиіс инновациялық қызмет бағыттарына негізделуі керек.

Дағдарыс жағдайында бизнесті қолдаудың әртүрлі шараларын қолдану тәжірибесін жинақтай отырып, келесі шаралар бірінші кезектегі шаралар ретінде негізделді: Бизнестің ҒЗТКЖ-на тікелей бюджеттік қолдауды,

сондай-ақ әлеуеті жоғары кеңеюі бар қоғамдық игіліктер мен білімді құру бойынша жоғары тәуекелді ұзақ мерзімді зерттеулерді бюджеттік қаржыландыруды қамтамасыз ету; қаржылық шешімдер қабылдау үшін ақпараттық базаны жақсарту, экономиканы тұрақты қалпына келтіру әлеуетін арттыру мақсатында бизнесті зерттеу мен шағын және орта кәсіпкерлікті дамытуды қолдауды кеңейту.

ҒЗТКЖ саласындағы фискалдық шаралардың ұлттық экономиканы дамытуға әсер ету тиімділігін арттыру инновациялық жүйенің компоненттерін, атап айтқанда, инновациялық тауарлар мен қызметтерді мемлекеттік сатып алуды кеңейту жолымен кең қамтуды қамтамасыз етуді; өзара толықтырушы экономикалық қызмет салаларындағы ынтымақтастықты дамытуды; мемлекеттік-жекешелік әріптестік жобаларын кеңейтуді және мемлекеттік секторды зерттеуді коммерцияландыруды талап етеді.

Кілт сөздер: экономикалық өсу, экономикалық дағдарыс, фискалдық қолдау, салықтық жеңілдіктер, ғылыми зерттеулер мен инновацияларға тікелей бюджеттік қолдау, мемлекеттік қаржы, салық несиесі, ҒЗТКЖ бизнесінің шығындары.

И. Лунина, О. Белоусова, Н. Фролова

Стратегия бюджетной поддержки бизнес-исследований и инноваций в условиях экономического кризиса

Аннотация:

Цель: Изучение проблем фискальной поддержки исследований и инноваций бизнеса в условиях экономических кризисов, анализ предполагаемой ставки налоговых субсидий на расходы на НИОКР, обобщение международного опыта государственной поддержки и стимулирования инновационной деятельности бизнеса в кризисные периоды, обоснование стратегических направлений такой поддержки в условиях кризиса условия. Предметом исследования была финансовая поддержка НИОКР бизнеса, а также стратегия государства по ее реализации. Целью статьи является обоснование стратегических направлений бюджетной поддержки НИОКР бизнеса в условиях кризиса.

Методы: Использовались методы системного и историко-логического анализа, структурно-функционального анализа и статистических сравнений.

Результаты: В исследовании определены некоторые особенности бюджетной поддержки НИОКР и бизнес-инноваций в периоды экономических кризисов в странах ОЭСР; утверждается, что такая поддержка, в частности, посредством налоговых льгот и прямой бюджетной поддержки, а также государственного финансирования других расходов на НИОКР, должна быть важным компонентом мер по восстановлению экономики; разработаны стратегические направления бюджетной поддержки НИОКР бизнеса для обеспечения посткризисной реконструкции национальной экономики на инновационной основе.

Выводы: Меры, направленные на обеспечение высокого уровня инвестиций в НИОКР (даже в сложных условиях), должны относиться к приоритетным направлениям экономической политики, а государственная поддержка инвестиций в НИОКР должна носить антициклический характер. Цели и меры инновационной политики в условиях кризиса должны стимулировать восстановление роста национальной экономики и повышение ее конкурентоспособности, что требует, в частности, нахождения баланса между созданием общих условий для инноваций и государственной поддержкой бизнеса в области НИОКР. Последнее должно основываться на четко сформулированных приоритетах такой поддержки, а также на направлениях инновационной деятельности, которые следует развивать в долгосрочной перспективе.

Обобщив опыт применения различных мер поддержки бизнеса в условиях кризиса, в качестве первоочередных были обоснованы следующие меры: обеспечить прямую бюджетную поддержку НИОКР бизнеса, а также бюджетное финансирование высокорисковых долгосрочных исследований по созданию общественных благ и знаний, обладающих высокой экспансией потенциал; улучшить информационную базу для принятия финансовых решений, расширить поддержку бизнес-исследований и разработок малых и средних предприятий с целью создания потенциала для устойчивого восстановления экономики.

Повышение эффективности воздействия фискальных мер в области НИОКР на развитие национальных экономик требует обеспечения широкого охвата компонентов инновационной системы, в частности, путем расширения государственных закупок инновационных товаров и услуг; развития сотрудничества в сферах взаимодополняющей экономической деятельности; расширения государственных проектов частного партнерства и коммерциализация исследований государственного сектора.

Ключевые слова: экономический рост, экономический кризис, фискальная поддержка, налоговые льготы, прямая бюджетная поддержка научных исследований и инноваций, государственные финансы, налоговый кредит, расходы бизнеса на НИОКР.

DOI 10.31489/2022Ec4/95-101
JEL O40
УДК 33.332:636:658.53

A.A. Mutaliyeva[1*], A.Ye. Yesbolova[2], V.N. Seitova[3], A.N. Issakhmetova[4], Zh.S. Kazanbayeva[5]

[1,2,3]M. Auezov South Kazakhstan University, Shymkent, Kazakhstan;
[4,5]Central Asian Innovation University, Shymkent, Kazakhstan
[1]alua012@mail.ru, [2]yesbolova@gmail.com, [3]vilena_11@mail.ru, [4]i_a_n@inbox.ru, [5]zhanarkaz74@mail.ru

[1]https://orcid.org/0000-0002-4268-9382, [2]https://orcid.org/0000-0001-9503-9482,
[3]https://orcid.org/0000-0002-4404-4916

Development of innovative and cooperative complex in the dairy industry

Abstract:

Object: The article analyzes the current state and development dynamics of the dairy industry in Kazakhstan. The volume of milk produced by agricultural categories and their structural share in the total milk production of the country was studied and it was found that the share of the population in recent years is 72-75%.

The development of the dairy industry of the country is based on the creation of complexes of innovation and cooperation between the population and farms. The scheme of creation of innovative and cooperative relations between private farms and dairy processing company "FoodMaster-Shymkent" is developed and offered.

In the scheme of milk collection, deep processing of milk on the basis of innovative and cooperative relations of the company, it is proposed to include the following groups as participants in cooperative relations between farms: milk producers – individual households of the population, peasant (farmer) farms and private entrepreneurs; milk processor – milk processing innovation and cooperative complex; consumers of dairy products – the population and special trade organizations.

Methods: To achieve the research goal, general scientific methods were widely used, in particular, the method of content analysis; the method of analysis; the method of generalization; the method of graphical interpretation.

Findings: Dairy company "FoodMaster" is one of the innovative enterprises, which includes 4 types of innovations for the development of innovation and cooperation, which includes product innovation and process innovation, marketing innovation and organizational innovation.

This is an innovative dairy company, which for the first time introduced the ISO-9000 international standard in Kazakhstan, which effectively manages production according to the international standard, for the first time produced many types of high-quality innovative dairy products.

Conclusions: It is noted that the existing innovative technologies, qualitative structural change of categories in the dairy industry, intensive economic growth, increasing the competitiveness of dairy products, as well as the development of a program in the organization to increase production volumes, milk processing in accordance with international standards, as well as the issuance of recommendations to consumers to expand the range of milk are being studied.

Keywords:dairy industry, innovation, cooperation, innovation-cooperation, organizational innovation, innovative and cooperative complex, dairy products, dairy processing, innovative products, marketing innovation.

Introduction

As a result of the post-independence transformation of the agricultural sector in Kazakhstan, structural changes in the categories of dairy farming have significantly changed the production nature and capabilities of individual farms and farmers in the country. There the role of households and farms has increased in maintaining food security and improving the living standards of the population in rural areas.

In the current market conditions, the formation and development of large integrated production complexes of individual households and farms on the basis of large cooperation and integration agreements is an important priority in the system of organizational and economic measures to increase the production efficiency and competitiveness of individual households (Aidarova, A. *et al.*, 2016).

Consolidation of individual peasant farmers into a large cooperative-integrated structure is to ensure the demand of the population for food, and the income of workers and peasants in cooperative farms, the rapid economic growth of farms (Cole, J. B. *et al.*, 2020). Thus, this connection is made in different ways. On the one hand, as a process arising from the development of the division of labor in order to efficiently organize the production, processing and sale of products. On the other hand, to respond to the effective use of existing

* Corresponding author. E-mail address: *alua012@mail.ru*

equipment and technologies in modern market conditions on the basis of quality cooperation and integration agreements is to establish a cooperative relationship.

Literature Review

The State program of industrial and innovative development of the Republic of Kazakhstan for 2020-2025 says that every year there is a growing need to develop the cooperative complex of the dairy industry of the country, but nevertheless accurate information is not given on how to increase and develop this complex. Against the background of the decline of certain economic indicators of Kazakhstan during the 2019-2020 pandemic, indicators of the volume of consumer demand in the dairy industry have increased. In order to realize and increase the satisfaction of the needs of the population, as well as increase these indicators, it is necessary to introduce an innovative cooperative complex in the dairy industry.

In Norway, regional innovation systems have served as a tool for the regional development of the innovation and cooperation complex of the dairy industry (Fiore, M., *et al.,* 2020). Based on the Norwegian study, it can be concluded that the dairy sector of any country is primarily focused on national specifics, but with the availability of local and regional resources and the rational use of innovations, it is possible to compensate for differences and reach the interregional level (Grau, A. *et al.,* 2015).

Until today, the issue of the development of innovations in the cooperative complex of the dairy industry has not been considered on the territory of the Republic of Kazakhstan, and for the country this is absolutely a turning point for the reorganization of the cooperative-organizational form into an innovative-cooperative one.

Methods

The OECD formed an expert group that conducted diagnostic work, that is, included interviews with relevant local residents and institutions also during a 3-day study visit in June 2019; and identified the strengths and weaknesses of the model by comparing with international best practices.

They also reviewed the existing literature on the evolution of cooperative movements and reports of the Federation of Trentino Cooperatives. The strengths and weaknesses of the model were identified using an interdisciplinary approach in accordance with the fields of knowledge, political, economic and organizational. Trentino's model was compared with international best practices.

In this regard, the expert group was asked to identify and evaluate the evolution of the cooperative movement in order to:

1. promote local development and benefits for members through legal and fiscal framework incentives;
2. solve the problems arising as a result of increased competition with traditional enterprises and the economic downturn;
3. discuss best practices and lessons learned by cooperatives to identify key elements and factors for successfully building the resilience capacity of cooperatives;
4. discuss best practices and lessons learned from other collaboration models to identify key elements and drivers for innovation;
5. identify and explore options for future directions and activities in areas where the benefits of collaboration can be used to ensure sustainable opportunities.

Results

Based on the analysis of the dynamics of milk production in Kazakhstan, we see that in 2019 the volume of milk increased from 5864.9 thousand tons to 13.1% compared to 2015. The analysis of the structure of total milk production by dairy categories in 2019 revealed that the share of households was 72.7%, individual entrepreneurs and farms – 20.2%, and large agricultural enterprises produced only 7.1% of total milk (Uskenov *et al.,* 2021).

As private households, individual entrepreneurs, private family production, they are basically production based on the individual labor of family members and, in most cases, individual family funds (Galaso, P., *et al.,* 2022). For them, this is the main source of consumption of self-preservation, a compulsory measure to preserve the private economy. However, the development of individual households (production of dairy products, storage, processing, packaging and sale of dairy products) is not possible for every individual and individual entrepreneurs. Therefore, (Grigoryevich, S. V. *et al.,* 2021) the successful and rapid growth of their own production depends on the establishment and support of industrial relations with large, specialized milk production (Table).

Table. Dynamics of the volume and structure of milk production in the categories of dairy farming in Kazakhstan

Indicators	2015	2016	2017	2018	2019		2019 2015 %
					thousand tons	%	
Number of cows in Kazakhstan, thousand heads	3130.5	3209.9	3358.0	3362.4	3576.5	x	114.2
Volume of milk produced in Kazakhstan, thousand tons	5182.4	5341.5	5503.4	5686.2	5864.9	100	113.1
including thousands of tons:							
in agricultural enterprises	265.8	319.9	361.4	384.6	414.4	7.1	155.9
individual entrepreneur, on farms	790.7	900.0	1038.1	1120.4	1182.2	20.2	149.5
in private households	4125.9	4121.8	4103.9	4181.3	4268.3	72.7	103.4
Note - compiled by the author on the basis of the dynamics of milk production in Kazakhstan							

In market conditions, dairy enterprises and private farms need not only self-preservation, but also the need to create an innovative and cooperative complex for deep processing of coarse milk, created on the basis of inter-farm cooperation and integration (Alimardanova *et al.,* 2021), for the formation and development of competitive, successful milk production and considers it as the main goal of rapid development of production. This is important not only for individual farms and peasant (farmer) farms, but also for long-term organizations and consumers, milk buyers and dairy processing facilities in the industry (Holloway, G. *et al.,* 2020).

Private households and farms, firstly, determine what they need to produce, in what volume and where to sell and secondly, tax and other benefits for individual households, as well as innovative and cooperative complexes associated with the expansion of private farms depending on the size of land and livestock the amount of subsidized support and assistance from the government (Kyrylov *et al.,* 2021), etc. should be considered. Only then, the structure of inter-farm cooperation on the basis of cooperative relations within the country will ensure the rapid development of not only individual farms, but also the economy of the industry.

Formation and development of innovative and cooperative dairy processing complex between private households and farms on the basis of contracts will allow them to effectively use part of their resources to individual households, which will increase their role, increase the overall food potential of the country, improve the welfare of the population and creates conditions for increasing the efficiency of dairy production as a whole.

Discussions

Today, cooperation and integration ties between farms and private households and the innovative dairy processing company “FoodMaster” play an important role in the development of the dairy industry in the country. The introduction of complex mechanization, introduction of advanced automated technology, expansion of production and increase of labor productivity, reduction of production costs will be created in specialized dairy enterprises (Gavrilova, 2014). Significant increase in milk marketability through specialization of dairy livestock on the basis of innovative approach is a strategic development plan for the company.

The main task of the food processing company “FoodMaster-Shymkent” is the sustainable development of milk production and the continuous provision of consumers with innovative products made from natural ingredients in accordance with international quality standards.

Dairy company “FoodMaster-Shymkent” includes existing production, process, production, marketing innovations. This company is one of the enterprises in the agricultural sector, which includes 4 types of innovations in terms of economic activities: product innovations and process innovations, marketing innovations and organizational innovations.

LLP “FoodMaster-Shymkent” carried out the following product innovations in order to operate on the basis of waste-free technology: milk collection services from the population on a cooperative basis, milk and dairy products, condensed milk products, sour cream, kefir, Dolce yogurt, butter, “Dutch”, “Lenger”, “Castrom”, “Chechel” cheeses, “home” cottage cheese, etc. products, ice cream assortment products, storage of dairy products in the store, implementation of product (service) innovations.

According to the introduction of marketing innovations (sales in the market), they are: creation of a milk market for the population, pricing, purchase, sale of packaged milk, packaged condensed milk, yogurts,

packaged butter, packaged frozen cheeses, cheese, cottage cheese, ice cream; new marketing strategies for sales, wholesale, direct sales pricing were used in the company's stores (Chagwiza, 2016).

In addition, there is a sales branch and two private dairy farms, established on the basis of marketing innovations. “FoodMaster-Shymkent” is a leader in the production of dairy products in the market of Kazakhstan, and is also the first company in the country to launch many new types of innovative dairy products. As the first company in Kazakhstan to implement the international standard ISO-9000, the company is the only guarantee of effective management, production of quality products in accordance with international standards.

In the field of dairy farming, the following groups of participants of inter-farm cooperation in the scheme of milk collection, deep milk processing on the basis of innovative and cooperative relations of the company “FoodMaster” from individuals and farms (farmers):

- dairy producers – individual households, peasant (farmer) farms, individual entrepreneurs;
- milk processor – innovative and cooperative milk processing complex;
- consumers of dairy products – the population and specialized trade organizations (Fig. 1).

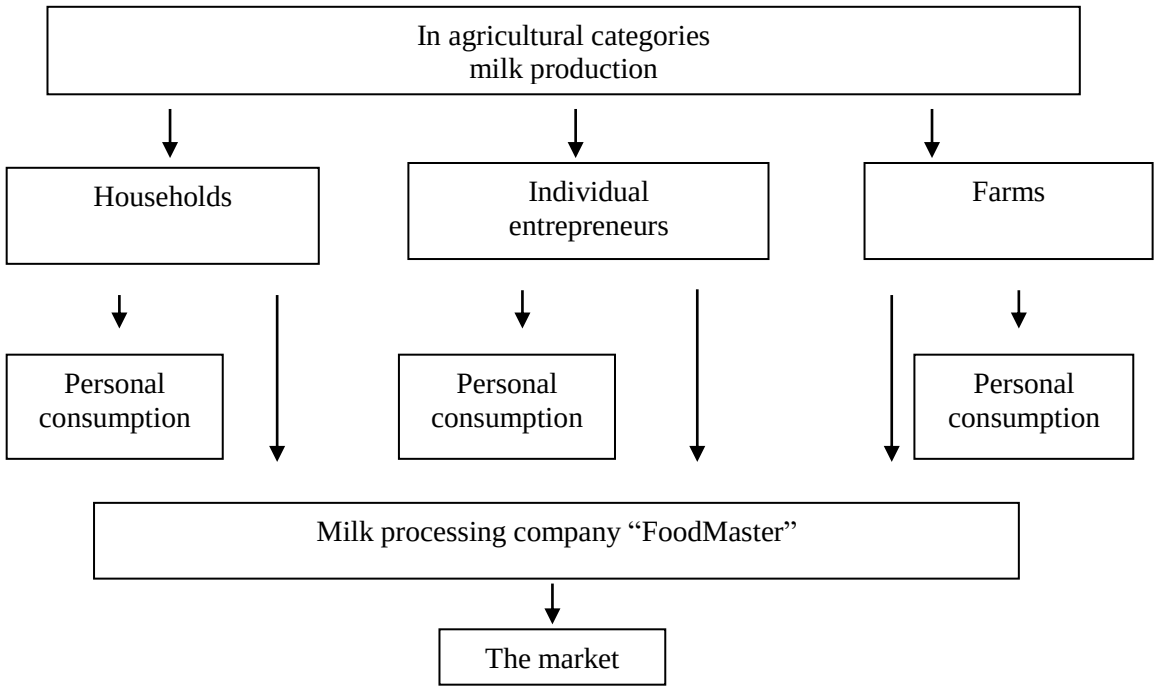


Figure. Scheme of the food processing company “FoodMaster”, which established an innovative and cooperative relation between the categories of dairy farms

Note - compiled by the author on the basis of innovative and cooperative relations of the company “FoodMaster”

Amendments to the current legislation on the activities of personal subsidiary farms of the population provide for determining the status of personal subsidiary farms of the population, ensuring the rational use of land in rural settlements, access to measures of state support for personal subsidiary farms of the population (Semenov *et al.*, 2021), as well as ensuring the formation of plans and programs for the development of personal subsidiary farms in districts and regions of the country.

Conclusions

The formation and development of the market of milk and dairy products depends on the condition, importance and maturity of the infrastructure, which must be regulated by the state. It should be noted that in the context of low solvency of the population, imported foreign dairy products create significant competition for domestic products (Junaydullaevich, A. A. *et al.*, 2021). Therefore, the competitiveness of Kazakhstan's dairy products can be increased by producing products that are adapted to world standards and meet the requirements of foreign markets (Manual, O., 2005).

This innovative investment program will allow “FoodMaster” to increase production of dairy products, process dairy products in the country in accordance with advanced international standards, as well as expand the range of dairy products for consumers and their range.

In conclusion, the importance of cooperation and integration between private farms and the innovative dairy processing company "FoodMaster" in the development of dairy farming in the country. It was determined that this innovative milk processing company is the first non-waste deep milk processing company established in Kazakhstan, which has an innovative high-tech milk processing company based on cooperation between individuals and farms, which meets the general quality requirements (Todde, G. *et al.*, 2018).

It is proposed to introduce and create in all regions of Kazakhstan the production experience of the innovative dairy processing company "FoodMaster-Shymkent" in the deep processing of integrated milk on the basis of cooperation between farms and private households.

Introduction of innovative services in milk processing in milk production, implementation of processes of innovation and cooperation between farms: creation of innovative and cooperative complexes for milk production, milk collection, packaging and sale, further development of the country's dairy industry, food security, helps to meet consumer demand for dairy products (Yesbolova, A. Y. *et al.*, 2016). Existing innovations will allow qualitative structural changes in the dairy industry, rapid economic growth, increase the competitiveness of the dairy industry.

References

Aidarova, A., Uskenov, M., Zhakeshova, A., Dosmuratova, E., & Kulanova, D. (2016). The economic analysis and pre-requisites for creation of a cotton and textile cluster in the republic of Kazakhstan. *Indian Journal of Science and Technology, 9(5),* 1-5.

Alimardanova, M., & Khamzina, Z. (2021). Kazakhstan zeolites as a perspective material in the water treatment of the Dairy Industry. *Bulletin of National Academy of Sciences of the Republic of Kazakhstan*, (1), 18-25.

Chagwiza, C., Muradian, R., & Ruben, R. (2016). Cooperative membership and dairy performance among smallholders in Ethiopia. Food policy, 59, 165-173.

Cole, J. B., Eaglen, S. A., Maltecca, C., Mulder, H. A., & Pryce, J. E. (2020). The future of phenomics in dairy cattle breeding. *Animal Frontiers, 10(2),* 37-44.

Fiore, M., Galati, A., Gołębiewski, J., & Drejerska, N. (2020). Stakeholders' involvement in establishing sustainable business models: The case of Polish dairy cooperatives. *British Food Journal*.

Galaso, P., & Miranda, A. R. (2022). Strategic collaboration in agro-industrial clusters: territorial dynamics within the dairy industry in Uruguay. *Competitiveness Review: An International Business Journal*, (ahead-of-print).

Gavrilova, Z. V. (2014).On the question of the application of innovative technologies in dairy cattle breeding in Israel. *Collection: Organizational and economic mechanism of innovative development of the agro-industrial complex: a collection of scientific papers based on the materials of the interregional scientific and practical conference*. Voronezh, 149-156.

Grau, A., Hockmann, H., & Levkovych, I. (2015). Dairy cooperatives at the crossroads. *British Food Journal.*

Grigoryevich, S. V., Asylbekovich, B. D., Saldarovich, A. A., Kirillovich, K. N., Kambarbekovich, K. A., & Vladimirovich, A. A. (2021). Factors of nonspecific resistance of calves in dairy cattle breeding. *Bulletin of National Academy of Sciences of the Republic of Kazakhstan*, (1), 81-88.

Holloway, G., Nicholson, C., Delgado, C., Staal, S., & Ehui, S. (2020). Agroindustrialization through institutional innovation Transaction costs, cooperatives and milk-market development in the east-African highlands. *Agricultural economics, 23(3),* 279-288.

Junaydullaevich, A. A., & Jamshedovna, Q. H. (2021). Organizational and economic mechanisms for the development of competitive agricultural production on the basis of cooperative relations. *Academic Journal of Digital Economics and Stability, 6,* 142-147.

Kyrylov, Y., Hranovska, V., & Zhosan, H. (2021). Formation of the national competitive model of agricultural enterprises development under the conditions of globalization. *Bulletin of National Academy of Sciences of the Republic of Kazakhstan*, (2), 81-89.

Manual, O. (2005). The measurement of scientific and technological activities. Proposed Guidelines for Collecting an Interpreting Technological Innovation Data, *30*, 162.

Semenov, V. G., Baimukanov, A. D., Alentayev, A. S., Mudarisov, R. M., & Karynbayev, A. K. (2021). Dairy productivity of holstein cows of different breedings under the conditions of commercial dairy farms. *Bulletin of National Academy of Sciences of the Republic of Kazakhstan*, (3), 110-115.

Todde, G., Murgia, L., Caria, M., & Pazzona, A. (2018). A comprehensive energy analysis and related carbon footprint of dairy farms, Part 2: Investigation and modeling of indirect energy requirements. Energies, *11(2),* 463.

Uskenov, M. K., Esbolova, A. E., & Mutalieva, A. A. (2021). Development of dairy farms on the basis of innovation-cooperation. *Proceedings of the International scientific-practical conference "Auezov readings-19: 30 years of independence of Kazakhstan".*

Yesbolova, A. Y., Mergenbaeva, A. T., Abdikerimova, G. I., Kydyrova, Z. S., Kunafina, G. T., & Maciejczak, M. (2016). Issues and prospects of poultry industry development in Kazakhstan. J. Advanced Res. L. & Econ., *7*, 685.

А.А. Муталиева, А.Е. Есболова, В.Н. Сейтова, А.Н. Исахметова, Ж.С. Казанбаева

Сүт саласында инновациялық-кооперациялық кешенді дамыту

Аңдатпа:

Мақсаты: Мақалада Қазақстанның сүт саласының қазіргі жағдайы мен даму динамикасына талдау жүргізілген. Ауыл шаруашылығы санаттарында өндірілген сүттің көлемі және олардың елдің жалпы сүт өндірісіндегі құрылымдық үлес салмағы зерттелді және соңғы жылдары ауыл шаруашылығының үлесі 72-75% құрайтыны анықталды.

Еліміздің сүт өнеркәсібінің дамуы халық пен шаруа (фермер) қожалықтары арасындағы инновациялық және кооперативтік байланыстарға негізделген кешендер құруға негізделген. «ФудМастер-Шымкент» сүт өңдеу кәсіпорнының тұрғындардың жеке қожалықтары мен шаруа қожалықтары арасында инновациялық және кооперативтік байланыстарды құру схемасы әзірленіп, ұсынылды.

Компанияның инновациялық-кооперациялық байланыстары негізінде сүтті жинау, сүтті қайта өңдеу схемасында шаруашылықтар арасындағы кооперациялық байланыстарға қатысушылар ретінде мынадай топтарды қосу ұсынылды: сүт өндірушілер — халықтың жеке шаруашылықтары, шаруа (фермер) қожалықтары және жеке кәсіпкерлер; сүт өңдеуші — сүт өңдеуші инновациялық-кооперациялық кешен; сүт өнімдерін тұтынушылар — халық және арнайы сауда ұйымдар.

Әдісі: Зерттеу мақсатына жету үшін жалпы ғылыми әдістер кеңінен қолданылды, атап айтқанда мазмұнды талдау әдісі; талдау әдісі; жалпылау әдісі; графикалық интерпретация әдісі.

Қорытынды: Инновациялық-кооперациялық кешенді дамыту мақсатында «ФудМастер» сүт компаниясы инновацияның 4 түрін қамтыған инновациялық кәсіпорындар қатарына жатады, өнімдік инновациялар мен үрдістік инновациялар, маркетингтік инновациялар мен ұйымдық инновацияларды өз ішіне қамтығандығы зерттеліп, негізделген. Бұл Қазақстанда алғаш рет ИСО–9000 халықаралық стандартын енгізген, халықаралық стандарт бойынша өндірісті тиімді басқаратын, алғаш рет өндірісте сапалы инновациялық сүт өнімдерінің көптеген түрлерін шығаруды жүзеге асырған инновациялық сүт компаниясы.

Бұл инновациялық-кооперациялық кешенөндірістік инновациялық қызметтерді өндіріске ендірген, сүтті қалдықсыз қайта өңдейтін компания ретінде, халықтың азық-түлікке деген қауіпсіздігін сақтауға, халықтың сүт сұранысын қанағаттандыруға жағдай жасайды.

Тұжырымдама: Қолданыстағы инновациялық технологиялар, сүт шаруашылығындағы санаттардың сапалы құрылымдық өзгеруіне, қарқынды экономикалық өсуіне, сүт өндірісінің бәсекеге қабілеттілігін арттыруға, сонымен бірге, ұйымдағы әзірленген бағдарлама өнім көлемін арттыруға, сүтті халықаралық стандарттарға сай өңдеуге, сондай-ақ, тұтынушыларға сүт ассортиментін кеңейтіп жатқаны зерделеніп, ұсыныстар беріліп жатқаны айтылады.

Кілт сөздер: сүт саласы, инновация, кооперация, инновациялық-кооперация, ұйымдық инновация, инновациялық-кооперациялық кешен, сүт өнімдері, сүт өңдеу, инновациялық өнімдер, маркетингтік инновация.

А.А. Муталиева, А.Е. Есболова, В.Н. Сейтова, А.Н. Исахметова, Ж.С. Казанбаева

Развитие инновационно-кооперационного комплекса в молочной отрасли

Аннотация:

Цель: В статье проведен анализ современного состояния и динамики развития молочной отрасли Казахстана. Исследованы объемы произведенного молока сельскохозяйственными категориями и их структурный удельный вес в общем молочном производстве страны и установлено, что доля сельского хозяйства в последние годы составляет 72–75 %.

В развитии молочной отрасли страны базируется создание комплексов на основе инновационно-кооперационных связей между населением и крестьянскими (фермерскими) хозяйствами. Разработана и предложена схема создания инновационно-кооперационных связей между отдельными хозяйствами населения и крестьянскими хозяйствами молокоперерабатывающей компании «ФудМастер–Шымкент».

В схеме сбора молока, глубокой переработки молока на основе инновационно-кооперационных связей компании в качестве участников кооперационных связей между хозяйствами предложено включить следующие группы: производители молока — индивидуальные хозяйства населения, крестьянские (фермерские) хозяйства и индивидуальные предприниматели; переработчик молока — молокоперерабатывающий инновационно-кооперационный комплекс; потребители молочной продукции — население и специальные торговые организации.

Методы: Для достижения цели исследования широко использовались общенаучные методы, в частности, метод контент-анализа, метод анализа, метод обобщения, метод графической интерпретации.

Результаты: В целях развития инновационно-кооперационного комплекса Молочная компания «ФудМастер» относится к числу инновационных предприятий, включающих 4 вида инноваций, исследовано и

обосновано, что она включает в себя продуктовые инновации и трендовые инновации, маркетинговые инновации и организационные инновации. Это инновационная молочная компания, впервые внедрившая международный стандарт ИСО–9000 в Казахстане, которая эффективно управляет производством по международному стандарту, впервые осуществила выпуск на производстве многих видов качественной инновационной молочной продукции.

Этот инновационно-кооперационный комплекс, как компания по глубокой безотходной переработке молока, внедрившая в производство производственные инновационные услуги, создает условия для обеспечения продовольственной безопасности населения, удовлетворения потребностей населения в молоке.

Выводы: Отмечается, что изучаются существующие инновационные технологии, качественное структурное изменение категорий в молочной промышленности, интенсивный экономический рост, повышение конкурентоспособности молочной продукции, а также разработка в организации программы по увеличению объемов производства, переработке молока в соответствии с международными стандартами, а также выдача рекомендаций потребителям по расширению ассортимента молока.

Ключевые слова: молочная промышленность, инновации, кооперация, инновации-кооперация, организационные инновации, инновационно-кооперативный комплекс, молочные продукты, переработка молока, инновационные продукты, маркетинговые инновации.

DOI 10.31489/2022Ec4/102-111
JELH26
УДК336.228.34

G.A. Nassyrova*[1], A.A. Nurumov[1], V.E.Ponamorenko[2], A.E. Zhamiyeva[1], D.A. Askarov[1]

[1]L.N. Gumilyov Eurasian National University, Kazakhstan
[2]Russian Foreign Trade Academy, Russia
[1]gnassyrova@yandex.ru, [2]nurumov_aa@enu.kz, [3]vladpon@inbox.ru, [4]zhami2805@mail.ru, [5]daulet999@mail.ru

[1]https://orcid.org/0000-0001-6819-4946, [2]https://orcid.org/0000-0002-2720-0999,
[3]https://orcid.org/0000-0002-3071-4405,[4]https://orcid.org/0000-0002-7921-847X

[1]Scopus Author ID:57220834692, [2]Scopus Author ID: 56658659300,
[3]Scopus Author ID: 57215416070, [4]Scopus Author ID: 57216620579

Gray tax avoidance schemes

Abstract

Object: The article reveals the specific aspects of improving the tax administration system in terms of applying various measures to combat gray schemes and tax evasion.

Methods: The work uses systemic and institutional approaches, methods of induction and deduction, generalization, qualitative and quantitative critical analysis.

Findings: The study made it possible to substantiate the need to ensure the transparency of the tax policy of the modern state to achieve public confidence, the availability of government decisions to ensure tax revenues to the budget. Achieving the social responsibility of business is based on its transparency, including in the aspect of fulfilling tax obligations through the coverage and availability of information on paid taxes. At the functional level, from the point of view of the administrator, the transparency of taxation is based on the availability of the transmitted information not only to one tax authority, but also to all others. An analysis of domestic and international experience in the field of countering the laundering of proceeds from tax crimes and the fight against false enterprises revealed the possibility of identifying illegal transactions and their suppression.

Conclusions: To clarify the general tax behavior of an economic entity, information is needed for retrospective identification and prevention of possible tax evasion in the future. Based on the results of the analysis, the reasons for the economy's retreat into the shadows are revealed, measures are proposed to combat financial crimes in the field of taxation and ensure an increase in the budget revenue base.

Keywords: tax administration, shadow economy, tax evasion, tax optimization, false enterprises, economic growth, tax discipline.

Introduction

Ensuring macroeconomic stability and sustainable economic growth, along with other conditions of financial policy, are based on the sufficiency of state support. The search for funds for these purposes is associated with the identification of additional sources of the state budget, incl. by expanding the tax base, ensuring the efficiency of the tax system. Obtaining these results not least depends on the quality of tax administration through the optimization of taxes and payments, as well as activities to counter the use of various "gray schemes". President K. Tokayev, in his Address to the people of Kazakhstan, speaking about the importance of a fair redistribution of national income, pointed out the need to develop a tax policy that is understandable to all citizens of the country.

The institutionalization of the President's instructions will be reflected in the New Tax Code of Kazakhstan. One of the measures may be the differentiation of tax rates, which will be an additional incentive to diversify the economy and replenish the budget. In this sense, the digitalization of the tax sphere will become one of the effective tools in the fight against the "shadow economy". Corruption schemes, as a rule, take shape in the shadow economy (Poslanie 2020). To counter various tax evasion schemes, the effectiveness of tax policy should be improved. This is caused, firstly, by the need to ensure sustainable replenishment of the budget, and by solving the problem of achieving transparency in tax relations, secondly.

An analysis of the current situation in the field of combating financial, namely tax, violations allow us to draw the following conclusions. Limiting and eliminating the possibility of gray schemes in the economy requires the modernization of tax administration methods and tools, the wider use of digital technologies to improve the quality of tax and customs control. In a set of measures to combat illegal forms of business, it is necessary to incorporate and coordinate the activities of financial monitoring bodies with tax and customs

* Corresponding author. E-mail address: *gnassyrova@yandex.ru*

structures. Achieving transparency in tax, customs and commercial transactions should be a challenge for both tax and financial authorities, and for the business itself.

The researchers put forward a hypothesis about the need for a systematic approach to solving the problems of tax evasion and creating institutional barriers to the manifestation of gray schemes in the economy. There is a need for coordinated actions of tax, customs and financial monitoring authorities based on consistent digitalization of commercial transactions.

Literature Review

Many works of both domestic and foreign authors are devoted to the study of the essence of tax evasion. In the domestic literature, this issue is dealt with by leading scientists in the field of economics and law: L.P. Pavlova, A.V. Bryzgalin, T.F. Yutkina, V.G. Panskov, D.G. Chernik, A.A. Nurumov, E.V. Porokhov, A.T. Shaukenov, S.T. Alibekov and others. Among foreign authors, a significant contribution to the development of various aspects of tax evasion was made by: G.G. Hoppe, O. Williamson, E. Feig et al. The following works are devoted to the study of the shadow economy from the point of view of tax evasion as one of the factors of its formation: I.P. Belozerov, E.V. Glazova, N.M. Golovanov, V.V. Lunev, A.B. Zeynelgabdin, R.B. Gabdullin, B.T. Aimurzina, and foreign ones: D. Enste, E. De Soto, F. Harrison, F. Schneider. In the Kazakh scientific literature, the problems of the shadow economy in the context of the impact of tax evasion have not yet been fully considered.

Separate works are devoted to the study of the concept of the shadow economy and its negative consequences. Worked in this direction: S.I. Bogachev, Z.P. Zagoskina, N.A. Baizhanov, M.K. Abdrazakova and others. Bogachev analyzed the relationship between economic crimes and the non-monitored sector of the economy, identified the reasons for the transfer of resources to the shadow circulation and gave general recommendations for its prevention. Abdrazakova analyzed the influence of shadow processes on all spheres of the national economy. Baizhanov assessed the effectiveness of existing measures to prevent the shadow economy and offered generalized recommendations for combating shadow processes at the level of the region and the country.

Meanwhile, these studies do not reveal the place of tax transactions in the shadow economy and their impact on budget formation. Thus, despite the existence of scientific papers on the study of shadow processes in economic science, a gap has formed on the analysis of gray schemes for avoiding taxation. The current situation determines the novelty and relevance of this study in terms of developing an integrated approach to assessing the negative impact on the formation of the state budget because of shadow processes. Regarding Kazakhstan, the timeliness of developments in this direction is caused by the current reforms in the fiscal sphere. Existing domestic studies do not correspond to the current situation due to the prescription of their conduct, and therefore the possibility of applying their results in practice is limited. This study will fill in the gaps in theoretical and practical aspects.

Methods

The used main research methods were monitoring and measurement, systemic and institutional approaches, methods of induction and deduction, generalization, qualitative and quantitative critical analysis.

Results

From the point of view of the taxpayer, the efficiency and effectiveness of financial management is achieved, among other things, by optimizing tax deductions. Some entrepreneurs understand tax optimization only as evasion, which significantly narrows its essence and meaning. The tax authorities are very skeptical about this wording. In the context of taxation, optimization is the achievement of harmony between the interests of the tax authorities, as a representative of the state, and entrepreneurs, as taxpayers, embodying the principal-agency relationship. This manifests a conflict of interests between taxpayers and tax authorities, the resolution of which is possible subject to transparency or transparency of tax relations.

Transparency means not only comprehensibility, but also mutual honesty as the basis of mutual trust. In other words, in a broad sense, tax optimization is a set of actions aimed at the maximum legal reduction of the tax burden for the company, leading to an increase in financial results. It is necessary to distinguish between tax savings and tax optimization. With tax savings, the enterprise tries to reduce tax payments, in the case of optimization, activities to increase the financial result can lead to an increase in tax payments (Kelchevskaya, at al., 2019).

The main method of counteracting tax violations has been and remains tax administration. The classical definition of tax administration presents it as a set of measures and methods carried out by authorized state

bodies, including tax authorities for the collection of taxes and fees to the budget, and consisting in the implementation of tax control, the application of methods to ensure the fulfillment of an unfulfilled tax obligation, as well as measures for the enforcement of tax debt collection (Official website, 2022). If the activities of taxpayers are partly aimed at minimizing taxation, then tax administration is aimed at maximizing revenue mobilization for the state. At the same time, one of the criteria for the effectiveness of tax administration is the reduction for the taxpayer of labor costs, time, and money in fulfilling the tax obligation since non-payment of taxes to the budget entails criminal or administrative liability (Nevzorova, et al., 2017). It should be noted that on the one hand, there is an appearance of pressure from the state to maximize tax payments, in reality it should be understood that the state does not set the task of "crushing" the entrepreneur with taxes but is interested in optimizing the volume of budget revenues. On the other hand, the taxpayer should come to the realization of involvement in the country's financial system while maintaining the financial condition. Any kind of business is socially responsible, as it is an integral part of the economic system.

The social responsibility of the entrepreneur is manifested along with many factors in the accurate performance of the functions of the taxpayer. The purpose of the state tax policy is the formation of harmonious mutual interests and tax relations. This means that the entrepreneur has enough financial resources for development and active participation in social life. Paying a "fair" amount of tax along with providing funds for public services such as health care, education and others is seen as a responsible act of the company for the benefit of society. Tax evasion means the rejection of social obligations. Such behavior can leave the company vulnerable to public opinion, damage their reputation and undermine public confidence in them. If tax planning is considered acceptable behavior, then tax evasion is more of a gray scheme, an illegal act. The term "tax evasion" is used to refer to the legitimate, but possibly aggressive, use of financial instruments and other mechanisms to obtain an unintended or unexpected tax result by the government. The legislator interprets such situations as tax crimes. The practice of combating tax crimes is based on the enforcement of criminal legislation. The Criminal Code provides for the responsibility of individuals and legal entities for tax evasion and fees, however, the difficulty in understanding the basics of taxation and the corpus delicti itself often leads to "legal errors". In a few cases, actions committed through negligence are qualified as tax evasion, and therefore the responsibility of law enforcement agencies is great (Townsend, 2012). Tax evasion and the shadow economy should be seen as equal activities. The weakening of the country's economy is a consequence of tax evasion, as well as the shadow economy. Tax evasion by "bending" the rules of the tax system is not illegal, but many see it as operating within the letter rather than the spirit of the law. The issue falls into the realm of ethics because businesses have choices in their approach to interpreting the law and therefore paying taxes. While remaining legal, the business decides how to interpret the tax laws and organize its affairs. This may extend to where he pays his taxes (Lenz, (2020).

In accordance with the National Development Plan of Kazakhstan, the level of the shadow economy as a percentage of GDP in 2021 should be no more than 21.5%, in 2022 - no more than 19.9%, in 2023 - no more than 18.2%. According to the Bureau of National Statistics, the level of the shadow economy in 2019 was 23.7% (Postanovlenie, 2021). In turn, in 2021, the actual share of the shadow turnover corresponded to 20.2% (Press-sluzhba, 2021). The decrease in the shadow turnover in Kazakhstan generally correlates with the target indicators defined by the strategic documents. If the current dynamics continue, by 2025 the level of the shadow economy may reach about 16–17%.The number of criminal cases initiated for tax evasion is presented according to the data of the Committee on Legal Statistics and Special Records of the General Prosecutor's Office of the Republic of Kazakhstan (Table 1).

Table 1. Number of criminal cases initiated for tax evasion for 2017-2021

Indicator	2017	2018	2019	2020	2021
Number of tax audits	42018	17763	224785	69834	-
Excited criminal cases	295	477	153	175	138
Share of initiated cases, %	0.7	2.7	0.06	0.3	-
Note - compiled by the authors based on data from the State Revenue Committee					

The current threshold of $145,000 (the amount of additional assessments after a tax audit) for starting a criminal case puts the largest taxpayers at significant risk. In fact, after a tax audit, a criminal case may be initiated by default, which further complicates the situation. In 2017, amendments were made to Article 245 of the Criminal Code, but, unfortunately, they turned out to be ineffective to a certain extent (Alstadsater, 2022). The main burden of reducing the shadow turnover falls on the indicators determined by the State Revenue Committee, which is about 50% of the total established volume of reducing gray schemes in the

economy. This category includes the sum of the difference between income and tax revenues from the average, the discrepancy between Kazakhstani statistical data and those of border countries. President K. Tokaev pointed out the discrepancies in billions of dollars according to the reports of "mirror" statistics with the customs authorities of the PRC in his speech in the Mazhilis of the Parliament, which indicates the presence of a shadow turnover at border posts (Vystuplenie, 2022). According to the State Revenue Committee, the average sectoral tax burden coefficient for all industries should vary in the range of 3%, while for some types of industries this figure can increase up to 6%.

Most companies that do not reach this indicator use various tax evasion schemes. To reduce the level of the shadow economy, serious measures are required to improve tax and customs administration. The introduction of electronic invoices (ESI) since 2017 has become one of the first measures to reduce the shadow turnover. Naturally, this led to a decrease in the turnover of paper invoices, which were often used in tax evasion schemes by reducing the tax base in past periods. Starting from 2019, most taxpayers have implemented ESF, which excludes the possibility of issuing invoices for the previous period. At the beginning of February 2021, 505 thousand users were already registered using the ESI, because of which an additional 149 billion tenge was received by the budget in 2020 (Remeikiene, 2018). Reducing the likelihood of shadow turnover through tracking goods, works and services from the initial to the final consumer through a risk management system that differentiates taxpayers by risk became possible with the introduction of the ESI. These measures helped to reduce the shadow turnover by 3% from 2019 to 2021 and, accordingly, increase tax revenues (Table 2).

Table 2. Dynamics of taxes and fees to the state budget in 2017-2021

Indicators	2017		2018		2019		2020		2021	
	Billion tg.	% by 2016	Billion tg.	% by 2017	Billion tg.	% by 2018	Billion tg.	% by 2019	Billion tg.	% by 2020
The receipt of taxes in the budget	7153	118.7	8191	114.5	9689	118.3	9754	100.7	11369	116.6
Note - compiled by the authors based on data from the State Revenue Committee										

As a result of the application of the ESI, already in 2019, the volume of tax revenues increased by 18.3%. In 2020–2021 despite the pandemic crisis, there was also an increase in tax revenues. The introduction of special modules on the state portal (ESI, accompanying invoice for goods, Virtual warehouse) introduces a certain transparency into the activities of business entities, which in turn leads to an increase in budget revenues through a decrease in the level of shadow economy. The use of one-day firms for cashing out money, evading taxes and reducing the tax base is one of the ways to form a shadow turnover. According to some estimates, enterprises spend about 5-6% of their turnover on such services. Unfortunately, once a crime has been committed, it is difficult to trace the cashed-out funds. Funds are withdrawn through offshore companies, various corruption schemes are used, illegal activities are financed, etc. The main tool for combating such firms is to recognize them as false enterprises because of a court decision, subsequent notification of counterparties (beneficiaries) for exclusion from CIT deductions and VAT offset for such firms. From 2017 to 2021, the number of false enterprises recognized by the court increased by 665% and amounted to 2430 false enterprises. In 2020, there was a decline of 60.9%, and already in 2021 there was an increase to 891 false enterprises (Fig. 1).

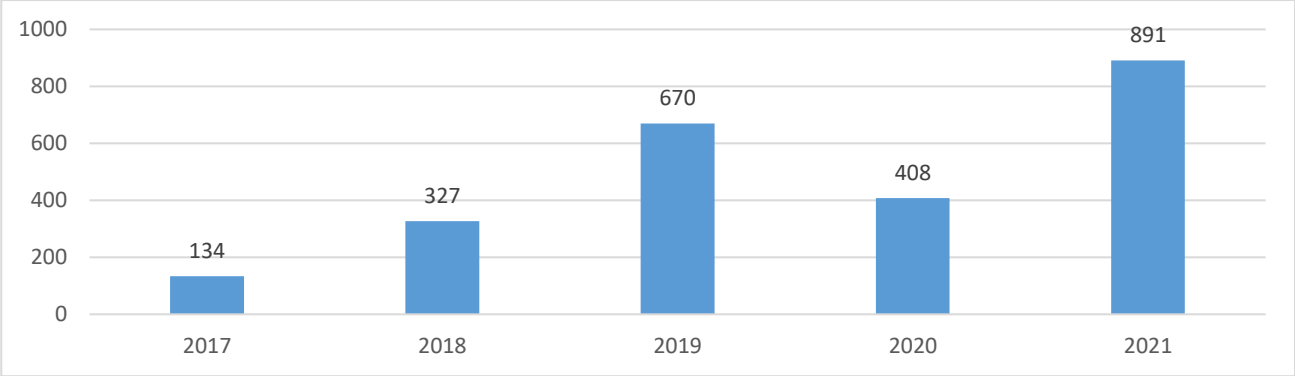


Figure 1. Number of recognized false enterprises (2017-2021)

Note - compiled by the authors based on data from the State Revenue Committee

These enterprises helped hide billions in tax revenues from taxes and reduce the industry-average tax burden ratios for a few enterprises.

Discussions

Tax crimes are not only a negative phenomenon in the economic life of the country, but also in cases where they are committed as predicate "prior" to the crime of money laundering. That is, when a criminal who has committed a tax crime has an intent to hide the proceeds of crime and, through a series of intermediate operations, to give these incomes a legitimate character. Tax avoidance schemes are designed to exploit weaknesses in national tax laws. For example, they apply to payments or dividends that firms make to shareholders. So-called cumulative profit transactions are transactions in which shares were sold from one investor to another just before the dividend was paid (cumulatively or with dividends) but delivered afterwards (without dividends). A similar strategy is applied in countries where domestic and foreign investors are treated differently in terms of taxation. Between 2000 and 2020, this practice cost 10 governments, including Germany, Spain, France and the US, a total of 141 billion Euros. From a legal point of view, this scheme belongs to the gray schemes (Leggett et al., 2021) In the international community, primarily the Financial Action Task Force on Money Laundering (FATF, 2007) and the OECD, individually and in cooperation with each other, form the conceptual and regulatory framework for countering the laundering of proceeds from tax crimes. Among the main typologies (schemes) identified by financial intelligence units and tax authorities are:

-VAT carousel.

- trading scheme of dividend arbitrage.

The carousel scheme is marked by the cyclicity of transactions performed between the participants of the scheme in the shortest possible time for settlements (as a rule, within one day). The economic basis of the scheme is the opportunity to receive a VAT refund from the budget for the exported goods upon receipt of payment for it in "live" money (Fig. 2). To this end, fraudsters use fictitious documents to formalize export and import transactions and distort their prices.

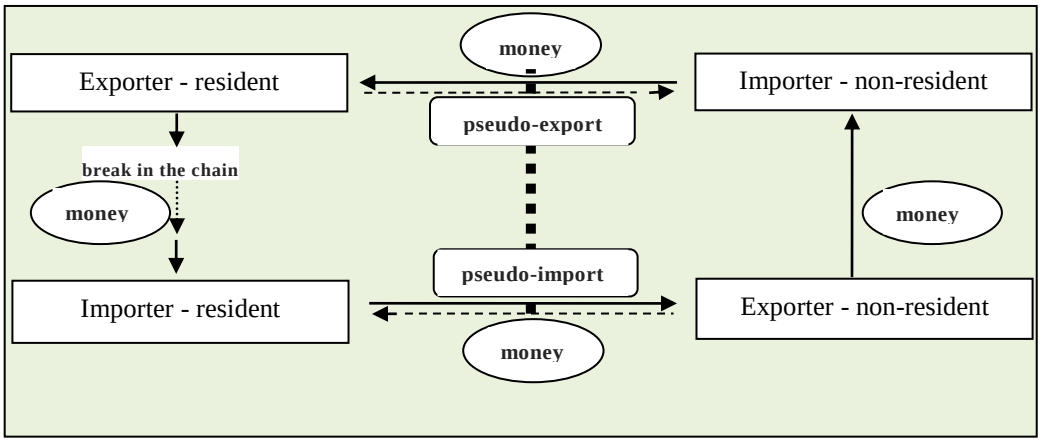


Figure 2. "Optimization" of VAT in export-import operations

Note - compiled by the authors based on (FATF, 2007)

Funds for the initial financing of the scheme are usually obtained through offshore companies, or there may be a bank loan or a loan from a legal entity for VAT refunds (Fig. 3). The scheme involves the exporter receiving money from the non-resident importer, transferring it to the importer and then withdrawing the money to the non-resident for further "scrolling". The most important element of masking the scheme is to break the chain of operations in the scheme at the stage of transferring funds to the importer. In this regard, the scheme necessarily contains a fictitious firm (group of firms) - a "conversion center", which, at the end of the cycle of operations, disappears without a trace with all the documentation.

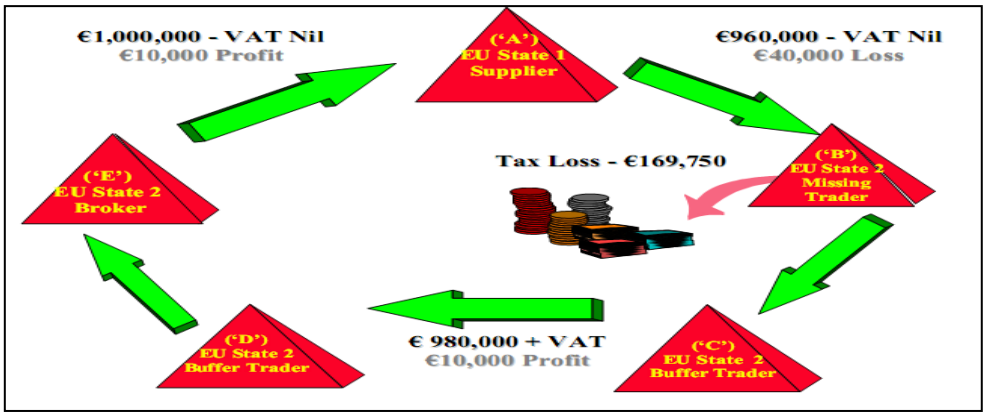


Figure 3. Carousel VAT avoidance scheme

Note - taken from the source (EAG, 2009)

Trading schemes of dividend arbitrage (Fig. 4) imply the placement of shares in various tax jurisdictions to minimize taxes paid. The essence of the scheme is as follows:

1) A hedge fund owns bank shares that pay dividends.

2) The bank briefly lends shares to a third party in a country with lower tax rates when it is going to pay dividends.

3) When it comes time to pay taxes, bank customers can use this circumstance to reduce their taxes on dividend payments to 10% or less.

Figure 4. Dividend arbitrage trading schemes

Note - Taken from the source (Buettner et al, 2020)

On behalf of the European Parliament, the European Securities Supervisory Authority (ESMA) and the European Banking Supervisory Authority (EBA) investigated dividend arbitrage to assess potential threats to the security of financial markets and government budgets. In April 2020, the EBA published a report on the authorities' approaches to addressing market integrity risks associated with dividend arbitrage schemes. The report contains the results of an investigation into the actions of prudential oversight bodies and national financial intelligence agencies. To improve the future regulatory framework, the EBA has published a ten-point action plan.

The shadow economy, as part of the overall economy, hidden from society and the state, and outside of state accounting and control, is a significant reserve for increasing the country's gross domestic product and increasing the efficiency of the state's economic activity as a whole, of course, if effective measures are taken to the withdrawal of this part of the economy from the shadows. Thus, according to the International Monetary Fund (IMF), the share of the shadow economy in Kazakhstan is 38.88% of the country's gross domestic product (GDP). This is the 45th place out of 159 countries of the world in the IMF's "Shadow Economy of the World" rating. For comparison, in the leading countries of the rating - Switzerland, the USA and Austria, according to the IMF, the share of the shadow economy does not exceed 9% of the size of GDP (Tebekin, 2021). According to some experts, the volume of shadow transactions for cashing out is over 5 billion tenge. At the same time, the leaders are the largest regions of Almaty, Nur-Sultan, Shymkent, Karaganda region. The same regions are characterized by a high degree of tax risks. The government of Kazakhstan is taking steps to reduce the share of the shadow economy. Moreover, these measures are aimed, among other things,

at improving the quality of goods and services. One of the tools used is mandatory labeling of goods. According to the calculations of the Ministry of Finance of the Republic of Kazakhstan, the shadow turnover for some goods from six groups (which are included in the list today) reaches 63%. But with labeling, the gray market will have no chance of remaining in the shadows. Accordingly, due to taxes on official sales, revenues to the budget will increase by 2025, for six product groups, the volume of additional revenues is expected to be about 58 billion tenge. These calculations are like the dynamics of receipts after the introduction of labeling of goods from natural fur. Only in the first year of the pilot, a 50% increase in tax revenues became visible. Thanks to marking, you can get a signal from the market close to reliability. This allows the state to better plan production volumes, its geography, and expected revenues to budgets of different levels (Zhamiyeva, Nassyrova, 2021).

But still important is not only the direct receipt of taxes to the budget, but the overall cumulative effect of reducing the share of the shadow economy. Positive effects include:

- increasing sales taxes;
- creation of new jobs;
- increase in export sales;
- growth of production in conditions of fair competition;
- improving the quality of products.

It should be noted that the shadowing of the economy is intensifying due to the financial and economic crisis, which negatively affects the state of the business sector. The weakening of the national currency against the main reserve currencies, which began in 2016, continues until today, along with the currencies of other countries with emerging markets, including the countries of the Eurasian Union.

Conclusions

As a result of the study, the factors of the emergence and development of the shadow economy in terms of tax evasion were identified, the main schemes of tax crimes at the national and supranational levels were revealed, government measures were analyzed to curb attempts to evade taxes, incl. under AML CFT. The analysis of the current practice made it possible to establish the following reasons for the economy to go into the shadows:

- imperfection of economic, infrastructural incentives to reduce the cash form of payment;
- administrative barriers and insufficient level of state support for open entrepreneurship;
- negative impact of illegal activities;
- insufficient incentives for citizens and entrepreneurs to voluntarily exit the shadow economy;
- decrease in the level of social protection of the population in the conditions of the economic crisis (Postanovlenie, 2021).

To suppress tax crimes, the use of gray schemes and counter tax evasion, the Government has developed and applied a few measures to limit and prevent such attempts. The Ministry of Finance of the Republic of Kazakhstan, together with the interested state bodies, is implementing an action plan to combat the shadow economy. So, among the measures to increase budget revenues for 2021-2022 the following were listed:

- implementation of the action plan to combat the shadow economy and illegal trade turnover on the borders of the state.
- improvement of the national system of traceability of goods; modernization of the customs infrastructure with the introduction of digital solutions.
- expanding the pilot for horizontal monitoring of large businesses.
- strengthening of interaction with foreign tax administrations.
- improvement of legislation on transfer pricing.
- consideration of the issue of lifting the moratorium on inspections of unscrupulous micro and small businesses (Zhamaubaev, 2021).

Thus, measures to combat tax evasion should be comprehensive, systemic, considering the interests of all parties, and not allowing “pressure” on taxpayers. To determine the applied and possible tax evasion schemes accurately and correctly, it is necessary to develop a systematic methodology containing application and implementation algorithms as recommendations for the work of tax authorities. Ensuring the effectiveness of such work requires the introduction of special training for tax officials and a financial monitoring system for identifying tax evasion schemes using the experience of leading countries.

References

Alstadsater, A., Johannesen, N., Herry, S., & Zucman, G. Tax evasion and tax avoidance. *Journal of Public Economics*, 2022, 206, 104587. DOI:https://doi.org/10.1016/j.jpubeco.2021.104587.

Buettner, T., Holzmann, C., Kreidl, F. et al. Withholding-tax non-compliance: the case of cum-ex stock-market transactions. *Int Tax Public Finance.* 2020, 27, 1425–1452. DOI: https://doi.org/10.1007/s10797-020-09602-9

Financial Action Task Force on Money Laundering. 2007. *fatf-gafi.org.*Retrieved from http://www.fatf-gafi.org

Leggett T., Daubenberger M., & Schroem O. Tax cheat schemes cost governments billions. 2021. *bbc.com* Retrieved from https://www.bbc.com/news/business-58984813

Lenz, H. Aggressive Tax Avoidance by Managers of Multinational Companies as a Violation of Their Moral Duty to Obey the Law: A Kantian Rationale. *J Bus Ethics*. 2020. 165, 681–697. DOI: https://doi.org/10.1007/s10551-018-4087-8.

Nevzorova E. N., Kireenko A. P., Sklyarov R. A. Bibliometric Analisis of the Literature on Tax Evasion in Russia, and Foreign Countries. *Journal of Tax Reform*. 2017. 3(2), 115–130. DOI: https://doi.org/10.15826/jtr.2017.3.2.035.

Remeikiene, R., Gaspareniene, L., & Viktoras, C. Identification of the shadow economy determinants for the eurozone member states: application of the mimic model. Journal of Business Economics and Management, 2018, 19(6), 777–796. DOI: https://doi.org/10.3846/jbem.2018.6276

Townsend, J. A. Theories of Criminal Liability for Tax Evasion. *ssrn.com.* 2012. Retrieved from https://ssrn.com/abstract=2060496. DOI: http://dx.doi.org/10.2139/ssrn.2060496.

Zhamiyeva, A. E., & Nassyrova, G. A. (2021). Impact of the economic crisis on the tax system. *Economic Series of the Bulletin of the L.N. Gumilyov ENU,* 3, 175-184. DOI: https://doi.org/10.32523/2789-4320-2021-3-175-184.

Выступление Главы государства К.–Ж. Токаева на заседании Мажилиса Парламента Республики Казахстан 11.01.2022 г. [Электронный ресурс]. – Режим доступа: https://www.akorda.kz

Жамаубаев Е. К концу 2025 года доля участия государства в экономике сократится до 14 % к ВВП / Е. Жамаубаев [Электронный ресурс]. — Режим доступа: https://primeminister.kz/ru/news

Кельчевская Н. Р. Экономическая среда промышленного предприятия [Текст] / Н. Р.Кельчевская, И. С. Пелымская, С. А. Сироткин. — Екатеринбург: Изд-во Урал. ун-та, 2019. — 244 с.

Официальный сайт Комитета государственных доходов Министерства финансов Республики Казахстан [Электронный ресурс]. — Режим доступа: https://www.gov.kz

Послание Президента К.–Ж. Токаева народу Казахстана [Электронный ресурс]. – Режим доступа: https://www.akorda.kz

Постановление Правительства Республики Казахстан. Об утверждении Комплексного плана мероприятий по противодействию теневой экономике на 2021–2023 годы от 21 сентября 2021 г. № 644. [Электронный ресурс]. Режим доступа: https://adilet.zan.kz/rus/docs/P2100000644

Пресс-служба Премьер-министра Республики Казахстан [Электронный ресурс]. — Режим доступа: https://primeminister.kz.

Рабочая группа ЕАГ по типологиям. Использование внешнеторговых операций для легализации преступных доходов. [Электронный ресурс]. — Режим доступа: https://eurasiangroup.org

Тебекин А. В. Институциональные факторы распространения серой теневой экономики в России [Текст] / А. В. Тебекин. Теоретическая экономика. — 2021. — № 4. — С. 49–65.

Г.А. Насырова,А.А. Нурумов, В.Е. Понаморенко, А.Е. Жамиева, Д.А. Аскаров

Салықтан құтылудың сұр схемалары

Аңдатпа

Мақсаты: Мақалада сұр схемалар мен салық төлеуден жалтарумен күресу үшін әртүрлі шараларды қолдану тұрғысынан салықтық әкімшілендіру жүйесін жетілдірудің нақты аспектілері ашылған.

Әдісі: Жұмыста жүйелі және институционалдық тәсілдер, индукция және дедукция әдістері, жалпылау, сапалық және сандық сыни талдаулар қолданылды.

Нәтижелер: Мемлекеттің салық саясаты бюджетке салық түсімдерін ұлғайту жөніндегі мемлекеттік шешімдердің қолжетімділігін қамтамасыз ету үшін басқа да көптеген белгілермен қатар ашық болуы керек. Мұндай мемлекеттік саясатты жүзеге асыру қажетті қоғамдық сенімді қалыптастыруға мүмкіндік береді. Салық міндеттемелерін орындау бөлігінде бизнестің ашықтығы төленген салықтар туралы ақпараттың қамтылуы мен қолжетімділігі арқылы жүзеге асырылады. Әкімшінің көзқарасы бойынша салықтың ашықтығы бір салық органына ұсынылатын ақпарат басқалардың барлығына қолжетімді болу принципіне негізделген. Салық қылмыстарынан алынған кірістерді жылыстатуға қарсы іс-қимыл және жалған кәсіпкерлікпен күрес саласындағы шетелдік және отандық тәжірибе зерделенді.

Қорытынды: Шаруашылық субъектісінің жалпы салықтық тәртібін нақтылау үшін ретроспективті анықтау және болашақта ықтимал салық төлеуден жалтаруды болдырмау үшін ақпарат қажет. Талдау нәтижелері бойынша экономиканың көлеңкеге түсу себептері айқындалып, салық саласындағы қаржылық қылмыстармен

күресу және бюджеттің кіріс базасын арттыруды қамтамасыз ету шаралары ұсынылды.

Кілт сөздер: салық әкімшілігі, көлеңкелі экономика, салық төлеуден жалтару, салықты оңтайландыру, жалған кәсіпорындар, экономикалық өсу, салық тәртібі.

Г.А. Насырова, А.А. Нурумов, В.Е. Понаморенко, А.Е. Жамиева, Д.А. Аскаров

Серые схемы уклонения от налогов

Аннотация:

Цель: Статья раскрывает особые аспекты совершенствования системы налогового администрирования в части применения различных мер борьбы с серыми схемами и уклонением от налогообложения.

Методы: В работе использованы системный и институциональный подходы, методы индукции и дедукции, обобщения, качественного и количественного критического анализа

Результаты: Проведённое исследование позволило обосновать необходимость обеспечения транспарентности налоговой политики современного государства в целях достижения доверия со стороны общества, доступности правительственных решений по обеспечению налоговых поступлений в бюджет. Достижение социальной ответственности бизнеса базируется на его прозрачности, в том числе в аспекте исполнения налоговых обязательств посредством освещения и доступности информации по оплаченным налогам. На функциональном уровне с точки зрения администратора в основе прозрачности налогообложения лежит доступность передаваемой информации не только одному налоговому органу, но и всем другим. Анализ отечественного и мирового опыта в сфере противодействия отмыванию доходов, полученных от налоговых преступлений и борьбы с лжепредприятиями, раскрыл возможности выявления неправомерных сделок и их пресечения.

Выводы: С целью выяснения общего налогового поведения хозяйствующего субъекта необходима информация для ретроспективного выявления и предотвращения возможного уклонения от налогов в перспективе. По результатам проведенного анализа раскрыты причины ухода экономики в тень, предложены меры по борьбе с финансовыми преступлениями в сфере налогообложения и обеспечению увеличения доходной базы бюджета.

Ключевые слова: налоговое администрирование, теневая экономика, уклонение от уплаты налогов, налоговая оптимизация, лжепредприятия, экономический рост, налоговая дисциплина.

References

Alstadsater, A., Johannesen, N., Herry, S., & Zucman, G. (2022) Tax evasion and tax avoidance. *Journal of Public Economics*, 206, 104587. DOI:https://doi.org/10.1016/j.jpubeco.2021.104587.

Buettner, T., Holzmann, C., Kreidl, F. et al. (2020). Withholding-tax non-compliance: the case of cum-ex stock-market transactions. *Int Tax Public Finance*, 27, 1425–1452. DOI: https://doi.org/10.1007/s10797-020-09602-9

Financial Action Task Force on Money Laundering (2007). *fatf-gafi.org.* Retrieved from http://www.fatf-gafi.org

Kelchevskaya, N. R., Pelymskaya, I. S., & Sirotkin, S. A. (2019). *Ekonomicheskaia sreda promyshlennogo predpriiatiia [Economic environment of an industrial enterprise]*. Ekaterinburg [in Russian].

Leggett T., Daubenberger M., & Schroem O. (2021). Tax cheat schemes cost governments billions. *bbc.com* Retrieved from https://www.bbc.com/news/business-58984813

Lenz, H. (2020). Aggressive Tax Avoidance by Managers of Multinational Companies as a Violation of Their Moral Duty to Obey the Law: A Kantian Rationale. *J Bus Ethics*, 165, 681–697. DOI: https://doi.org/10.1007/s10551-018-4087-8.

Nevzorova E. N., Kireenko A. P., Sklyarov R. A. (2017). Bibliometric Analisis of the Literature on Tax Evasion in Russia, and Foreign Countries. *Journal of Tax Reform*, 3(2), 115–130. DOI: https://doi.org/10.15826/jtr.2017.3.2.035.

Press-sluzhba Prem'er-Ministra Respubliki Kazakhstan [Press service of the Prime Minister of the Republic of Kazakhstan]. (2021) *primeminister.kz* Retrieved from https://primeminister.kz.

Ofitsialnyi sait Komiteta gosudarstvennykh dokhodov Ministerstva finansov Respubliki Kazahstan [Official website of the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan] *gov.kz.* Retrieved from https://www.gov.kz. [in Russian].

Poslanie Prezidenta K. Tokaeva narodu Kazahstana [Message of President K. Tokayev to the people of Kazakhstan]. (2020) *akorda.kz.* Retrieved from https://akorda.kz/ [in Russian].

Postanovlenie Pravitelstva Respubliki Kazakhstan. Ob utverzhdenii Kompleksnogo plana meropriiatii po protivodeistviiu tenevoi ekonomike na 2021–2023 gody № 644 [Decree of the Government of the Republic of Kazakhstan. On approval of the Comprehensive Action Plan to Combat the Shadow Economy for 2021–2023 No. 644] (2021) *adilet.zan.kz* Retrieved from https://adilet.zan.kz/rus/docs/P2100000644 [in Russian].

Rabochaia gruppa EAG po tipologiiam. Ispolzovanie vneshnetorgovykh operatsii dlia legalizatsii prestupnykh dokhodov [EAG Working Group on Typologies. The use of foreign trade operations for the legalization of criminal proceeds]. (2009) *eurasiangroup.org* Retrieved from https://eurasiangroup.org [in Russian].

Remeikiene, R., Gaspareniene, L., & Viktoras, C. (2018) Identification of the shadow economy determinants for the eurozone member states: application of the mimic model. *Journal of Business Economics and Management, 19(6),* 777–796. DOI: https://doi.org/10.3846/jbem.2018.6276

Tebekin, A. V. (2021). Institutsionalnye faktory rasprostraneniia seroi tenevoi ekonomiki v Rossii [Institutional Factors of the Spread of the Gray Shadow Economy in Russia]. *Teoreticheskaиa ekonomika* - Theoretical economics. 4, 49–65 [in Russian].

Townsend, J. A. (2012). Theories of Criminal Liability for Tax Evasion. *ssrn.com.* Retrieved fromhttps://ssrn.com/abstract=2060496.DOI:http://dx.doi.org/10.2139/ssrn.2060496.

Vystuplenie K. Tokaeva na zasedanii Mazhilisa Parlamenta Respubliki Kazakhstan [Speech by K. Tokayev at a meeting of the Majilis of the Parliament of the Republic of Kazakhstan]. (2022). *akorda.kz.* Retrieved from https://akorda.kz/ [in Russian].

Zhamaubaev, E. K. (2021). K kontsu 2025 goda dolia uchastiia gosudarstva v ekonomike sokratitsia do 14 % k VVP [By the end of 2025, the share of state participation in the economy will decrease to 14% of GDP] *primeminister.kz.* Retrieved from https://primeminister.kz/ru/news [in Russian].

Zhamiyeva, A. E., Nassyrova, G. A. (2021). Impact of the economic crisis on the tax system. *Economic Series of the Bulletin of the L.N. Gumilyov ENU,* 3, 175-184. DOI: https://doi.org/10.32523/2789-4320-2021-3-175-184.

DOI 10.31489/2022Ec4/112-124
JELH26
УДК336.228.34

T.K. Shuren[*1], T.P. Pritvorova[1], E.A. Vechkinzova[2], A. Kizimbayeva[3]

[1]Karaganda University of the name of academician E.A. Buketov, Kazakhstan;
[2]Institute of Management Problems of the Russian Academy of Sciences named after V.A. Trapeznikov, Moscow, Russia
[3]Caspian University of Technology and Engineering named after Sh.Yessenov;

[1]itoktar@gmail.com, [2]pritvorova_@mail.ru,
[3]ea_vechkinzova@guu.ru, [4]kizimbaeva@mail.ru

Digital transformation and the relationship with economic growth

Abstract

Object: The main purpose of this article is to identify and assess the impact of digital transformation indicators on economic growth in Kazakhstan.

Methods: For this study, we used methods of statistical multiple correlation and regression analysis based on the software package "Data Analysis" offered by MS Excel. We used data from the official website of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK at stat.gov.kz.

Findings: The primary selection of statistical indicators was carried out and a group of factors (and corresponding indicators) was determined hypothetically influencing economic growth for the period 2007-2020. There are 14 factors that have a significant impact on gross value added. Based on the selection of the most significant factors, a regression equation is constructed that demonstrates the degree of influence on the resulting GVA. The obtained regression model was evaluated. The found regression equation is significant according to the Fisher criterion, all its parameters, including the free term, are significant according to the Student's criterion with a maximum error of 0.07. The multiple correlation coefficient is 0.99. The obtained results can be useful in planning GDP and GVA, both at the regional and national level.

Conclusions: In the system of gross value added indicators, an important place is occupied by the indicators of the number of organizations using the Internet, the unemployment rate and computer literacy of the population. The analysis demonstrates a strong relationship between these indicators. As a result, we saw that the relationship between these indicators can be explained by a linear equation with an average accuracy of 97%. At the same time, for a more adequate analysis of the situation, it is also necessary to take into account the inverse relationship between changes in unemployment rates in the Republic of Kazakhstan and added gross value. The negative correlation between these indicators confirms the vulnerability and instability of the economy from changes in the unemployment rate.

Keywords: digital economy, economic growth, the impact of digitalization, multiple regression, correlation.

Introduction

The article discusses the indicators of the digital transformation of the economy and business in Kazakhstan and its potential impact on the economic growth of the country.

The digital revolution is in full swing and gaining momentum. The established indicators and assessment tools cannot keep up with the rapid pace of digital transformation (OECD, 2019a). OECD (2019b), which reveals many gaps in the existing system of measuring digital transformation and reports from international organizations suggest new indicators and recommend improving the international comparability of currently used ones.

The article examines such statistical data to assess the development of the digital economy, starting with the number of large and medium-sized enterprises using digital technologies, the number of Internet and computer users, the total costs of information and communication technologies, the main goals of using the Internet by household members, indicators of the use of information and communication technologies in organizations, indicators, characterizing the development of E-commerce in the Republic of Kazakhstan, digital literacy of the population, export and import of goods related to information and communication technologies.

The research questions that will be answered in this article are as follows:

(1) What indicators can be used to calculate the aggregated indicator of Kazakhstan's digital transformation?

[*] Corresponding author. E-mail address: itoktar@gmail.com

(2) Can these values be used to predict the GVA indicator for Kazakhstan?

To answer these research questions, we use data from the reports of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2007-2020.

Literature Review

Digitalization of the economy opens up huge opportunities in such areas as economics, innovation, education, healthcare, management and lifestyle (Mühleisen, 2018). Less than 1 percent of technologically processed information worldwide was in digital format in the late 1980s, and more than 99 percent by 2012 (Hilbert, 2020). Moreover, every 2.5-3 years, humanity can accumulate more knowledge than before the birth of civilization (United Nations Conference on Trade and Development (UNCTAD), 2019).

A lot of work has been written about the impact of digital transformation on the economy, but, as far as we know, no attempt has yet been verified to measure the relationship of the above indicators with the real growth of the economy in Kazakhstan.

We want to fill this gap by trying to assess the digital transformation in Kazakhstan by several criteria and exploring its relationship with economic growth. The article discusses the question of which indicators to use to assess the level of digitalization of the economy and business. We also use economic data analysis models to check whether changes in these indicators affect economic growth in Kazakhstan, in particular Gross Value Added (GVA).

The novelty of the article is the assessment of the impact of digitalization on economic growth and the construction of a mathematical equation of this connection. The model we propose can become one of the tools for forecasting the GVA for future years. We point out that digitalization contains the potential for economic growth, and innovation supports the sustainability of the economy.

In the economy, the digital revolution began on a large scale at the end of the 20th century, when the Internet was introduced into economic use. The positive effects of the digital economy can be seen on countless fronts. Molinari & Torres write that, first of all, digitalization supports economic growth, but the power of influence depends on the research methodology used in the study and the geographical configuration (Molinari, Torres, 2018; Solomon, van Klyton, 2020). Other researchers have found that this also greatly changes the structure of the labor market, reducing the demand for routine work and low-skilled workers (Peetz, 2019). In addition, digitization is transforming the way businesses work and interact with their customers and suppliers. This has a significant impact on improving the efficiency of business operations (Ritter, Pedersen, 2020). In addition, it is strongly recommended to better adapt existing statistical systems to the rapid changes caused by digital

In 2018, in order to study the impact of digitalization on the economy, the ECB conducted a special survey of leading companies in the eurozone (Elding, C., Morris, R., 2018), the main purpose of which was also to measure how digital transformation affects macroeconomic aggregates. This study examined 74 leading non-financial companies. In our article, we studied not individual firms, but the economy as a whole. As a measure of economic growth, we chose added gross value, since it shows the economic well-being of the population, including all primary incomes.

According to the survey results, the overwhelming majority of respondents felt that digitalization has a positive impact on their company's sales. More than half expect that the introduction of digital technologies will lead to a “slight increase” in sales over the next three years, while about a third expect a “significant increase”. To some extent, this positive opinion may reflect the relative size.

Methods

The research methods are multiple correlation analysis and regression analysis.

As independent variables of the model, statistical data used to assess the development of the digital economy by international organizations are taken, starting with the number of large and medium-sized enterprises using digital technologies, the number of Internet and computer users, the total costs of information and communication technologies, the main goals of using the Internet by household members, indicators of the use of information and communication technologies in organizations, indicators characterizing the development of E-commerce in the Republic of Kazakhstan, digital literacy of the population, export and import of goods related to information and communication technologies, investments in fixed assets and the unemployment rate.

Results

The research work consisted of the following stages:

- To determine the indicators that are indicators of the digital transformation of the economy of Kazakhstan and search for statistical data on the above indicators for the period from 2007 to 2020, also select indicators of GVA, exports and imports for these periods.
- To process statistical data first and then filter them out.
- To identify the relationships between variables and evaluate the strength of this relationship. Understand how they affect each other and determine how strong.
- To select the variables x that we will use for the equation of the GVA calculation model. It's not necessary that all variables will remain. It is possible that 2-3 or even 1 indicator will remain in the calculation.
- To get a regression model and evaluate how it corresponds to the data that we have.

There are many software products for analyzing statistical data. For calculations, the authors used the built-in MS Excel tools, as well as an additional add-in "Data Analysis", where there are many different statistical tools.

To begin with, in Table 1, we collected statistical data on the GVA and 14 other indicators that could hypothetically be related to the digitalization of the economy and business in one way or another, and determined which of the indicators are independent (arguments) and which dependent (function).

Independent variables:

X1 - The number of organizations using the Internet units network;

X2 - Labor productivity Index;

X3 - Computer literacy at the age of 6 years and older: Novice user (was changed to a quantitative indicator taking into account the population for the corresponding periods), units;

X4 - Computer literacy at the age of 6 years and older: An ordinary user (was changed to a quantitative indicator taking into account the population for the corresponding periods), units;

X5 - Computer literacy at the age of 6 years and older: Experienced user (was changed to a quantitative indicator taking into account the population for the corresponding periods), units;

X6 - The level of innovative activity of enterprises in all types of innovations;

X7 - Innovative products and services produced in 1 year, units;

X8 - The volume of manufactured industrial products (goods, services) in the field of information and communication technologies (in current prices of enterprises), million tenge;

X9 - Indicators of the global competitiveness index by the factor "Level of technological development";

X10 - Exports, million US dollars;

X11 - Imports, million US dollars;

X12 - Investments in fixed assets, million tenge;

X13 - Number of employed people;

X14 - Unemployment rate, as a percentage.

Dependent is the value measured in connection with changes in independent values.

In this case, the GVA (million tenge, signed as Y) is considered depending on changes in other indicators.

Table 1. Statistical data on GVA and 14 indicators from 2007 to 2020

Year	GVA million tenge	Number of organizations using the Internet	Labor Productivity Index	Computer literacy at the age of 6 years and older: Novice user	Computer literacy at the age of 6 years and older: Ordinary user	Computer literacy at the age of 6 years and older: Experienced user	The level of innovation activity of enterprises and organizations on technological innovations	Innovative products and services produced in 1 year	The volume of manufactured industrial products (goods, services) in the field of information and communication technologies (in current prices of enterprises) million tenge.	Indicators of the global competitiveness index by the factor "Level of technological development"	Exports, million US dollars	Import million US dollars	Investments in fixed assets million tenge	The number of active people, units.	Unemployment rate
	y	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13	x14
2007	12772498,2	6803	107,5	498456000	828180000	201240000	4,8	92145227	12461,596	81,3	3424,8326	11868,0825	3 392 122	14349960	7,3
2008	13056532,9	35089	100	356628000	943644000	250902000	4	11076514,2	10883,038	103	4292,41577	11218,929	4 210 878	14738520	6,6
2009	14506780,8	44046	100,2	296056000	1076421000	186644000	4	8333747,03	9733,085	106	4103,67878	10081,7276	4 585 298	15028060	6,6
2010	21115891,00	45354	103,7	269280000	1062432000	172992000	4,3	14180086,1	11428,677	119	4118,96403	11368,5429	4 653 528	15373440	5,80
2011	25741874,80	48064	105	264960000	1107864000	145728000	5,7	23724164,3	16099,222	152	4337,73992	10972,9484	5 010 231	15665760	5,40
2012	28528090,1	49853	102,5	292146000	1114856000	196443000	5,7	37838527,7	22851,831	180	5430,9083	14344,5498	5 473 161	15900130	5,30
2013	32896601,00	58456	105,1	298200000	1226880000	175512000	8	57958430,4	29638,6	178	5970,58406	14083,5205	6 072 687	16153920	5,20
2014	36651572,20	52630	104,6	299117000	1241422000	174629000	8,1	57926716	30168,6	165	7002,48434	13845,9469	6 591 482	16425500	5,00
2015	38783900,40	65186	100,6	456040000	1173426000	124534000	8,1	37613402,9	17493	150	6177,43215	10897,7382	7 024 709	16645460	5,10
2016	44337585,50	75779	100,2	373590000	983787000	978450000	9,3	44622592,5	22805	143	6084,52982	9846,94536	7 762 303	16900500	5,00
2017	51195859,30	79658	104,3	416724000	1003024000	902000000	9,6	84287229,6	21245	148	6504,8801	10082,6496	8 770 572	17156040	4,90
2018	57706553,30	100702	103,1	429580000	1043788000	124304000	10,6	106329603	22509,3	143	7319,91358	11981,3684	11 179 036	17384280	4,90
2019	64681604,80	105531	103,7	436836000	1093941000	131421000	11,3	111252202	23265	148	7745,29788	11462,1922	12 576 793	17621520	4,80
2020	66828235,10	110246	97,5	421875000	1164375000	148125000	11,5	171677151	22879	152	5032,03767	8096,35806	12 270 144	17831250	4,90

Note – compiled by the authors on the basis of Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, https://stat.gov.kz.

The first thing we investigated was how homogeneous our data was for each variable. That is, possible outliers were excluded from the model, the values of which were very different from the rest. They could

have arisen either due to human error (typo), or it was a unique case (crisis, pandemic, lockdowns, sanctions). Outliers were determined visually using the MS Excel tool - color scales (Table 2). If there are no outliers, that data is distributed more or less evenly. Otherwise, the outliers are very different in color with neighboring cells. The years 2007, 2015 and 2020 were chosen as such emissions, and it was decided to exclude them from the model. As a result, we received the primary filtered data.

Table 2. Visual definition of emissions

year	y	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13	x14
2007	12772498,2	6803	107,5	4984560	8281800	2012400	4,8	92145227	12461,596	81,3	3424,8326	11868,0825	3 392 122	14349960	7,3
2008	13056532,9	35089	100	3566280	9436440	2509000	4	11076514,2	10883,038	103	4292,41577	11218,929	4 210 878	14738520	6,6
2009	14506780,8	44046	100,2	2960560	10764210	1866440	4	8333747,03	9733,085	106	4103,67878	10081,7276	4 585 298	15028060	6,6
2010	21115891,00	45354	103,7	2692800	10624300	1729920	4,3	14180086,1	11428,677	119	4118,96403	11368,5429	4 653 528	15373440	5,80
2011	25741874,80	48064	105	2649600	11078640	1457280	5,7	23724164,3	16099,222	152	4337,73992	10972,9484	5 010 231	15665760	5,40
2012	28528090,1	49853	102,5	2921460	11148560	1964430	5,7	37838527,77	22851,831	180	5430,9083	14344,5498	5 473 161	15900130	5,30
2013	32896601,00	58456	105,1	2982000	12268800	1755120	8	57958430,4	29638,6	178	5970,58406	14083,5205	6 072 687	16153920	5,20
2014	36651572,20	52630	104,6	2991170	12414220	1746290	8,1	57926716	30168,6	165	7002,48434	13845,9469	6 591 482	16425500	5,00
2015	38783900,40	65186	100,6	4560400	11734260	1245340	8,1	37613402,9	17493	150	6177,43215	10897,7382	7 024 709	16645460	5,10
2016	44337585,50	75779	100,2	3735900	9837870	978450	9,3	44622592,5	22805	143	6084,52982	9846,94536	7 762 303	16900500	5,00
2017	51195859,30	79658	104,3	4167240	10030240	902000	9,6	84287229,6	21245	148	6504,8801	10082,6496	8 770 572	17156040	4,90
2018	57706553,30	100702	103,1	4295800	10437880	1243040	10,6	106329603	22509,3	143	7319,91358	11981,3684	11 179 036	17384280	4,90
2019	64681604,80	105531	103,7	4368360	10939410	1314210	11,3	111252202	23265	148	7745,29788	11462,1922	12 576 793	17621520	4,80
2020	66828235,10	110246	97,5	4218750	11643750	1481250	11,5	171677151	22879	152	5032,03767	8096,35806	12 270 144	17831250	4,90

Note – compiled by the authors on the basis of Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, https://stat.gov.kz.

Up to this point, the indicators were studied separately from each other. Next, we will look at their connections with each other. For a preliminary analysis of the relationship, the authors calculated the correlation coefficient, and based on it, a correlation matrix was constructed (Table 3). Correlation, as a relationship between phenomena, can be more or less close, i.e. the dependence of one quantity on another is more or less clearly expressed. The main task of the correlation method is to establish the closeness (strength) of the connection between phenomena. The closer the connection, the greater the influence of the studied factor on the result and the less influence of extraneous factors for this case. In order to most fully identify the dependence of the factorial and effective indicator in the dynamics of the studied indicators, a larger number of periods should be taken. After the initial filtering of statistical data, there are 11 periods left to calculate the model. As described above, this is done in order to exclude periods with unique cases or errors. At the intersection of a row and a column, you can observe the correlation coefficient between variables. The matrix is symmetric with respect to the diagonal.

Table 3. Correlation matrix

	y	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10	x11	x12	x13	x14
y	1														
x1	0,9687867	1													
x2	0,3388247	0,2027064	1												
x3	0,7973520	0,846712	-0,134927	1											
x4	0,0138902	-0,105786	0,6557071	-0,469200	1										
x5	-0,767327	-0,743650	-0,293616	-0,518378	0,1171118	1									
x6	0,9778858	0,9324928	0,3374694	0,7690235	0,0850493	-0,754696	1								
x7	0,9620863	0,9319283	0,4137646	0,7872893	0,1191196	-0,622042	0,9469313	1							
x8	0,6051244	0,4498662	0,5267970	0,2085913	0,6181037	-0,359209	0,7054611	0,6398856	1						
x9	0,4094084	0,2475183	0,6388532	-0,074922	0,6637337	-0,273528	0,4637613	0,4376812	0,8665849	1					
x10	0,9233334	0,8486155	0,3470033	0,7067139	0,2389969	-0,558677	0,9457355	0,9434351	0,7875204	0,5213488	1				
x11	-0,028240	-0,146958	0,4465264	-0,331572	0,7487323	0,4027213	0,0174491	0,1260495	0,6130990	0,7020885	0,2452275	1			
x12	0,9698435	0,9860683	0,2206046	0,8588197	-0,063201	-0,666336	0,9295630	0,9532796	0,4685435	0,2446952	0,8879662	-0,088442	1		
x13	0,9903573	0,9412034	0,3582176	0,7432813	0,0646419	-0,809512	0,9827305	0,9397425	0,6680515	0,4788197	0,9261819	-0,000878	0,9322748	1	
x14	-0,862110	-0,739250	-0,599037	-0,434775	-0,308134	0,7467576	-0,872433	-0,806768	-0,814568	-0,749289	-0,834430	-0,252295	-0,725887	-0,904857	1

Note – compiled by the authors on the basis of Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, https://stat.gov.kz.

We see that there is a connection between some variables X. In particular, there is a very strong direct correlation between X1 and X6, between X1 and X7. On Figure 1, you can see this relationship. All points lie approximately on the same straight line. There is also a significant relationship between the other variables. According to the data presented in Table 3, it can be seen that the variables X6, X7, X12 and X13 correlate with the rest of the indicators. If there is a strong correlation between variables, this is called multicollinearity. At the same time, one of the variables should be excluded from the calculation. If this is not done, it can lead to the following problems:

- Small changes in the source data will lead to large changes in the coefficients.
- Instability of the solution.
- There is a high probability of a model error.

We are also looking at the Y column. These values show how strongly the variables X affect Y. In correlation analysis, it is established when the correlation coefficient:

r > 0,7 - the relation is considered close;
0.5 < r < 0.7 - the relation is average;
r < 0.5 - the relation is weak.

With a weak connection between the function Y and the argument X, the influence of this factor, taken as X, is insignificant and can be neglected. And the change in the performance indicator is mainly due to other factors.

On the table we see that X2, X4, X9, X11 have little effect on Y. Only X1, X3, X5, X6, X7, X10, X12 have a significant effect on the function. The indicator X8 has an average relationship. For a better analysis, values with a close correlation were selected, that is, where r > 0.7. The remaining indicators were excluded from the calculation.

Relationship between X1 and X6 Relationship between X1 and X7

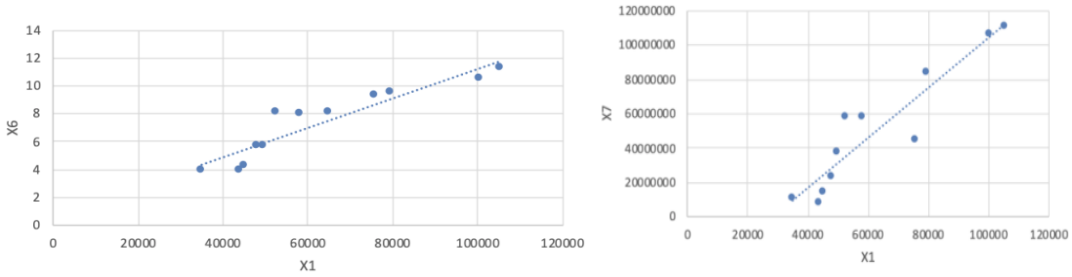


Figure 1. Multicollinearity between X1 and 6, X1 and X7

Note – compiled by the authors on the basis of Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, https://stat.gov.kz.

As a result, the correlation matrix was reduced to 5 variables (Table 4). We can observe that the most significant impact on the GVA is X1, that is, the number of organizations using the Internet is slightly less than 0.97. The next variable in influence was X10, exports from the Republic of Kazakhstan with a value of 0.92. Indicator X3, Computer literacy at the age of 6 years and older: a novice user, slightly below 0.80. Unlike the first three variables, which have a direct correlation with the GVA, the remaining two indicators under consideration are X14 (Unemployment rate) and X5 (Computer literacy at the age of 6 years and older: Experienced user) has a negative effect on the VDS: approximately -0.86 and -0.77, respectively. The fact that the reduction in unemployment will have a positive impact on the GVA was expected, however, it is surprising that despite the decrease in the number of experienced PC users, gross value added is steadily growing.

Table 4. Correlation table, with variables where r > 0.7 with respect to Y

	y	x1	x3	x5	x10	x14
y	1					
x1	0,96878674	1				
x3	0,79735205	0,846712	1			
x5	-0,7673273	-0,7436505	-0,5183783	1		
x10	0,92333349	0,84861553	0,70671391	-0,5586777	1	
x14	-0,8621109	-0,7392504	-0,4347756	0,74675768	-0,8344306	1

Note – compiled by the authors on the basis of Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, https://stat.gov.kz

Compilation of a regression model.

The correlation coefficient indicates only the degree (closeness) of the relationship in the variation of the two variables. But it does not give an idea of how one quantity changes quantitatively as the other changes.

With the help of regression, the task is to establish how the effective indicator Y changes quantitatively when the factorial indicators X change by one. Thus, a model is formed that makes it possible to predict the change in the result Y with a given change in factors X.

At this stage, a formula has been drawn up by which we could, knowing the variables X, or rather the number of organizations using the Internet, the number of experienced PC users and the number of novice PC users, calculate the VDS. A straight-line regression model will be applied here:

$$Y = a0 + a1x1 + \ldots + anxn,$$

where Y is the GVA;

a0, a1, an - the regression coefficients;

x1, xn - variables.

This equation reflects a uniform change in the performance indicator with a change in factor indicators. The projected calculation of GDP is made by substituting the values of the corresponding factors into the planned equation.

The values of the parameters of the regression coefficients (a_0, a_1, etc.) can be found in various ways. The most common is the least squares method. With this method, the line that aligns the empirical data should pass so that the sum of the squares of deviations from this line is the smallest.

Using the Data Analysis tool from MS Excel, we can get the following data:

Table 5. Regression analysis with variables X1, X3, X5, X10, X14.
Output of results

Regression statistics	
Multiple R	0,99789005
R-square	0,99578456
Normalized R-square	0,99156912
Standard error	1583038,68
Observations	11

Analysis of variance

	df	*SS*	*MS*	*F*	*Significance of F*
Regression	5	2,96E+15	5,9198E+14	236,22308	6,24E-06
Remains	5	1,25E+13	2,506E+12		
Total	10	2,97E+15			

	Coefficients	Standard error	t-statistics	P-Value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Y-intersection	32629014,2	13579462	2,40282084	0,06140631	-2278103,99	67536132,5	-2278104	67536132,5
x1	343,808752	69,6979927	4,93283577	0,00434892	164,644358	522,973146	164,644358	522,973146
x3	0,03521539	0,01879043	1,87411327	0,11977892	-0,01308694	0,08351773	-0,0130869	0,08351773
x5	-0,0146264	0,0232805	-0,628269	0,55740518	-0,07447085	0,04521802	-0,0744708	0,04521802
x10	2124,85111	1214,79854	1,74913867	0,14067841	-997,887967	5247,59018	-997,88797	5247,59018
x14	-7514230,9	2414396,35	-3,1122607	0,02648297	-13720634,3	-1307827,5	-13720634	-1307827,5

Note – compiled by the authors on the basis of Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, https://stat.gov.kz.

The most important indicators in this table were highlighted in bold. The first is the R-square. This value shows how much the change in Y can be explained by changes in variables X and shows the adequacy of

the equation. In this case, the indicator 0.99 is very high. The next thing to pay attention to is the significance of F. The significance of F allows you to check the significance of the regression equation, i.e. to determine whether the mathematical model expressing the dependence between variables corresponds to experimental data and whether the explanatory variables included in the equation (one or several) are sufficient to describe the dependent variable. For the significance of the model, it should not exceed 0.05. In our case, it is equal to 6.24E-06, therefore the overall significance is confirmed.

In addition, P-values were determined. The P-value is the lowest value of the significance level (i.e., the probability of rejection of a fair hypothesis) for which the calculated verification statistics leads to rejection of the null hypothesis. Usually, the p-value is compared with the generally accepted standard significance levels of 0.005 or 0.01. For example, if the value of the test statistics calculated from the sample corresponds to p = 0.005, this indicates a probability of validity of the hypothesis of 0.5%. Thus, the smaller the p-value, the better, since this increases the "strength" of the rejection of the null hypothesis.

However, in the table we can observe that the P-values for X5 and X10 critically exceed the permissible levels (0.55, and 0.14, respectively). Therefore, further construction of the model based on these indicators is not statistically significant. Thus, it can be concluded that the resulting multiple regression equation is significant, but its adequacy is rather low, therefore, the recommendation is to remove statistically insignificant factors in order to ensure the accuracy and quality of the model.

Based on this, it was decided to exclude the indicators X5 and X10 and leave in the model only the GVA, the number of organizations using the Internet, Computer literacy at the age of 6 years and older; the novice user and the unemployment rate. And as a result, we simplify the model to three variables and build Table 6 on its basis.:

Table 6. Regression analysis with variables X1, X3, X14.

Output of results

Regression statistics	
Multiple R	0,99642293
R-square	0,99285866
Normalized R-square	0,98979809
Standard error	1741388,78
Observations	11

Analysis of variance

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	2,95E+15	9,84E+14	324,40287	7,15E-08
Remains	7	2,12E+13	3,03E+12		
Total	10	2,97E+15			

	Coefficients	Standard error	t-statistics	P-Value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Y-intersection	52476960,2	8689588,66	6,03906148	0,00052159	31929348,1	73024572,3	31929348,1	73024572,3
x1	370,257029	68,8772607	5,3756062	0,00103525	207,388188	533,12587	207,388188	533,12587
x3	5,011375	0,01866986	2,68420572	0,03134769	0,00596654	0,09426095	0,00596654	0,09426095
x14	-10610029	1479690,18	-7,1704394	0,00018208	-14108940	-7111117,4	-14108940	-7111117,4

Note – compiled by the authors on the basis of Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, https://stat.gov.kz.

Table 6 shows that all 4 coefficients, Y-intersection, X1, X3, 14 of them are statistically significant. The P-values of 5.2E-04, 0.001, 0.031 and 1.8E-04, respectively, are very scanty, which means that the randomness of the correct result in the first coefficient is 0.05%, in the second 0.1%, in the third 3%, and in the fourth is almost zero. The significance of F also does not exceed 0.05. The R-square of the model is greater than 99%, which indicates a very high approximation accuracy (the model describes the phenomenon well).

The regression equation will be calculated using the following formula:

$$Y1 = a_0 + a_1x_1 + a_2x_3 + a_3x_{14},$$

where Y1 is the estimated GVA;

a_0,a_1,a_2,a_3 - regression coefficients;

x_1 - number of organizations using the Internet units network;

x_3 - computer literacy at the age of 6 years and older: Novice user (was changed to a quantitative indicator taking into account the population for the corresponding periods), units;

x_{14} - unemployment rate, as a percentage.

The coefficients $a_0, a_{1,}, a_{2,}, and\ a_3$ can be found by the least squares method, or you can look in Table 6 in the coefficients column. The equation in its final form, taking into account the found parameters$a_0, a_{1,}, a_{2,}, and\ a_3$ will take the form:

$$Y1 = 52476960{,}2 + 370{,}257029x_1 + 5{,}011375x_3 - 10610029x_{14},$$

To check the calculated values of a0, a1, a2, and a3, the values are substituted into both initial equations of the system. Performing equalities in the original equations with the calculated data a0 and a1 will indicate the correctness of the calculation.

If we substitute various values of the number of organizations using the Internet, the number of novice PC users and the unemployment rate into the regression equation, we get the theoretical values of the GVA (Y1) corresponding to these indicators (Table 7).

Table 7. Theoretical values of the GVA (Y1) and the percentage of error of the model.

year	X1	X3	X14	Y	Y1	Error
2008	35089	3566280	6,6	13056532,9	13314684,41	2%
2009	44046	2960560	6,6	14506780,8	13595586,85	6%
2010	45354	2692800	5,8	21115891	21226060,36	1%
2011	48064	2649600	5,4	25741874,8	26256977,01	2%
2012	49853	2921460	5,3	28528090,1	29342761,98	3%
2013	58456	2982000	5,2	32896601	33892474,69	3%
2014	52630	2991170	5	36651572,2	33903317,28	7%
2016	75779	3735900	5	44337585,5	46206518,19	4%
2017	79658	4167240	4,9	51195859,3	50865354,36	1%
2018	100702	4295800	4,9	57706553,3	59301305,59	3%
2019	105531	4368360	4,8	64681604,8	62513904,99	3%
					Average error	3%
					Maximum error	7%

Note – compiled by the authors on the basis of Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the RK, https://stat.gov.kz.

The parameters of the regression equation $a_{1,}$, a, $and\ a_3$ are called regression coefficients, which are the main indicators in the equation. Regression coefficients $a_{1,}, a_{2,}, and\ a_3$ show by how many units on average the effective indicator Y changes with a change in factor indicators X by one.

Based on the results of the calculations, it is advisable to draw the following conclusions:

An increase in the number of organizations using the Internet by 10,000 units over the period corresponded to an increase in the GVA by about 3,702,000 million tenge. In other words, the equation shows that an increase in the number of companies using the Internet by 9.47% will entail an increase in GVA by more than 5.7%.

An increase in the number of people with computer knowledge at the Novice user level by 10% will lead to an increase in the GVA by 3.38%.

And, finally, a decrease in the unemployment rate by 1% corresponds to an increase in the GVA by 16.4%.

The free term of the equation a_0 is a certain basis that must be taken into account when using the regression coefficient.

Using Y1, we can estimate the accuracy of the model. In column 7 (errors) of Table 7, the percentage of model error was calculated. The average error rate is 3%. Considering this and other above-mentioned checks, in particular R-squared (greater than 99%), P-values (5.2E-04, 0.001, 0.031 and 1.8E-04 for Y and X1, X3 and X14, respectively) and the significance of F (does not exceed 0.05), we can conclude that the model gives quite an acceptable good result, and with its help it is possible to make a forecast of the GVA at the specified (planned) values of the number of organizations using the Internet, the number of people with a computer proficiency level at the level of the initial user and the unemployment rate.

Discussions

The results of the regression analysis (Table 6) suggest that the GVA can be explained, among other things, by an increase in the number of organizations using the Internet and the level of computer literacy of the population, as well as a decrease in unemployment. The estimated coefficients are statistically significant, which means that digitalization is a significant indicator of economic growth. Thus, the results obtained confirm the study of Solomon and van Clayton (2020) on the positive impact of digitalization on the economy. In addition, by the method of correlation and regression analysis, a fairly correct mathematical model was built in our article that determines the degree of this influence.

In addition, our study, which establishes a link between the indicators of digital transformation and economic growth, supports the idea of focusing investments of the Republic of Kazakhstan on digital convergence within the framework of the Digital Kazakhstan program plan, which aims to accelerate the pace of development of the economy of the Republic of Kazakhstan and improve the quality of life of the population through the use of digital technologies in the medium term, as well as the creation of conditions for the transition of Kazakhstan's economy to a fundamentally new development trajectory, ensuring the creation of the digital economy of the future in the long term. So, we recommend Kazakh investments to focus on the process of digital transformation and its acceleration for further growth.

Conclusions

Regression analysis showed that the influence of each indicator on the GVA is unbalanced and strongly depends on the correlation between variables. As expected, the problem of strong correlation led to double counting and inaccuracies in calculations. You can get a very accurate model by reducing the set of diagnostic variables.

The results of the analysis positively confirmed the hypothesis that economic growth measured by gross value added can be reliably explained by indicators of digital transformation. At this stage of Kazakhstan's development, the digital transformation of the country's enterprises has a positive impact on its economic growth. The authors concluded that the quantitative growth of companies using the Internet in their activities significantly affects the country's GVA indicator. The level of computer literacy affects this indicator a little less. The unemployment rate was the leader among the indicators. It is assumed that, as technology develops, the digitization process will be carried out faster and cheaper, which will entail a greater positive impact on economic growth.

Our results are of great importance to government authorities in terms of measuring, supporting and deepening digital transformation. If government agencies in the Republic of Kazakhstan want to support and even stimulate economic growth, it is recommended to legislatively encourage digital transformation, paying special attention to companies using the Internet in their activities, improving computer literacy of the popu-

lation and reducing unemployment, since these indicators gave the highest connection and accuracy with economic growth in our model. It is advisable, in our opinion, to introduce and calculate indicators of digitalization of workplaces.

Our research has some limitations. When using the model, after filtering and excluding variables, there are only 3 indicators that can be used with high accuracy for planning the GVA. When trying to use additional variables, the accuracy of the model is significantly reduced. We plan to conduct a series of analyses and studies to identify other indicators to improve our model.

References

Abdel Azim, R., Salman, O., & El Henawy, I. (2020). The Role of e-Government as a stimulus for economic growth. *The International Journal of Business Management and technology, 4*, 69–79. http://www.theijbmt.com/archive /0935/1632455370.pdf

Aker, J. (2017). Using digital technology for public service provision in developing countries potential and pitfalls (in S. Gupta, M. Keen, A. Shah, & G. Verdier eds.). *Digital revolutions in public finance*, 201–224. International Monetary Fund.

Arvin, B., & Pradhan, P. (2014). Broadband penetration and economic growth nexus: Evidence from cross-country panel data. *Applied Economics, 46*, 4360–4369.

Birlea, S., & Capatina, A. (2017). The impact of internet and e-commerce on economic growth. *Journal of Danubian Studies and Research, 7*, 48–57.

Elding, C., & Morris, R. (2018). Digitalization and its impact on the economy: Insights from a survey of large companies. *ECB Economic Bulletin, 7,* 1–9. https://www.ecb.europa.eu/pub/economic-bulletin/focus/2018/html/ecb.ebbox201807_04.en.html

Hilbert, M. (2020). Digital technology and social change: The digital transformation of society from a historical perspective. *Dialogues in Clinical Neuroscience, 22*, 189–194. https://doi.org/10.31887/dcns.2020.22.2/mhilbert

Karavasilis I., Zafiropoulos K., & Vrana V. (2010). Extending TAM to Understand E-Governance Adoption by Teachers in Greece. *Organizational, Business, and Technological Aspects of the Knowledge Society, 112*, 57-68. https://doi.org/10.1007/978-3-642-16324-1_7

Kim, P. S., & Thanh H. T. (2016). The Impact of E-Government on Competitiveness-based Economic Growth in Vietnam. *Korea Open Access Journals.* https://DOI.org/10.21485/hufsea.2016.26.2.003

Kuttybaeva, N. B., Raikhanova, G. A., Zhaparova, R. Ye., Kozhabatchina, G. M., & Akmolda, M. N. (2022). Technological audit in the system of optimization of innovative activity. *Bulletin of the Karaganda university. Economy series, 106*, 71-80. https://doi.org/10.31489/2022Ec2

Macdougald, J. J. (2011). Internet use and economic development: Evidence and policy implications. http://scholarcommons.usf.edu/etd/3225

Molinari, B., & Torres, J. L. (2018). Technological sources of economic growth in Europe and the U.S. *Technological and Economic Development of Economy, 24*, 1178–1199. https://doi.org/10.3846/20294913.2017.1280557

Mühleisen, M. (2018). The long and short of the digital revolution. *Finance and Development, 55*, 4–8.

Nelder, J. A., & Mead, R. (1965). Simplex method for function minimization. *Computer Journal*, 7 (4), 308–313. https://doi.org/10.1093/comjnl/7.4.308

Niebel, T. (2018). ICT and economic growth – Comparing developing, emerging and developed countries. *World Development, 104*, 197–211.https://doi.org/10.1016/j.worlddev.2017.11.024

OECD. (2019). OECD skills Outlook 2019. *Thriving in a Digital World. Paris.* https://doi.org/10.1787/df80bc12-en

OECD. (2019b). Going digital: Shaping policies, improving lives. *Going digital: Shaping policies, improving lives.* https://doi.org/10.1787/9789264312012-en

Panda, P., Sahu, G. P. & Gupta B. (2019). E-government procurement implementation in India: evolving decision parameters for project success. *International Journal of Business Information Systems, 31*, 414-454.

Peetz, D. (2019). The realities and futures of work. *ANU Press.* https://doi.org/10.22459/RFW.2019

Ritter, T., & Pedersen, C. (2020). Digitization capability and the digitalization of business models in business-to-business firms: Past, present, and future. *Industrial Marketing Management, 86*, 180–190. https://doi.org/10.1016/j.indmarman.2019.11.019

Roszko-Wójtowicz, E., & Grzelak, M. M. (2020). Macroeconomic stability and the level of competitiveness in EU member states: A comparative dynamic approach. *Oeconomia Copernicana, 11*, 657–688. https://doi.org/10.24136/oc.2020.027

Sabbagh, K., Friedrich, R., El-Darwiche, B., Singh, M., & Koster, A. (2013). Digitization for economic growth and job creation: Regional and industry perspectives. *In The global information technology report*, 35–42.

Shakeyev, S. S., Nevmatulina, K. A., & Vladimirov Z. (2021). Theoretical foundations and main stages of the transformation of the digitalization of the economy. *Bulletin of the Karaganda university. Economy series, 104*, 85-93. https://doi.org/10.31489/2021Ec4

Solomon, E. M., & van Klyton, A. (2020). The Impact of Digital Technology Usage on Economic Growth in Africa.

Utilities Policy, 67. https://doi.org/10.1016/j.jup.2020.101104
Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics, 70,* 65–94. https://doi.org/10.2307/1884513
Spirakis, G., Spiraki, C., & Nikolopoulos, K. (2010). The impact of electronic government on democracy: E-democracy through e-participation. *Electronic Government, 7,* 75–88. https://doi.org/10.1504/EG.2010.029892
Sredojević D., Cvetanović S., & Bošković G. (2016). Technological changes in economic growth theory: Neoclassical, endogenous, and evolutionary-institutional approach. *Economic Themes, 54*, 177-194. https://doi.org/10.1515/ethemes-2016-0009
Statistics of information and communication technologies (2007-2020). *Agency for Strategic planning and reforms of the Republic of Kazakhstan Bureau of National statistics.* Retrived from https://stat.gov.kz/official/industry/29/statistic/7
Thomassen, L., Derrida, J., & Habermas, J. (2006). The Derrida-Habermas Reader.
T. T. Hoa, S. K. Pan. (2016). The Impact of E-Government on Competitiveness-based Economic Growth in Vietnam. https://doi.org/10.21485/hufsea.2016.26.2.003
United Nations Conference on Trade and Development (2019). *Digital economy report 2019: Value creation and capture – implications for developing countries. UNCTAD.* Retrived from https://unctad.org/system/files/official-document/der2019_en.pdf
Vyshnevskyi, O., Stashkevych, I., Shubna, O., & Barkova, S. (2020). Economic growth in the Conditions of digitalization in the EU countries. *Studies of Applied Economics, 38,* 2–17. https://doi.org/10.25115/eea.v38i4.4041
Zhao, F., Wallis, J., & Singh, M. (2015). E-government development and the digital economy: A reciprocal relationship. *Internet Research, 25,* 734–766. https://doi.org/10.1108/IntR-02-2014-0055

T.K. Shuren, T.P. Pritvorova, E.A. Vechkinzova, A. Kizimbayeva

Цифрлық трансформация және экономикалық өсумен өзара байланыс

Аңдатпа

Мақсаты: Мақаланың негізгі мақсаты цифрлық трансформация көрсеткіштерінің Қазақстандағы экономикалық өсуге әсерін анықтау және бағалау.

Әдісі: Зерттеу барысында статистикалық көп корреляциялық-регрессиялық талдау әдістері MS Excel бағдарламасының «Мәліметтерді талдау» қолданбалы пакеті негізінде қолданылды. Зерттеудің ақпараттық базасы Қазақстан Республикасы Стратегиялық жоспарлау және реформалар агенттігінің Ұлттық статистика бюросының statgov.kz ресми сайтының мәліметтері.

Қорытынды: Статистикалық көрсеткіштерді бастапқы іріктеу жүргізілді және 2007-2020 жылдар кезеңінде экономиканың өсуіне гипотетикалық әсер ететін факторлар (және тиісті индикаторлар) тобы айқындалды. Ең маңызды факторларды таңдау негізінде регрессия теңдеуі құрылды, ол алынған ЖҚҚ-ға әсер ету дәрежесін көрсетеді. Алынған регрессиялық модель бағаланды. Табылған регрессия теңдеуі Фишер критерийі бойынша маңызды, оның барлық параметрлері, оның ішінде бос термин, Стьюдент критерийі бойынша максималды қатесі 0,07-ге тең. Корреляцияның бірнеше коэффициенті-0,99. Алынған нәтижелер аймақтық және ұлттық деңгейде ЖІӨ мен ЖҚҚ жоспарлау кезінде пайдалы болуы мүмкін.

Тұжырымдама: Жалпы қосылған құн индикаторлары жүйесінде Интернет желісін пайдаланатын ұйымдар саны, жұмыссыздық деңгейі және халықтың компьютерлік сауаттылығы маңызды орын алады. Талдау осы көрсеткіштер арасындағы күшті байланысты көрсетеді. Нәтижесінде осы көрсеткіштер арасындағы қатынасты 97% орташа дәлдікпен сызықтық теңдеумен түсіндіруге болатындығы көрінді. Сонымен қатар, жағдайды неғұрлым барабар талдау үшін ҚР-дағы жұмыссыздық көрсеткіштерінің өзгеруі мен жалпы қосылған құн арасындағы кері өзара байланысты да ескеру қажет. Осы көрсеткіштер арасындағы теріс корреляция жұмыссыздық деңгейінің өзгеруінен экономиканың осалдығы мен тұрақсыздығын растайды.

Кілт сөздер: цифрлық экономика, экономикалық өсу, цифрландырудың әсері, бірнеше регрессия, корреляция.

Т.К. Шурен, Т.П. Притворова, Е.А. Вечкинзова, А. Кизимбаева

Цифровая трансформация и взаимосвязь с экономическим ростом

Аннотация:

Цель: Основной целью данной статьи является выявление и оценка влияния показателей цифровой трансформации на экономический рост в Казахстане.

Методы: При проведении исследования были использованы методы статистического множественного корреляционно-регрессионного анализа на основе прикладного пакета «Анализ данных» программы MS Excel.

Информационной базой исследования послужили данные официального сайта Бюро национальной статистики Агентства по стратегическому планированию и реформам РК: statgov.kz.

Результаты: Проведен первичный подбор статистических показателей и определена группа факторов (и соответствующих индикаторов), гипотетически влияющих на рост экономики за период 2007–2020 гг. Выделены 14 факторов, имеющих значимое влияние на валовую добавленную стоимость. На основе отбора наиболее значимых факторов построено уравнение регрессии, демонстрирующее степень влияния на результирующий ВДС. Выполнена оценка полученной регрессионной модели. Найденное уравнение регрессии значимо по критерию Фишера, все его параметры, в том числе и свободный член, значимы по критерию Стьюдента с максимальной ошибкой 0,07. Множественный коэффициент корреляции равен 0,99. Полученные результаты могут быть полезными при планировании ВВП и ВДС как на региональном, так и национальном уровне.

Выводы: В системе индикаторов валовой добавленной стоимости важное место занимают показатели количество организации, использующих сеть Интернет, уровень безработицы и компьютерная грамотность населения. Проведенный анализ демонстрирует сильную взаимосвязь между этими показателями. В итоге, мы увидели, что взаимосвязь между этими показателями можно объяснить линейным уравнением со средней точностью в 97 %. В то же время для более адекватного анализа ситуации следует также учитывать обратную взаимосвязь между изменением показателей безработицы в РК и валовой добавленной стоимостью. Отрицательная корреляция между этими показателями подтверждает уязвимость и неустойчивость экономики от изменений уровня безработицы.

Ключевые слова: цифровая экономика, экономический рост, влияние цифровизации, множественная регрессия, корреляция.

DOI 10.31489/2022Ec4/126-134
JEL M4
УДК 330.34

D.A. Sitenko[1*], M. Holienka[2]

[1]Karaganda University of the name of academician E.A. Buketov, Kazakhstan
[2]Comenius University in Bratislava, Slovakia
[1]daesha@list.ru, [2]marian.holienka@gmail.com

[1]https://orcid.org/0000-0001-6979-2577 [2]https://orcid.org/0000-0002-8975-6116
[1]Scopus Author ID: 41262688700, [2]Scopus Author ID: 5602226300
[1]Researcher ID: R-8821-2018 [2]Researcher ID: N-8162-2015

Analysis of the main forms and types of commercialization of R&D in developed countries

Abstract

Object: Identification the main forms and types of commercialization of developments in developed countries in order to use them in the process of university technology transfer to the regional innovation system

Methods: In the course of the study, methods of system analysis, comparative analysis, grouping method, content analysis, methodology of the Global Innovation Index rating were used.

Findings: The article considers the main ways of commercialization in the developed countries of the world. It is shown that in many respects successful models of technology transfer have arisen as a result of the adoption at the state level of legislation that stimulates the process of commercialization. The systematization of approaches to the commercialization of the results of innovative scientific research in world practice has been carried out; practical recommendations have been given for managing this process. The article discusses the main schemes for the distribution of royalties from the implementation of intellectual property between an inventor and a scientific organization. The main forms of technology transfer used in developed countries are studied. Conclusions are drawn about the importance of the commercialization of innovations at various levels of the economy, the impact of state policy on the formation of a model for the commercialization of R&D (research and development) results, and the interaction of universities with the business sector.

Conclusions: The article identifies the main problems hindering the development of commercialization in Kazakhstan. The importance of technology transfer from universities to industry as a necessary condition for the development of an innovative economy is substantiated. The main characteristics of universities that conduct active scientific research are revealed. The main forms of technology transfer used in developed countries are identified, which include patenting, licensing agreements, fulfillment of orders for R&D, creation of spin-off companies. The experience of organizational and legal support of commercialization in developed countries is systematized, which is of interest for the development of technology transfer in developing countries.

Keywords: commercialization, university, technology transfer, third mission, innovation.

Introduction

Today, in all countries, universities are actively participated not only in educational and scientific processes, but are also involved in regional innovation systems, influencing social and economic development. The university becomes a scientific hub that unites the participants in the innovation process, creating, accumulating and transferring knowledge for public use.

Effective development of innovation system and higher education in Kazakhstan requires changes in the approaches of managing intellectual property, innovation infrastructure of the university and the process of transfer of technology. The study and use of foreign experience in the development of their own strategies and experience for the development of innovative activities can give domestic universities the necessary competitive advantages in the market of educational services. The use of effective models and mechanisms of commercialization makes it possible to motivate scientists to implement their own developments, to set a new vector for their professional activities.

The article defines the features of the main models for the transfer of university developments and technologies to business in foreign countries. The current problems of legal regulation of the transfer of the results of intellectual activity are considered.

Literature Review

The development of the knowledge economy along with globalization have contributed to the change and expansion of the tasks of universities around the world. The mention of the “third mission” of universi-

* Corresponding author. E-mail address: *daesha@list.ru*

ties appeared in Western literature in works by Klofsten & Jones-Evans (2000), and the concept itself in Laredo (2007). Universities have always been recognized as generators of knowledge. The concept of the "third mission" recognizes not only the process of generating knowledge, but also its value for improving the welfare of society. In this regard, the performance of universities is also assessed in terms of the successful implementation of scientific development into production (Cesaroni, Piccaluga, 2016).

In general, within the framework of the "third mission" concept, a multidimensional approach has been implemented, which includes both obtaining mandatory profits at the university through the commercialization of academic knowledge, as well as creating and developing social value from state funding of universities (Perkmann et al., 2013).

In the CIS countries, the works of A.V. Zharinov, S.M. Ilyashenko, V.L. Inozemtsev, L.G. Melnik, E.A. Monastyrny, I.G. Dezhina and others are devoted to the problems of commercialization. A great contribution to the classification of various forms and methods of commercialization, their advantages and disadvantages was made by the researchers Anisimov & Danilova (2017).

In Kazakhstan, the issues of commercialization of domestic developments are disclosed in the works of S.K. Bishimbaeva, G. Alibekova, K.R. Amanchaeva, K.S. Mukhtarova and others. Their studies focus on the legislation of the Republic of Kazakhstan in the field of commercialization in terms of its impact on the development of innovative ecosystems of research universities, presents the main problems in the field of commercialization of the results of scientific and technical activities of universities. The problems of evaluating the effectiveness of programs for the commercialization of scientific developments in Kazakhstan are considered in the works of Alibekova *et al* (2018).

Despite the presence of a large number of works in the field of commercialization, the issues of commercialization of university developments are not sufficiently covered. Changing legislation in the field of intellectual property, technology transfer requires further research in order to determine the most effective models of commercialization in the current environment.

Methods

The study used methods of system analysis, grouping, comparative analysis, content analysis. The study of the role of universities was made in terms of the concept of the "third mission", within which universities can create partnerships with the business sector and carry out technology transfer. The data of the Agency for Strategic planning and reforms of the Republic of Kazakhstan Bureau of National statistics, the rating methodology of the Global Innovation Index were used.

Results

The main opportunities for creating competitive advantages for the country are the implementation of innovative potential through the introduction of innovative developments in industrial production. An important problem of the Kazakhstan innovation system is the low demand for innovation by enterprises, a small number of innovation-active firms. As a result, the share of innovative products (goods, services) in GDP in 2021 amounted to 1.71%, which is significantly lower than in developed countries.

The universities of the Republic of Kazakhstan are poorly involved in the process of creating R&D. In 2021, only 21.7% of universities of the Republic of Kazakhstan carried out R&D. The problem is also a decrease in financing the costs of universities from the republican budget, the lack of large sources of funding from the business sector. Also, modern economic processes put universities in a condition of competition for government orders, talented students, and qualified personnel.

Domestic R&D spending as a percentage of gross domestic product was 0.13%, which is extremely low. In many regional universities, there is no infrastructure (incubators, technology parks, etc.) necessary for introducing innovations and acquiring practical skills for students to prepare real start-up projects.

The most important factor in the development of universities at present is the commercialization of scientific developments (Sitenko D.A., Holienka M., 2022). It is the introduction of developments into production that can serve as a new source of income for the university, will allow the university to get involved in the innovative processes of the region, and form a long-term partnership with the business sector. The development of commercialization requires restructuring and internal processes of the university. In addition to educational and scientific activities, the university needs to develop commercial, marketing, technological, and organizational aspects of its activities. Commercialization allows the university to become more successful from a financial and scientific point of view.

In Kazakhstan, the State Program for the Development of Education for 2011-2020 formulated the tasks of strengthening the interaction between universities and the business sector. For this purpose, new concepts

of “research university”, “national research university” were introduced in the new law of the Republic of Kazakhstan “On Science”, a new approach to the innovation development and science was formed. The first research university in Kazakhstan was Nazarbayev University, which was awarded this status in 2012.

On October 31, 2015, the Republic of Kazakhstan adopted the Law “On the commercialization of the results of scientific and (or) scientific and technical activities”, which laid the legal basis for the interaction of the university with the business sector in the transfer of technology. The need to pass the law was due to the underdevelopment of legislation in the field of technology transfer and intellectual property, as well as the lack of incentives to ensure rapid and efficient commercialization of R&D results.

This law defined the commercialization of R&D as one of the functions of universities, along with educational and scientific ones. The law determined the minimum guaranteed amount of royalties. For example, in the case of concluding a license agreement or an agreement on the assignment of an exclusive right, the remuneration to the author is at least thirty percent of the amount of the license agreement (including royalties). Universities, scientific organizations, industrial enterprises have the right to establish higher remuneration by their internal regulations. This practice is present in US universities. However, in the absence of internal regulations, which, unfortunately, is the case today in most organizations in Kazakhstan, the employer is obliged to pay authors only the minimum remuneration established by law.

The “blind spots” in intellectual property legislation and in the vector of the development of the university negatively affects the activity of higher educational institute and make development plans unachievable. Therefore, to address the issues of commercialization of domestic enterprises, it is of great importance to study the experience of foreign countries, the features of the transfer of university developments in assessing the effectiveness of the transfer process.

Most R&D spending in the US is borne by the private sector, although the federal budget still plays an important role in funding basic research. And despite fluctuations in the federal budget for R&D over the past 30 years, the overall ratio of public R&D spending to GDP in the US is still relatively high, despite its tendency to focus on defense and healthcare.

The federal government is also using the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs to expand opportunities for public-private partnerships and strengthen the role of small firms in federally funded innovation.

In the US, market-based instruments are favored, such as corporate tax credits, which allow private firms to reduce marginal costs through deductions for R&D spending. US patent and copyright systems also help provide important incentives for innovation by increasing the potential returns on R&D and by protecting inventors. And in areas where federal public procurement policy creates strong demand for innovative technologies, the absence of large state-owned enterprises means the government must instead contract with a variety of private-sector manufacturers (Melaas, A., Zhang, F., 2016).

Great importance for the development of the commercialization of scientific research of universities was the adoption in 1980 of the laws of Stevenson-Widler technological innovation act and Bay-Dole act. Thanks to the Bayh-Dole act, universities, scientific organizations, and innovators have the right to create, acquire and dispose of the rights to intellectual property created with public funding.

There are about 250 research universities in the USA. The term "research universities" originated in the United States to distinguish higher education institutions that train specialists in doctoral studies from those universities that offer only master's and bachelor's programs without research activities (Hall, Rosenberg, 2010). Researchers (Atkinson, Blanpied, 2008) identified a large amount of research spending as the main criterion for selecting a university as a research university. Data on the largest research universities in the United States show that the effectiveness of the functioning of such universities largely depends on financial and material resources (Amran et al, 2014).

In the early 1970s, the Carnegie Endowment developed the Classification of Higher Educational Institutions of the United States, in which the criteria for a research university were given:

1) the presence of doctoral studies, including a certain number of scientific disciplines for which the degree of Doctor of Philosophy is awarded;

2) a certain number of federal research and teaching grants received by the university;

3) availability of study programs for university students;

4) entry into the list of the best universities in terms of federal financial support for research and development.

Dezhina (2004) identifies a number of features, compliance with which allows us to classify the university as an innovative (research) type:

- a large number of specialties;
- priority of scientific research at the faculty, including fundamental ones;
- development of innovative activity in science and education;
- training of scientific personnel, with an emphasis on postgraduate education;
- participation of foreign scientists in the educational and scientific process;
- introduction of new areas of research and improvement of teaching methodology;
- innovative infrastructure for the implementation of research results, communication with research institutes and scientists in this field.

Also, research activities in the United States are carried out by institutes of higher studies, where personnel for scientific activities are trained from already defended PhD staff, as well as national laboratories that focus on narrow areas of research. Scientific research is also carried out by private corporations, which are engaged in fundamental and applied research at the expense of private capital (Yerzhanova S.K. et al, 2022).

In technical universities, the created technologies are introduced through licensing agreements. As a rule, the created technology is transferred from the university to the industry through venture capital companies. In another case, the technology is created in the research departments of the company itself, as a rule, such departments are present in large companies. The main forms of technology transfer are presented in Table 1.

Table 1. Main forms of technology transfer used in developed countries

Classification	Forms
Directly related to the owner, involving the innovative infrastructure and staff of the university	- consulting services - educational services - technical support services - R&D orders from industry
Based on intellectual property rights	- license agreements, i.e. transfer of rights to various types of intellectual property (patents, trademarks, etc.), transfer of know-how - creation of "spin-off" companies - creation of joint ventures - production and sale of products
Note - complied by authors based on Gromov, 2009; Nazarova & Kirova, 2021	

The distribution of royalties between the scientist and the university is distributed according to a certain mechanism. As a rule, the researcher receives 50% of the first 100 thousand dollars, received by the university for the implementation of the invention (Cornell University, Princeton University, Ohio University). From subsequent receipts, the scientist receives 20-30% royalties. Sometimes the costs of project support (marketing, patenting) are deducted from these incomes (Gromov, 2009).

In the ranking of the Global innovation index, the United States in 2022 occupies the second position after Switzerland.

Research parks at universities have become widespread in the United States. Within the framework of such parks, cooperation between the government, business and the university (Etzkowitz, Leydesdorff, 2000) is implemented. The research park has a diverse innovation infrastructure on its territory, where small innovative firms can develop from an idea to finished production. As a rule, in such parks, startups receive support at the early stages of their development, when the enterprise looks high-risk and does not have much funding. It is in such parks that technology transfer occurs, when the idea of technology arises at a scientific institute (center) and is embodied on the technical base of the park. The most famous US research park Silicon Valley is located around Stanford University. The Stanford Industrial Park has been operating since 1951 and currently has more than 150 resident companies.

In terms of innovative development, the UK regularly ranks in the top 10 and top 5 in a number of international rankings. Thus, in the Global Innovation Index 2022, the UK took 4th place. The UK innovation system is of the traditional type; it presents all the elements of the innovation system, implements a full cycle from scientific research (fundamental, applied) to implementation in production (Nazarova, Kirova, 2021).

In the UK, universities play a large role in the implementation of scientific research. It is home to four of the top ten universities in the world: Oxford, Cambridge, University College London and Imperial College London. Universities host research and development centers that focus on turning innovative ideas into business ventures. The first research parks in Europe appeared in the UK.

In this country, innovation policy was developed in 1993 with the adoption of a number of laws on patent law, as well as cooperation between universities and the business sector.

The development of programs for targeted state financing of the introduction of university developments has contributed to an increase in the role of British universities in the innovation system. By 2010, the UK has become the leading country in the EU in introducing university developments into industry and producing innovative products.

In the EU, the European Network of Innovation Relay Centers (IRC) has been established to provide communication between universities and business. The network includes 71 centers in EU member states, Bulgaria, Iceland, Israel, Norway, Romania, Switzerland, Turkey and Chile. The main goal of the IRC network is to promote innovation in Europe and increase the competitiveness of European industry through innovation.

In Japan, since the 1980s, great attention has been paid to innovation. Japan's innovation system is distinguished by a high level of development of applied scientific research, the ability of private companies to quickly implement and commercialize R&D results. Private capital is actively involved in the financing of research and development. Japanese universities do not play as important a role in research as they do in the US. The weak link of the Japanese NIS is the lack of attention to fundamental research, the weak development of venture financing.

Intermediary organizations have been created in Japan to transfer technology from universities to industry. The adoption of laws in the field of intellectual property has facilitated the transfer of technology from universities to industry, which has increased the number of research and their implementation. Technopolises have received great development in Japan. As a rule, they are based on traditional industries, creating an infrastructure around them for related, new industries: electronics, robotics, biotechnology, production of new materials, green energy.

The organizational and legal mechanisms for technology transfer that have developed in foreign countries are currently presented in Table 2.

Table 2. Organizational and legal support of commercialization in developed countries

Legal mechanisms	Implementation of the mechanism	Implementing countries
Establishment of ownership of R&D	The right to intellectual property created by the employee is assigned to the organization by the employer	Austria, Belgium, Denmark, Germany, USA, Ireland, Great Britain
	Personal property along with mixed one	Finland, Sweden, Italy, Greece
Implementation of property rights to IP	Royalties are formed in an equal share between the scientist and the organization	France
	Preferential taxation of income received by scientists from the introduction of technology	Ireland
Stimulating the participation of scientists in the transfer of results	The right to own shares in established companies, subject to maintaining the status of a state scientific research institute for six years	Germany, Italy, France, Spain, Portugal
	The right of a state research institute's scientist to simultaneously carry out teaching and entrepreneurial activities	France
Transfer of IP obtained at the expense of the state budget	With the help of an innovative infrastructure that provides consulting and technology support services	France
Control over the use of public spending on R&D	Professor has the right to invest budget money in the creation of innovative companies	Belgium, Germany, France, USA
Engagement of HEIs in R&D	Right to do business through holding companies, creation of small innovative firms at universities	Sweden
Cooperation with international partners	Legislating the participation of foreign partners, often at least two	EU
	Protection of technological innovations through a combination of patents, industrial schemes and trademark patents	USA, Japan, EU
Protecting innovation leadership	IP legislative mechanisms, maintaining a register of IP infringers	US
Engagement into international exports and competition	National brand development programs	USA, EU, Japan, South Korea
	Support for small innovative companies through tougher antitrust laws	USA, EU
	Special tax legislation for technoparks and technozones	EU
Note - complied by authors based on Linkov & Sokolova, 2012; Melaas & Zhang, 2016		

Thus, since the 90s of the 20th century, foreign countries have formed legislation in the field of protection of intellectual property rights, transfer of technologies to industry. This contributed to the growth of applied research, the interest of scientists in the implementation of R&D results in production, as well as the development of an innovative infrastructure that promotes the implementation of research results. At the same time, there are still "blank spots" in domestic legislation that do not allow the full use of the scientific potential of universities, and also hinder the massive introduction of R&D.

Conclusions

In order for the intellectual property of the university to become a source of funding as a result of its implementation at the university level, it is necessary to create an integrated innovation management system. This system should include innovation infrastructure, researchers, as well as legal mechanisms for the protection of intellectual property and technology transfer. The distribution of remuneration for the implemented technology can be distributed between the researcher and the organization in accordance with the agreements concluded.

Legislation in the field of innovation, processes of transfer and commercialization of the results of intellectual activity should take into account the experience and legal norms of foreign countries that are leaders in scientific and technological progress.

Additionally, it is necessary to clear the legislation on regional innovation infrastructure like innovation clusters, technology parks for their more effective participation in regional innovation system.

Information centers, technology transfer centers, services for the examination of patent applications and the subsequent patenting of selected inventions, business incubators, etc., should become elements of the organizational infrastructure for supporting innovation activities.

For the effective commercialization of domestic developments, it is necessary to form such a regional system, which will include universities as organizations that create and disseminate knowledge and technologies, as well as a whole range of legal, financial, social institutions that can ensure effective links between scientific, business, educational organizations in regional economy and society.

Acknowledgements

This research is funded by the Science Committee of the Ministry of Education and Science of the Republic of Kazakhstan (Grant No. AP13268750).

References

Amran, F. H., et al. (2014). Funding trends of research universities in Malaysia. *Procedia-Social and Behavioral Sciences*, 164, 126-134.

Atkinson, R. C., & Blanpied, W. A. (2008). Research Universities: Core of the US science and technology system. *Technology in Society*, 30(1), 30-48.

Benneworth, P., & Charles, D. (2005). University spin-off policies and economic development in less successful regions: Learning from two decades of policy practice. *European Planning Studies*, 13(4), 537-557.

Cesaroni, F., & Piccaluga, A. (2016). The activities of university knowledge transfer offices: Towards the third mission in Italy. The Journal of Technology Transfer, 41(4), 753-777.

Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university–industry–government relations. *Research policy*, 29(2), 109-123.

Evers, N., Cunningham, J., & Hoholm, T. (2020). Technology entrepreneurship: bringing innovation to the marketplace. Bloomsbury Publishing.

Gamata, S., & Urban, B. (2020). Academic entrepreneurship and organisational support factors. *South African Journal of Higher Education*, 34(1), 249-266.

Hall, B. H., & Rosenberg, N. (Eds.). (2010). Handbook of the Economics of Innovation (Vol. 1). Elsevier.

Klofsten, M., & Jones-Evans, D. (2000). Comparing academic entrepreneurship in Europe–the case of Sweden and Ireland. Small Business Economics, 14(4), 299-309.

Laredo, P. Revisiting the third mission of universities: Toward a renewed categorization of university activities? // Higher education policy. – 2007. – №20(4), С.441-456.

Limoges, C., Scott, P., Schwartzman, S., Nowotny, H., & Gibbons, M. // The new production of knowledge: The dynamics of science and research in contemporary societies. The New Production of Knowledge. – 1994. – С.1-192.

Link, A. N., Siegel, D. S., & Wright, M. (Eds.). The Chicago handbook of university technology transfer and academic entrepreneurship. – 2015. – University of Chicago Press.

Melaas, A., & Zhang, F. National innovation systems in the United States and China. // The Center for International Environment and Resource Policy. – 2016. – №36.

Perkmann, M., Tartari, V., McKelvey, M., Autio, E., Broström, A., D'este, P., ... & Sobrero, M. (2013). Academic engagement and commercialisation: A review of the literature on university–industry relations. Research policy, 42(2), 423-442.

Sitenko D. A., Holienka M. Conceptual model of academic entrepreneurship within the framework of the Triple Helix theory // Bulletin of the Karaganda university, Economy Series. – 2022. – №3(107), 165-172.

Yerzhanova S.K. et al. The role of academic spin-off companies in improving the competitiveness of universities. *Bulletin of the Karaganda university, Economy Series.* – 2022. – №2(106), 151-159.

Алибекова, Г. Ж. Проблемы оценки эффективности программ содействия коммерциализации научных разработок в Казахстане [Текст] / Г. Ж. Алибекова, Г. Ж. Таяуова, Ж. Б. Ильмалиев // Комплексное использование минерального сырья. — 2018. — №4. — С. 181–191.

Анисимов Ю. П. Сущность и методы коммерциализации инновации [Текст] / Ю.П. Анисимов, Ю.С. Данилова // Экономинфо. —2017. — № 3. — С. 47-50.

Громов, Ю. А. Передача технологий по лицензионным соглашениям [Текст] / Ю.А. Громов. — М.: Патент, 2009. — 152 с.

Дежина, И. «Ведущие вузы» или «исследовательские университеты»? [Текст] / И. Дежина // Высшее образование в России. — 2004. — №8. — С. 9–17.

Линьков, А. Я. Организационно-правовое обеспечение коммерциализации результатов интеллектуальной деятельности университетов (зарубежный опыт и российская практика) / А. Я. Линьков, В. В. Соколова // Экономика и управление. — 2012. — № 9 (83). — С.63–69.

Назарова, С. В. Особенности национальной инновационной системы Великобритании [Текст] / С. В. Назарова, И. В. Кирова // Экономика и бизнес: теория и практика. — 2021. — № 3–2 (73). — С. 80–84.

Д.А. Ситенко, М. Холиенка

Дамыған елдердегі әзірлемелерді коммерцияландырудың негізгі формалары мен түрлерін талдау

Аңдатпа

Мақсаты: Аймақтық инновациялық жүйеде технологияларды жоо-ның трансферті процесінде қолдану мақсатында дамыған елдердегі әзірлемелерді коммерцияландырудың негізгі нысандары мен түрлерін анықтау.

Әдістер: Зерттеу барысында жүйелік талдау салыстырмалы талдау, топтастыру әдістері, мазмұнды талдау, Жаһандық инновациялық индекс рейтингінің әдістемесі қолданылды.

Қорытынды: Мақалада әлемнің дамыған елдеріндегі коммерцияландырудың негізгі жолдары қарастырылған. Коммерцияландыру процесін ынталандыратын заңнаманы мемлекеттік деңгейде қабылдау нәтижесінде көп жағдайда технологиялар трансфертінің сәтті үлгілері пайда болғаны көрсетілген. Әлемдік тәжірибеде инновациялық ғылыми зерттеулердің нәтижелерін коммерцияландыру тәсілдерін жүйелеу жүргізілді, осы процесті басқару бойынша практикалық ұсыныстар берілген. Сонымен қатар өнертапқыш пен ғылыми ұйым арасында зияткерлік меншікті енгізуден түскен авторлық сыйақыны бөлудің негізгі схемалары айтылған. Дамыған елдерде қолданылатын технологиялар трансфертінің негізгі формалары зерттелген. Экономиканың әртүрлі деңгейлеріндегі инновацияларды коммерцияландырудың маңыздылығы, ҒЗТКЖ нәтижелерін коммерцияландыру моделін қалыптастыруға мемлекеттік саясаттың әсері, университеттердің бизнес секторымен өзара әрекеттестігі туралы қорытындылар жасалған.

Авторлар өнертапқыш пен ғылыми ұйым арасында зияткерлік меншікті енгізуден роялти бөлудің негізгі схемаларын қарастырды. Дамыған елдерде қолданылатын технологиялар трансферінің негізгі нысандары зерттелді. Экономиканың әртүрлі деңгейлеріндегі инновацияларды коммерцияландырудың маңыздылығы, ҒЗТКЖ нәтижелерін коммерцияландыру моделін қалыптастыруға мемлекеттік саясаттың әсері, жоо-лардың кәсіпкерлік сектормен өзара іс-қимылы туралы қорытындылар жасалды.

Тұжырымдама: Мақалада Қазақстанда коммерцияландыруды дамытуға кедергі келтіретін негізгі проблемалар анықталған. Инновациялық экономиканы дамытудың қажетті шарты ретінде университеттерден өнеркәсіпке технологиялар трансфертінің маңыздылығы дәлелденді. Белсенді ғылыми зерттеулер жүргізетін университеттердің негізгі сипаттамалары анықталды. Дамыған елдерде қолданылатын технологиялар трансфертінің негізгі нысандары анықталды, оларға патенттеу, лицензиялық келісімдер, ҒЗТКЖ-ға тапсырыстарды орындау, бөлінетін компанияларды құру жатады. Дамыған елдерде коммерцияландыруды ұйымдастырушылық-құқықтық қамтамасыз ету тәжірибесі жүйеленген, бұл дамушы елдерде технологиялар трансфертін дамыту үшін қызығушылық тудырады.

Кілт сөздер: коммерцияландыру, университет, технологиялар трансферті, үшінші миссия, инновация, лицензиялық келісім.

Д.А. Ситенко, М. Холиенка

Анализ основных форм и типов коммерциализации разработок в развитых странах

Аннотация:

Цель: Выявление основных форм и типов коммерциализации разработок в развитых странах с целью применения в процессе вузовского трансфера технологий в региональной инновационной системе.

Методы: В ходе исследования использовались методы системного анализа, сравнительного анализа, метод группировок, контент-анализ, методология рейтинга Глобального инновационного индекса.

Результаты: В статье рассмотрены основные пути коммерциализации в развитых странах мира. Показано, что во многом успешные модели трансфера технологий возникли в результате принятия на государственном уровне законодательства, стимулирующего процесс коммерциализации. Осуществлена систематизация подходов к коммерциализации результатов инновационных научных исследований в мировой практике, даны практические рекомендации по управлению данным процессом. Авторами рассмотрены основные схемы распределения роялти от внедрения интеллектуальной собственности между изобретателем и научной организацией. Исследованы основные формы трансфера технологий, применяемые в развитых странах. Сделаны выводы о значении коммерциализации инноваций на различных уровнях экономики, о влиянии государственной политики на формирование модели коммерциализации результатов НИОКР, взаимодействию вузов с предпринимательским сектором.

Выводы: В статье выявлены основные проблемы, препятствующие развитию коммерциализации в Казахстане. Обоснована важность трансфера технологий из вузов в промышленность как необходимое условие для развития инновационной экономики. Выявлены основные характеристики вузов, ведущих активные научные исследования. Определены основные формы трансфера технологий, применяемые в развитых странах, которые включают в себя патентование, лицензионные соглашения, выполнение заказов на НИОКР, создание спин-офф компаний. Систематизирован опыт организационно-правового обеспечения коммерциализации в развитых странах, который представляет интерес для развития трансфера технологий в развивающихся странах.

Ключевые слова: коммерциализация, университет, трансфер технологий, третья миссия, инновации, лицензионные соглашения.

References

Alibekova, G. J., Tayauova, G. J., & Ilmaliev, J. B. (2018). Problemy otsenki effektivnosti program sodeistviia komertsializasii nauchnykh razrabotok v Kazakhstane [Problems of evaluating the effectiveness of programs to promote the commercialization of scientific developments in Kazakhstan]. *Kompleksnoe ispolzovanie mineralnogo syria [Integrated use of mineral raw materials]*, (4), 181–191 [in Russian].

Amran, F. H., et al (2014). Funding trends of research universities in Malaysia. *Procedia-Social and Behavioral Sciences*, 164, 126-134.

Anisimov, Yu. P. & Danilova, Yu. S. (2017). Sushchnost i metody kommertsializatsii innovatsii [Essence and methods of commercialization of innovations]. *Ekonominfo [Economicinfo]*, 3, 47–50 [in Russian].

Atkinson, R. C., & Blanpied, W. A. Research Universities: Core of the US science and technology system. *Technology in Society*, 2008, 30(1), 30-48.

Benneworth, P., & Charles, D. (2005). University spin-off policies and economic development in less successful regions: Learning from two decades of policy practice. *European Planning Studies*, 13(4), 537-557.

Cesaroni, F., & Piccaluga, A. (2016). The activities of university knowledge transfer offices: Towards the third mission in Italy. The Journal of Technology Transfer, 41(4), 753-777.

Dezhina, I. (2004). «Vedushchie vuzy», ili «issledovatelskie universitety»? ["Leading Universities" or "Research Universities?"]. *Vysshee obrazovanie v Rossii [Higher education in Russia]*, 8, 9–17 [in Russian].

Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university–industry–government relations. *Research policy*, 29(2), 109-123.

Evers, N., Cunningham, J., & Hoholm, T. (2020). Technology entrepreneurship: bringing innovation to the marketplace. Bloomsbury Publishing.

Gamata, S., & Urban, B. (2020). Academic entrepreneurship and organisational support factors. *South African Journal of Higher Education*, 34(1), 249-266.

Gromov, Yu. A. (2009). *Peredacha tekhnologii po litsenzionnym soglasheniiam [Transfer of technologies under license agreements]*. Moscow: Patent, 152 [in Russian].

Hall, B. H., & Rosenberg, N. (Eds.). (2010). Handbook of the Economics of Innovation (Vol. 1). Elsevier.

Klofsten, M., & Jones-Evans, D. (2000). Comparing academic entrepreneurship in Europe–the case of Sweden and Ireland. Small Business Economics, 14(4), 299-309.

Laredo, P. (2007). Revisiting the third mission of universities: Toward a renewed categorization of university activities? *Higher education policy*, 20(4), 441-456.

Limoges, C., Scott, P., Schwartzman, S., Nowotny, H., & Gibbons, M. (1994). The new production of knowledge: The dynamics of science and research in contemporary societies. *The New Production of Knowledge*, 1-192.

Link, A. N., Siegel, D. S., & Wright, M. (Eds.) (2015). The Chicago handbook of university technology transfer and academic entrepreneurship. University of Chicago Press.

Linkov, A. Ya., & Sokolova, V. V. (2012). Organizatsionno-pravovoe obespechenie kommertsializatsii rezultatov intellektualnoi deiatelnosti universitetov (zarubezhnyi opyt i rossiiskaya praktika) [Organizational and legal support of the commercialization of the results of the intellectual activity of universities (foreign experience and Russian practice)] *Ekonomika i upravlenie [Economics and Management*], 9 (83), 63–69 [in Russian].

Melaas, A., & Zhang, F. (2016). National innovation systems in the United States and China. *The Center for International Environment and Resource Policy*, 36.

Nazarova, S. V. & Kirova, I. V. (2021). Osobennosti natsionalnoi innovatsionnoi sistemy Velikobritanii [Peculiarities of the National Innovation System of Great Britain]. *Ekonomika i biznes: teoriia i praktika [Economics and Business: Theory and Practice]*, 3-2 (73), 80–84 [in Russian].

Perkmann, M., Tartari, V., McKelvey, M., Autio, E., Broström, A., D'este, P., & Sobrero, M. (2013). Academic engagement and commercialisation: A review of the literature on university–industry relations. Research policy, 42(2), 423-442.

Sitenko D. A., Holienka M. (2022). Conceptual model of academic entrepreneurship within the framework of the Triple Helix theory. *Bulletin of the Karaganda university, Economy Series*, 3(107), 165-172.

Yerzhanova S. K. et al (2022). The role of academic spin-off companies in improving the competitiveness of universities. *Bulletin of the Karaganda university, Economy Series*, 2(106), 151-159.

DOI 10.31489/2022Ec4/135-143
JEL: Z32, L83
UDC: 338.482.22

B.D. Zhandilla[*1], R. Shokhan[2], D.G. Mamrayeva[3]

[1,2]L.N. Gumilyov Eurasian National University, Kazakhstan
[3]Karaganda University of the name of academician E.A. Buketov, Kazakhstan
[1]bimerei@mail.ru, [2]roza-shokan@mail.ru, [3]dina2307@mail.ru
[1]https://orcid.org/0000-0002-7580-6987, [2]https://orcid.org/0000-0002-1005-3769,
[3]https://orcid.org/0000-0001-8508-7317

[1]ORCID ID - https://orcid.org/0000-0002-7580-6987,
[2]ORCID ID - https://orcid.org/0000-0002-1005-3769,
[3]ORCID ID - https://orcid.org/0000-0001-8508-7317

[3]Scopus Author ID: 55357690300

[1]Researcher ID: N-6010-2022, [2]Researcher ID: N-3104-2016, [3]Researcher ID: N-6945-2015

Conceptual foundations of the category of tourist destination

Abstract

Object: object of research is the essence of tourist destination.

Methods: The presented research is analytical in nature. The research methods are based on the principles of system-structural analysis, the methods of bibliographic analysis and classification have applied.

bibliographic analysis: which made it possible to update information on publication activity within the framework of the considered scientific problem through the creation and analysis of the search query "tourist destination";

classification method: which made it possible to obtain a classification of types of tourist destination based on the identified features of the grouping.

Findings: The article analyses the key concept of modern tourist discourse – "tourist destination". The article discusses various approaches to the formation and content of the concept of destination, its meaning, and also examines its main features. The analysis of the use of the term "tourist destination" in domestic and foreign scientific literature is carried out, the author's vision is given.

In determining the features of the tourist destination, the 6A system was considered, which groups the main elements inherent in it. The importance of proper planning of the life cycle of a tourist destination in the successful management and development was also revealed.

Conclusions: Contemporary tourism scholars consider the tourist destination from two points of view: visitor's and manager-developers'. Tourist destination consists of several elements: attraction, accessibility, convenience, intermediaries and auxiliary services, the organization of tourist services, and the availability of ready-made tourist products. Having considered the typology of tourist destinations given above, it can be described as a place that can arouse any tourist interest. In conclusion, the destination is a tourist direction with a developed infrastructure and service that can concentrate the interests of tourists and attract them.

Keywords: tourism industry, destination, attractiveness, tourist product, 6A, tourist destination life cycle, tourist motives.

Introduction

The modern international tourism market occupies a leading position as a large developing sector of the global economy. Considering that tourism is extremely important for any country, including the Republic of Kazakhstan, it is necessary to pay attention to the quality of tourist destinations and increase their attractiveness. The question of the ways of development of the destination is the most urgent, requiring creative solutions and a new look in connection with the rapidly changing trends in world tourism. Thus, the winners in the field of tourism will be those countries that have attractive tourist destinations that will attract many visitors.

The formation of the modern domestic tourism industry as a complex economic, social and ecological system is based on the interaction of its subjects, that is, tourists, and objects – tourist destinations. It is the tourist destination that acts as a key component of the tourist system, since it is formed by functionally related elements (tourist resources, tourist and general infrastructure of the territory, labor potential and management), which are located on a certain territory, have information and communication structures to ensure the

[*] Corresponding author. E-mail address: *bimere@mail.ru*

implementation of strategies and tactics for the production and sale of tourist products aimed at effective economic, social and environmental activities in it.

Traditional theories look at a tourist destination as a geographical area but new approaches consider tourism destination as constantly changing socially constructed units. The article summarizes the main theoretical approaches to determining the essence of the economic category "tourist destination". The characteristic of the main approaches to the content of the tourist destination is given. The author's approach to the structure and components of tourist destinations is proposed.

Literature Review

The concept of the destination means "address" in Latin, even though it is one of the main terms for tourism researchers and practitioners over the past 30 years, one cannot state that there exists a single, generally accepted definition or even approach to this term. A destination is a place rich in recreational resources, located in comfortable geographical and transport conditions, and provides tourists with sufficient information about it.

Leiper was one of the first to localize the concept of destination in tourism. One of the first scientifically based concepts of tourist destination was proposed in 1988 by R. Pozzer, who considers the concept to be "a space for stabilizing tourist flows" (Bogoljubov V.S., 2005). In addition, it combines four principles for tourist purposes: environment, attractiveness, service, residents, heritage and culture.

According to S.R. Yerdavletov (2002) "tourist destination is a locality, a place of residence, a natural object, where complex of tourist and excursion services is created on the basis of recreational resources. The tourist complex consists of tourist accommodation facilities (tourist bases, hotels, boarding houses, etc.), catering, shopping centers, sports equipment locations, institutions providing sightseeing and other tourist services".

In foreign literature, the concept of tourist destination is mainly associated with the system of Land Management. Research by C. Metelka (1990) and C. Gunn (2020) define the destination as "a geographical area to which a person travels", or "the territory of the tourist market". Furthermore, a tourist destination can be any geographical location that is interesting for a person engaged in tourism, for example, a city, village, rural locality, special tourist service centers, rivers, lakes, sea (ocean), mountain massifs, landscapes, national parks, nature reserves, etc.

Table 1. Definitions are given to the concept of "destination" in foreign literature

Author	Definition
Leiper N. (2004)	Tourist destination regions – locations that attract tourists to stay temporarily, and in particular those features which inherently contribute to that attraction.
World Tourism Organization (2002)	A tourist destination is a physical space, in which a visitor spends at least one overnight. It includes tourism products such as support services and attractions and tourism resources within one day's return travel time. It has physical and administrative boundaries defining its management, and images and perceptions defining its market competitiveness.
Kotler Ph. (2017)	A tourist destination is a multidimensional tourism product (complex of intangible and tangible elements): main, accompanying, complementary, and enhanced products.
Buhalis D. (2000)	Destinations are amalgams of individually produced tourism amenities and services (accommodation, transportation, catering, entertainment, etc.) and a wide range of public goods (such as landscape, scenery, sea, lakes, socio-cultural surroundings, atmosphere, etc.).
Cooper C. (2005)	A tourism destination is the concentration of favorable conditions and services for tourism activities.
Baggio R. (2010)	Destinations are considered complex systems, represented as a network by enumerating the stakeholders composing it and the linkages that connect them. (…) A tourism destination shares many of these characteristics, encompassing many different companies, associations, and organizations mutual relationships of which are typically dynamic and nonlinear.
Ritchie, Crouch (2003)	Tourist destinations are geographical regions explicitly branded and positioned for tourist enjoyment and all sorts of travel activities.
Note – compiled by the authors on basis of literatures	

The views presented above show that a tourist destination is a specific territory that has the ability to provide a wide range of tourist services and is the purpose of tourist's journey (Table 1). In general, tourist destination is a territory with recreational potential and developed infrastructure (transport roads, hotels, restaurants, entertainment centers, urbanization and etc.) to serve a number of tourist contingents. Also, it is the dominant unit of the tourist system, and it can be described as a center with maximum convenience, services that meet the needs of the service sector and tourists.

Methods

The presented research is analytical in nature. The research methods are based on the principles of system-structural analysis, the methods of bibliographic analysis and classification have applied.

bibliographic analysis: which made it possible to update information on publication activity within the framework of the considered scientific problem through the creation and analysis of the search query "tourist destination";

classification method: which made it possible to obtain a classification of types of tourist destination based on the identified features of the grouping.

Discussion

The peculiarities of the development of the tourism industry and the modern needs of consumers impose several strict requirements on the development and formation of tourist destinations. According to the traditional concept, the tourist destination is considered as "a place where people spend their holidays", the characteristic elements of which are the following: place (development of tourist area and structure), people (demographics, motivation, arrival rating and employment in the destination) and recreation (activities of tourist during the holidays).

Contemporary tourism scholars consider the tourist destination from two points of view:

1. Visitor's perspective – an area so chosen by people to spend their holidays and resulting impacts of their activities.
2. Developer/Manager's perspective – managing the demand for tourism as well as managing the impacts of tourism on the destination. Concepts like carrying capacity, visitor expectation, and resource protection help in managing the fine balance between tourist expectation, tourism demand, and consequences for the destination.

The role of the local community in tourist destination development, guiding and modifying tourist behaviors for minimization of impacts, delivering unique destination experiences, synchronizing the public-private partnerships, and managing the conflicting interests of various stake holders are some of the emerging destination paradigms.

Results

Classification features and types of destinations

One of the main signs of a tourist destination is tourist interest. The emergence of tourist interest is associated with the motivation of travelers to the destination, that is, consumer preferences are different. For example, it is clear that the interest of a tourist who is going to embark on a pilgrimage journey differs from that of vacationers for recreational purposes. Despite the various reasons for travel, it is possible to get the main factor called tourist enthusiasm, making the main goal of the trip. These incentives allow tourists to choose a specific tourist destination, which is the end point of the trip (Erdavletov et al., 2007). Visiting a particular tourist destination is typically motivated less by the elaborated physical characteristics of the site than by the powerful mental and emotional image or "pre-experience" the tourists have for the expected experience at the destination.

At the same time, the types of tourist incentives can also be described by the concept of "tourist motivation". According to some authors, mainly natural and climatic, cultural, economic, and psychological motivations are the main motives for travelers (Fig.1).

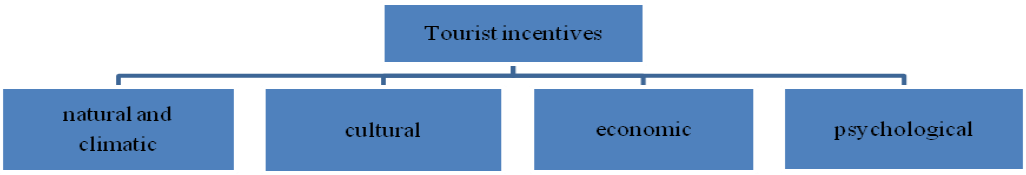


Figure1. Types of tourist incentives

Note – compiled by the authors on a basis of (Erdavletov et al., 2007)

A good understanding of tourist incentives allows the manager to form the best tourist destination, pursue a favorable tourism policy and develop the tourism economy and the region (Erdavletov et al., 2007).

Tourist incentives are a combination of cultural, psychological, physical, etc. needs that satisfy the desires and interests of tourists and affect theirs in thinking about the tourist centers. There are many types of tourist incentives that define a wide variety of types of tourism. Moreover, as tourism spaces, destinations are deliberately constructed to fulfill specific tourist expectations (Meethan K., 2006). The values associated with specific destinations play a crucial role regarding the degree to which people will consider their travel experiences as satisfying and as meeting their expectations (Meethan K., 2006).

Tourist destination establishes the objective and subjective ratio of tourism. 1969 I.V. Zorin examines the factors that form tourist destinations into three groups:

- Formative (according to the needs of tourists);
- Developer (depending on resources);
- Consolidating (related to informing the population) (Cooper et al., 2005).

For long-run tourism growth, it is very important to develop a destination in a well-planned manner. Each destination is characterized by its own specificity, although today the tourist destination can be systematized through its elements as follows (Table 2). The elements of the destination directly affect its attractiveness and popularity. Also, these basic elements can be broken down into attractions ("must see" and "must do") and other elements. The provision and quality of these elements will be influential in the visitor's decisions to make their trip.

Table 2. System of destination elements

Elements	Elements value
Attraction	It includes all those factors which attract tourist, attractions make people interested in visiting them because they are exciting, for example: a place, nature, lakes, beach, monuments, etc.
Accessibility	Availability of internal and external communication and transport links in the destination. Ways to reach.
Amenities	A set of enterprises that provide high-quality tourist services and goods: restaurants, shopping centers, sanitary, and many more.
Ancillary services	The supporting facilities inside and around tourist destinations. Even though some of these facilities may not directly relate to tourism, they are often needed by some visitors: communication channels, internet services, bank ATMs, medical services, and postal services.
Activities	All kinds of activities that visitors are able to do in a tourist destination: sightseeing, swimming, outbound, playing, and taking photographs.
Available packages	Ready-to-sell tourist products prepared according to needs of tourists. You will be able to find various packages which have been combined into one package for the purpose of offering to visitors. They include guiding services, organized tours, and special interest tours.
Note – compiled by the authors on a basis of (Tran et al., 2017).	

The first four elements illustrated in the table can be attributed to the first and second levels of tourism infrastructure. The first level is not directly related to tourist activities, but includes production facilities that are necessary for the provision of tourist services (for instance means of communications, energy, public utilities, finance, insurance, etc.). If the quality of service for objects of the first level is low, this, in turn, negatively affects the attractiveness of destinations.

The second level provides a set of structures that tend to form effective tourist destinations without tourist demand. But their activities expand when they are located in a place of tourist interest (for example, car rental, accommodation, catering, entertainment, and treatment enterprises) (Tran et al., 2017).

The elements "activities" and "available packages" belong to the third level of tourism infrastructure, which is represented by complexes of enterprises, activities of which are aimed at forming and satisfying tourist needs – tour operators and agencies, producers of individual tourist services.

Thus, the tourist destination provides for the needs of tourists, so that it is an isolated geographical space consisting of certain tourist attractions that create an impression of the place. Each destination has its own characteristics, although they can be divided into four groups in general:

1. The destination consists of the following components: attractions, amenities, accessibility, additional services, etc.
2. The destination offers cultural values: visitors should perceive the destination as an attractive place that justifies the time and money spent on the trip.
3. The destination is indivisible, that is, the tourist product is produced where it is used, and in order to consume it, tourists must be in the destination.
4. In addition to tourists, the services of the destination are also used by people: local residents, and employees serving in the travel area.

The stated properties become criteria for different approaches to destination classification. T. Bieger classified tourism destinations according to their size: continents, international areas, countries, regions, villages, tourism localities, and places of attraction (Bieger, T., Beritelli, P., 2012). Another classification of destinations according to geographical properties is offered by Kotler, it consists of a division of macro- and micro-destinations. Macro destinations include a region consisting of thousands of micro destinations, such as the USA: districts, States, large and small cities, and inner-cities destinations.

According to the functional structure, tourist destinations can be classified as follows:

- Climatic centers offering sunbathing: cold beaches (North, Baltic seas) and hot beaches (Mediterranean, Caribbean);
- Balneological and mineral springs;
- Traditional sports (swimming, winter sports, golf) and sports adventure centers (Safari, fishing, Olympic Games);
- Historical, destinations where historical and architectural monuments are located (Egyptian pyramids, Louvre, Hermitage museums);
- Religious, centers where different religious duties are performed and which are symbols of different beliefs (Jerusalem, Mecca, Lourdes);
- Cultural, visiting exhibitions, concerts, theaters, film, opera seasons, conferences and congresses, folklore, national holidays, fairs, and music-based centers;
- Business and shopping centers, visits to fairs, various exhibitions, and organization of business meetings, conference centers, seminars, symposiums, and scientific and political forums;
- Entertainment centers – zoos, casinos, attractions, etc.

However, the market of tourism products is expanding, and at present, we can add new categories to this list. The examples are:

- Dark tourism destinations, associated with death, war, and violence, for instance, concentration camps, cemeteries, etc.;
- Gastronomic tourism destinations, providing new cuisine and food experiences for the customers.

As a tourism product, destinations fall into two categories: mass and alternative. Mass tourism destination is characterized by an extreme concentration of tourists there. Usually, these are all-inclusive resorts, and guided package tours organized by tour operators and agencies (Vainikka V., 2016). Alternative tourism concerns a variety of approaches: eco-tourism, agro-tourism, community tourism, ethical tourism, etc. (Duterme B., 2006). Tourism objects and areas, providing services for these industries may be viewed as alternative tourism destinations.

Classification of destinations according to tourism infrastructure: capital cities, towns being hubs of touristic routes, centers specially built for tourists, or promotion of national or regional culture (Cooper et al., 2005).

Taking destinations as points of touristic routes from the point of consumers, J. Holloway and C. Humphreys (2016) have defined the following destination types:

- Centered destinations, i.e. one locality is chosen for the most time of visit;
- Base destination, i.e. place of stay where tourists stay for a visit with the aim of exploring nearby countryside;
- Multicentered destination, i.e. two or more places of visit chosen for travel;
- Touring destinations i.e. stop of touristic routes, such as ports at cruises;
- Transit destinations, i.e. stop being made on the way to the final destination.

Each of these types of tourist destinations requires special facilities for tourism and tourism-related services.

The life cycle of tourist destination

The notion of the life cycle of a tourist destination is used in the implementation of Destination Management. This concept was introduced by Butler (1980) to explain the progress of a tourist destination over time. This progress is estimated with the number of tourists coming to a destination and their view of the destination. The life cycle of a tourist destination is important in planning a destination and choosing a strategy for its future development (Butler, 1980).

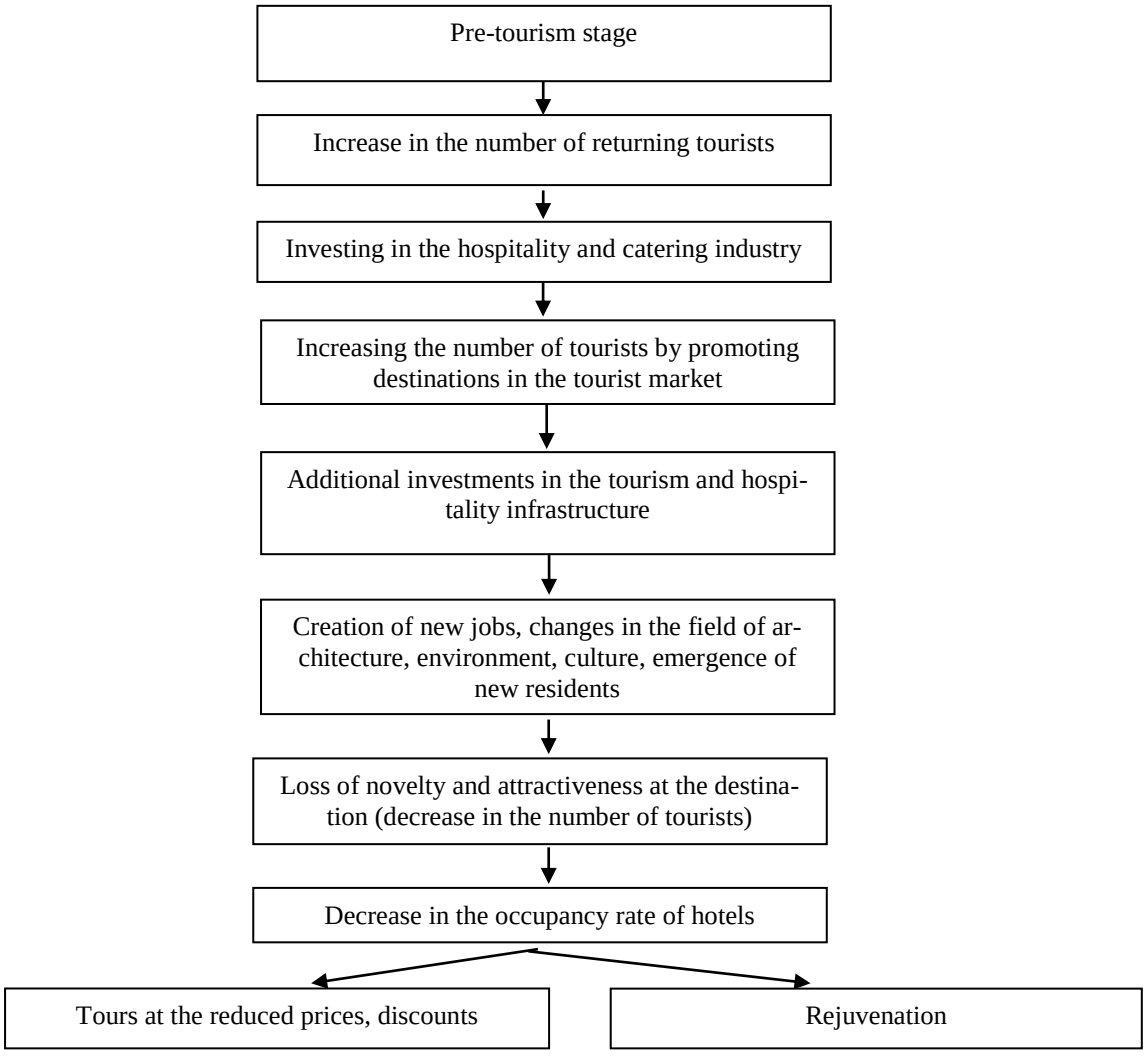


Figure 2. Tourist destination life cycle

Note – compiled by the authors basis on (Butler, 1980)

A destination undergoes an evolutionary cycle of six stages as listed below:

- Exploration (pre-tourism) stage - national and cultural-historical objects of the region have not yet been affected by tourism. The destination is remote with a shy or unknown look, with little or no touristic development.
- Involvement stage – visitors / tourists from the congested city centers are fascinated by the calm and unspoiled landscape of the destination. During this stage, people from different groups work together for the betterment of tourism.
- Development stage – the number of tourists increases and at peak periods it is more than the size of the local population.
- Consolidation stage – the destination becomes a fully fledge known destination among the tourists.
- Stagnation stage – the tourism landscape becomes overriding and little scope is available for further expansion.

- Decline stage – the destination loses its charm and tourists find out some newer destination of the same choice. There are chances of two more events in the declining stage and these are:
  a) Stagnation (in the declining stage);
  b) Rejuvenation (in declining stage);
  c) Declining (in the declining stage).

However, this model of destination development by Butler is not applicable or appropriate for each destination as Choy (1992) suggested that it is better to treat each destination individually. Each destination is a unique entity, and if managers decide to control development and limit the construction of tourist facilities before the destination reaches the stagnation stage, the destination can live for a longer time.

Tourists' destination life cycle finds out the long-term profitability of any destination by using it as a conceptual framework, as a tool for forecasting, and as a guide to strategic planning and development.

Conclusion

To carry out effective, competitive activities, many tourist centers perform their activities in the form of destinations. Contemporary tourism scholars consider the tourist destination from two points of view: visitor's and manager-developers'. It is characterized as a destination for visitors, a final destination for tourist travel, and for managers – developers - a place of concentration of tourist requests and their management. Each tourist destination is characterized by its own characteristics. It combines several elements: attraction, accessibility, convenience, intermediaries and auxiliary services, the organization of tourist services, and the availability of ready-made tourist products. Having considered the typology of tourist destinations given above, it can be described as a place that can arouse any tourist interest. It can be from large cities to small thematic parks. In general, the role of the destination location, infrastructure, local population, and quality of service in the organization and development of destinations is also special. And the most important condition for creating a destination today is the presence of an information system. It performs the main function of promoting destinations in the market, awakening tourist interests. The wide spread of information about tourist destinations increases the demand bag for them. Therefore, in the organization of tourist destinations developed at any high level, much attention is paid to marketing. In conclusion, the destination is a tourist destination with a developed infrastructure and service that can concentrate the interests of tourists and attract them.

References

Baggio, R. Network science: A review focused on tourism / R. Baggio, N. Scott, & C. Cooper // Annals of Tourism Research. — 2010. — 37(3). — P. 802–827. https://doi.org/10.1016/j.annals.2010.02.008

Bieger, T. Management von Destination / T. Bieger, P. Beritelli // Oldenburg Verlag. — 2012. https://doi.org/10.1524/9783486721188

Buhalis, D. Marketing the competitive destination of the future / D. Buhalis // Tourism Management. — 2000. — 21(1). — P. 97–116. Retrieved from https://doi.org/10.1016/S0261-5177(99)00095-3

Butler R. W. The Concept of a Tourist Area Cycle of Evolution: Implications for Management of Resources / R. W. Butler // Canadian Geographer. — 1980. — 24(1). — P. 5–12. http://doi.org/10.1111/j.1541-0064.1980.tb00970.x

Choy D. J. L. Life Cycle Models for Pacific Island Destinations / D. J. L. Choy // Journal of Tourism Research. — 1992. — 30(3). — P. 26–31. https://doi.org/10.1177/004728759203000304

Cooper C. Tourism Principles and Practices / C. Cooper, J. Fletcher, D. Gilbert, A. Fyall, & S. Wanhill // Pearson Education. — 2005.

Duterma B. Expansion du tourisme international: gagnants et. Perdants / B. Duterma // *Alternative Sud.* — 2006. — 13. — P. 7–22. Retrieved from https://www.collectif-communiste-polex.org/librairie/tourismeduterme.pdf

Gunn C. A. Tourism Planning: Basics, Concepts, Cases / C. A. Gunn, T. Var // Routledge: Oxfordshire, 2020.

Holloway C. J. The Business of Tourism / C. J. Holloway, C. Humpreys // Harlow Pearson Education. — 2016.

Kotler Ph. Marketing for Hospitality and Tourism / Ph. Kotler, J.T. Bowen, J.C. Makens, S. Baloglu // Pearson, 2017.

Leiper N. Tourism Management / N. Leiper // Pearson Education, 2004.

Meethan K. Tourism consumption and representation: Narratives of place and self / K. Meethan, A. Anderson, S. Miles // CABI, 2006.

Metelka C. J. The Dictionary of Hospitality, Travel and Tourism / C. J. Metelka // Delmar Publishers, 1990.

Ritchie J. R. B. The competitive destination: A sustainable tourism perspective / J. R. B. Ritchie, G. I. Crouch // CABI Publishing, 2003. http://doi.org/10.1079/9780851996646.0000

Tran H. M. (SA) 6: A new framework for the analysis of smart tourism destinations. A comparative case study of two Spanish destinations / H. M. Tran, A. Huertas, A. Moreno // Congr.-Semin. Destin. Tur. Intel. — 2017. — P. 190–214. Retrieved from https://rua.ua.es/dspace/bitstream/10045/70149/5/Actas-Seminario-Destinos-Turisticos-Inteligentes_09.pdf

Vainikka V. E. Tourist guide reflections on the spatialities of mass tourism: A case study of Finnish package tourism in Crete / V. E. Vainikka // Fennia: International Journal of Geography. — 2016. — 196(1). — P. 64–78. Retrieved from https://fennia.journal.fi/article/view/40925

WTO. Think tank / World Tourism Organization, 2002. https://world-tourism.org/

Боголюбов В. С. Экономика туризма / В. С. Боголюбов, В. П. Орловская. — М.: Академия, 2005.

Ердавлетов С. Р. Туристский кластер и проблемы формирования индустрии туризма Казахстана / С. Р. Ердавлетов, А. Ю. Подвалов, М. А. Титова // Материалы III Междунар. науч.-практ. конф. «География туризма: актуальные вопросы теории и практики». — 2007. — С. 5–10.

Ердавлетов С. Р. Индустрия туризма, условия и факторы ее развития и территориальной организации / С. Р. Ердавлетов // Проблемы становления индустрии туризма Казахстана. — 2002. — С. 13–26.

Б.Д. Жанділла, Р. Шохан, Д.Г. Мамраева

Туристік дестинация санатының тұжырымдамалық негіздері

Аңдатпа

Мақсаты: Зерттеу нысаны туристік дестинацияның ұғымының мәні анықтау.

Әдісі: Ұсынылған зерттеу аналитикалық болып табылады. Зерттеу әдістері ретінде жүйелік-құрылымдық талдау принциптеріне негізделген, библиографиялық талдау және жіктеу әдістері қолданылған.

- *библиографиялық талдау*: «туристік дестинация» іздеу сұранысын талдау және құру арқылы қарастырылып отырған ғылыми мәселе шеңберінде жарияланған ақпараттарды толықтыруға мүмкіндік жасайды;

- *жіктеу әдісі*: анықталған топтастыру белгілері негізінде туристік дестинация түрлерін жіктеуге мүмкіндік берді.

Нәтижелер: Мақалада қазіргі туристік дискурстың негізгі тұжырымдамасы — «Туристік бағыт» талданған. Мақалада дестинация ұғымының қалыптасуы мен мазмұнына, оның маңыздылығына қатысты әртүрлі тәсілдер қарастырылған, сонымен қатар оның негізгі ерекшеліктері зерттелген. Отандық және шетелдік ғылыми әдебиеттерде "туристік дестинация" терминінің қолданылуына талдау жасалған, авторлық көзқарас берілген.

Туристік бағыттың ерекшеліктерін анықтау кезінде оған тән негізгі элементтерді топтастыратын 6А жүйесі талқыланған. Сондай-ақ табысты басқару және дамыту үшін туристік бағыттың өмірлік циклін дұрыс жоспарлаудың маңыздылығы анықталған.

Қорытынды: Қазіргі заманғы туризм зерттеушілері туристік дестинацияны екі тұрғыдан қарастырады: келушілер тұрғысынан және әзірлеуші менеджерлер тұрғысынан. Туристік бағыт бірнеше элементтерден тұрады: тартымдылық, қол жетімділік, ыңғайлылық, делдалдық және көмекші қызметтер, туристік қызметтерді ұйымдастыру және дайын туристік өнімдердің болуы. Туристік бағыттың жоғарыдағы типологиясын қарастыра отырып, оны кез келген туристік қызығушылық тудыратын орын ретінде сипаттауға болады. Қорытындылай келе, дестинация — бұл дамыған инфрақұрылымы мен қызметі бар туристік бағыт, ол туристердің мүдделерін шоғырландырып, оларды тарта алады.

***Кілт сөздер*:** туризм индустриясы, дестинация, тартымдылық, туристік өнім, 6А, туристік дестинацияның өмірлік циклі, туристік мотивтер.

Б.Д. Жанділла, Р. Шохан, Д.Г. Мамраева

Концептуальные основы категории туристской дестинации

Аннотация:

Объект: Объектом исследования является сущность туристической дестинации.

Методы: Представленное исследование носит аналитический характер. Методы исследования основаны на принципах системно-структурного анализа, применены методы библиографического анализа и классификации:

- *библиографический анализ*: который позволил обновить информацию о публикационной активности в рамках рассматриваемой научной проблемы, путем создания и анализа поискового запроса “туристическая дестинация”;

- *метод классификации*: который позволил получить классификацию типов туристических направлений на основе выявленных признаков группировки.

Результаты: В статье проанализировано ключевое понятие современного туристического дискурса — «туристическая дестинация». Рассмотрены различные подходы к формированию и содержанию понятия «дестинация», ее значение, а также исследованы ее основные особенности. Проведен анализ использования термина «туристкая дестинация» в отечественной и зарубежной научной литературе, дано авторское видение.

При определении особенностей туристического направления была рассмотрена система 6А, которая группирует основные элементы, присущие ей. Также была выявлена важность правильного планирования жизненного цикла туристического направления для успешного управления и развития.

Выводы: Современные исследователи туризма рассматривают туристскую дестинацию с двух точек зрения: с точки зрения посетителя и менеджеров-разработчиков. Туристическое направление состоит из нескольких элементов: привлекательность, доступность, удобство, посреднические и вспомогательные услуги, организация туристических услуг и наличие готовых туристических продуктов. Рассмотрев приведенную выше типологию туристкой дестинации, ее можно охарактеризовать как место, которое может вызвать любой туристический интерес. В заключение можно сказать, что дестинация — это туристическое направление с развитой инфраструктурой и сервисом, которое может сконцентрировать интересы туристов и привлечь их.

Ключевые слова: индустрия туризма, дестинация, привлекательность, туристический продукт, 6А, жизненный цикл туристской дестинации, туристские мотивы.

References

Baggio, R., Scott, N., & Cooper, C. (2010). Network science: A review focused on tourism. *Annals of Tourism Research*, 37(3), 802-827. Retrieved from https://doi.org/10.1016/j.annals.2010.02.008

Bieger, T., & Beritelli, P. (2012). Management von Destination. Oldenburg Verlag. Retrieved from https://doi.org/10.1524/9783486721188

Bogoliubov, V. S., & Orlovskaya, V. P. (2005). Ekonomika turizma [Tourism Economy]. Moscow: Akademiia. https://tourlib.net/books_tourism/bogolubov.htm [in Russian].

Buhalis, D. (2000). Marketing the competitive destination of the future. *Tourism Management*, 21(1), 97-116. https://doi.org/10.1016/S0261-5177(99)00095-3

Butler, R. W. (1980). The Concept of a Tourist Area Cycle of Evolution: Implications for Management of Resources. *Canadian Geographer*. 24(1), 5-12. Retrieved from http://doi.org/10.1111/j.1541-0064.1980.tb00970.x

Choy, D. J. L. (1992). Life Cycle Models for Pacific Island Destinations. *Journal of Tourism Research*. 30(3), 26-31. Retrieved from https://doi.org/10.1177/004728759203000304

Cooper, C., Fletcher, J., Gilbert, D., Fyall, A., & Wanhill, S. (2005). Tourism: Principles and Practices. Pearson Education.

Duterma, B. (2006). Expansion du tourisme international: gagnants et. perdants. *Alternative Sud.* 13. 7-22. https://www.collectif-communiste-polex.org/librairie/tourismeduterme.pdf

Erdavletov, S. R., Podvalov, A. Yu., & Titova, M. A. (2007). Turistskii klaster i problemy formirovaniia industrii turizma Kazakhstana [Tourist cluster and problems of formation of the tourism industry of Kazakhstan]. *Materialy III Mezhdunarodnoi nauchno-prakticheskoi konferentsii «Geografiia turizma: aktualnye voprosy teorii i praktiki»[Materials of the III International Scientific and Practical Conference "Geography of tourism: current issues of the theory and practice"]*, 5–10 [in Russian].

Erdavletov, S. R. (2002). Industriia turizma, usloviia i faktory ee razvitiia i territorialnoi organizatsii [Tourism industry, conditions and factors of its development and territorial organization]. *Problemy stanovleniia industrii turizma Kazakhstana — Problems of the formation of the tourism industry of Kazakhstan,* 13–26 [in Russian].

Gunn, C. A., & Var, T. (2020). Tourism Planning: Basics, Concepts, Cases. Routledge: Oxfordshire.

Holloway C. J., & Humpreys C. (2016). The Business of Tourism. *Harlow Pearson Education*.

Kotler, Ph., Bowen, J.T., Makens, J.C., Baloglu, S. (2017). Marketing for Hospitality and Tourism. *Pearson*.

Leiper, N. (2004). Tourism Management. *Pearson Education*.

Meethan, K., Anderson, A., & Miles, S. (2006). Tourism consumption and representation: Narratives of place and self. *CABI*.

Metelka, C. J. (1990). The Dictionary of Hospitality, Travel and Tourism. *Delmar Publishers*.

Ritchie, J. R. B., & Crouch, G. I. (2003). The competitive destination: A sustainable tourism perspective. CABI Publishing. Retrieved from http://doi.org/10.1079/9780851996646.0000

Tran, H. M., Huertas, A., & Moreno, A. (2017). (SA) 6: A new framework for the analysis of smart tourism destinations. A comparative case study of two Spanish destinations. *Congr.-Semin. Destin. Tur. Intel., 190-214* Retrieved from https://rua.ua.es/dspace/bitstream/10045/70149/5/Actas-Seminario-Destinos-Turisticos-Inteligentes_09.pdf

Vainikka, V. E. (2016). Tourist guide reflections on the spatialities of mass tourism: A case study of Finnish package tourism in Crete. *Fennia: International Journal of Geography*, 196(1), 64-78. https://fennia.journal.fi/article/view/40925

WTO (2002). Think tank. World Tourism Organization. Retrieved from https://world-tourism.org/

DOI 10.31489/2022Ec4/144-152
JEL: H10
ӘОЖ: 351

М.К. Асанова[1*], Г.А. Райханова[2], Р.А. Рахимжанова[3], С.Г.Серикбаева[4], А.Т. Жансейтов[5]

[1,2,3,5] Е.А. Бөкетов атындағы Қарағанды университеті, Қарағанды, Қазақстан;
[4]Қазақ ұлттық аграрлық зерттеу университеті, Алматы, Қазақстан
[1] massanova77@mail.ru, [2] gulnurraihanova@mail.ru, [3] orymbekova.raushan@mail.ru,
[4]S.Serikbayeva@mail.ru, [5]azamat.zhanseitov@icloud.com

[1]https://orcid.org/0000-0001-8092-5879, [2]https://orcid.org/0000-0001-5355-4590, [3]https://orcid.org/0000-0001-8630-4184, [4]https://orcid.org/0000-0001-7053-6503[5] https://orcid.org/0000-0001-9495-0530

[1]Scopus Author ID: 36080755500, [2]Scopus Author ID: 57222346683, [3]Scopus Author ID: 57190606396
[4]Scopus Author ID: 57192916941,[5]Scopus Author ID: 57201319204

[1]Researcher ID: P-8325-2018, [2]Researcher ID: AAF-6220-2020, [3]Researcher ID: AAF-6537-2020

Мемлекеттік сатып алу саласындағы өзекті мәселелер

Аңдатпа:

Мақсаты: Қазақстан Республикасындағы мемлекеттік сатып алу саласындағы өзекті мәселелерді зерттеу. Соңғы жарияланған статистикалық көрсеткіштерді көрсету.

Әдістері: Зерттеудің теориялық және әдіснамалық негізі — мақаланың тақырыбына қатысты заңнамалық актілер, нормативтік құжаттар. Ғылыми мақаланы жазу үшін ақпарат көзі оқу әдебиеті, осы саладағы ірі ғалымдардың іргелі теориялық еңбектері, көрнекті отандық және шетелдік авторлардың практикалық зерттеулерінің нәтижелері, мемлекеттік басқару тақырыбына арналған арнайы әдебиеттер мен мерзімді басылымдардағы мақалалар мен шолулар пайдаланылды.

Нәтижесі: Мақалада жалпы мәселелер қарастырылған. Негізгі ұғымдар айқындалды, мемлекеттік сатып алуды құқықтық реттеудің өзектілігі мен практикалық маңыздылығы анықталды. Мемлекеттік сатып алу үдерісіндегі негізгі қателіктер көрсетілді. Мемлекеттік сатып алу туралы жазылған авторлардың еңбектеріне және әлемдік тәжірибеге шолу жасалды.

Қорытынды: Жекелеген деректер негізінде қазіргі жай-күйге талдау, сондай-ақ мемлекеттік сатып алуды дамытудың перспективалары мен үрдістеріне талдау жүргізілді. Мемлекеттік сатып алу туралы Заң қабылданған сәттен бастап оған 20 рет, оның ішінде ағымдағы жылдың басынан бастап төрт рет өзгерістер мен толықтырулар енгізілді. Қазақстан Республикасының Мемлекеттік сатып алу жүйесі жыл сайын өзгеріп отыратындықтан, осы саладағы қатынастарды реттеуді оңтайландыру мақсатында ұсыныстар берілген.

Кілт сөздер: мемлекеттік сатып алу, конкурс, цифрландыру, сыбайлас жемқорлық, заңнама, баға ұсыныстары, электронды сатып алу, веб-портал.

Кіріспе

Мемлекеттік сатып алу мемлекеттік сектор шығыстарының тиімділігін қамтамасыз етуде тікелей рөл атқарады. Мемлекеттік саясаттың мақсатына қол жеткізудің, мемлекеттік шығыстарды азайтудың және азаматтардың сенімін нығайтудың маңызды тетігі ретінде мемлекеттік сатып алуды үнемі жетілдіру қажеттілігі туындайды. Осы тұрғыда мемлекеттік сатып алу жүйелерін дамытудың басты мақсаты оларды жоспарлаудың, сатып алу рәсімдерін ұйымдастырудың және тұтынушыларға ұсынудың тиімділігін арттыру болып табылады. Сонымен қатар, мемлекеттік және жеке секторлар үшін қайталанатын процестерді жою, инновациялық цифрлық басқару құралдары арқылы сатып алу тәжірибесін өзгерту және шешім қабылдау үшін деректерді әзірлеу — бұл XXI ғасырдағы қазіргі заманғы мемлекеттік сатып алу жүйесінің маңызды элементтері.

Соңғы жылдары Қазақстандағы мемлекеттік сатып алу жүйесі көптеген елеулі өзгерістерге ұшырады, бұл мемлекеттік қызметтерді тиімді ұсыну үшін осы функцияның маңыздылығының артуына, сондай-ақ мемлекеттік ұйымдар мен азаматтардың барған сайын күрделі сұраныстарына жауап беру қажеттілігіне байланысты. Алайда, заңдағы жиі өзгерістерді білмеу немесе жаңа ережелер мен оларды қолдану тәсілдерін түсінбеу салдарынан Мемлекеттік сатып алу мамандарының жіберген қателіктерінің саны көбеюі мүмкін. 2015 жылы қабылданған «Мемлекеттік сатып алу туралы» Қазақстан Республикасының құқықтық актісі мемлекеттік сатып алудың құқықтық базасының негізі болып саналады. Мемлекеттік сатып алу саласындағы нормативтік база мемлекеттік органдар мен ұйымдар-

*Хат-хабарларға арналған автор. E-mail: *massanova77@mail.ru*

ға, сондай-ақ 50%-дан астамы мемлекетке тиесілі кәсіпорындар мен ұйымдарға қолданылады. «Мемлекеттік сатып алу туралы» құқықтық акт тиісті мемлекеттік тапсырыс сомасына қарамастан кез келген тауарларды, жұмыстарды және қызметтерді сатып алуды реттейді. Заң барлық әлеуетті өнім берушілерге, оның ішінде шетелдік қатысушыларға рұқсат берудің тең шарттарын көздейді. Алайда, іс жүзінде шетелдік жеткізушілердің мемлекеттік сатып алуға қатысуы, атап айтқанда, мемлекеттік сатып алудың электрондық жүйесінің құрылымына негізделген бірқатар кедергілерден тұрады. Мұндай кедергілердің болуы, мүдделі тараптардың пікірінше, Қазақстанның ұлттық мүдделерімен түсіндіріледі және іс жүзінде Үкіметтің әрекеттері отандық өндірушіні қолдауға деген ұмтылысты көрсетеді. Заң мемлекеттік сатып алудың жылдық жоспарларына енгізілмеген тауарларды, жұмыстарды және қызметтерді сатып алуға тыйым салады. Мемлекеттік сатып алу туралы шарттар азаматтық-құқықтық сипаттағы әдеттегі шарттар болып табылады. Электрондық мемлекеттік сатып алу платформасында мемлекеттік тапсырыс берушілер пайдалануға міндетті шарттардың әртүрлі нысандары бар, бірақ осы нысандағы өнім берушілердің шарттарына қосымша баптар мен тармақтарды енгізуге жол беріледі.

Заңнаманың негізгі қағидаларының ішінде сапа туралы ереже көрсетілмеген, бірақ қаражатты оңтайлы және тиімді жұмсауға бағытталған. Сондай-ақ, сыбайлас жемқорлыққа қарсы қызметтің жұмыстар мен қызметтерге бағаны көтеруге бағытталған хабарламалары негізсіз. Олардың өндіріс көлемі әр түрлі болуы мүмкін болғандықтан, нарықтағы орташа бағамен салыстырғанда олардың нақты құнына назар аудару қажет. Бірақ мұндай жағдайларда Тапсырыс берушінің жауапкершілігін атап өткен жөн. Тікелей бір көзден келісімшарт жасасу кезінде олар нарықтық бағадан асатын және қаражатты тиімді жұмсау принципіне қайшы келетін әрекеттерді жасайды. Мәселен, аудандық маңызы бар қалалар, ауылдар, кенттер және ауылдық округтер әкімдерінің аппараттары үшін үш мың айлық есептік көрсеткіштен аспайтын сомаға тікелей бір көзден келісімшарттар жасауға рұқсат етілді. Мұнда сыбайлас жемқорлық тәуекелінің жоғары деңгейі бар, өйткені нақты сатып алуды ұйымдастыру үшін ол бәсекелестік ортада емес, жалғыз жеткізушінің мүддесі үшін жүзеге асырылады. Бастапқыда бұл уақытша ереже ретінде қабылданды және 2021 жылдан бастап бұл мекемелер бұл құқықтан айырылды. Алайда, осы нормаға сәйкес көптеген құқық бұзушылықтар жасалды және сәйкесінше мекеме басшылары жауапқа тартылды. Жеткізушілердің мүдделері үшін іс-шаралар бәсекелестік ортада да орын алады.

Тапсырыс беруші белгілі бір әлеуетті өнім берушіні құжаттама немесе біліктілік бойынша тендерге қатысуға негізсіз жібермейді. Осы жағдайда әлеуетті өнім беруші өз құқықтарын қорғай алатын шараларды қабылдауы мүмкін болса да, тапсырыс берушінің мұндай әрекеттері құқық бұзушылық болып табылады. Бұл әрекеттер сыбайлас жемқорлық тәуекелі ретінде де танылады. Экономикалық дағдарыстың әсерінен мемлекеттік сатып алу аясында көптеген жаңа әлеуетті жеткізушілер пайда болды. Кейбір сатып алулар бойынша аз тәжірибе болғандықтан, олар жеңімпаз болу үшін бағаны төмендетуді қалайтын клиенттер үшін қолайсыздықтар тудырады. Атап айтқанда, келісімшарт жасалғаннан кейін, міндеттемелерді толық немесе ішінара орындағаннан кейін, Мемлекеттік сатып алу кезінде Тараптар арасында даулы мәселелер туындайды. Бұл өз кезегінде тапсырыс берушінің бөлінген қаражатты толық игермеуіне әкеледі. Сонымен қатар, заңнама Тараптар арасында кейбір ережелер бойынша, атап айтқанда оларды қолдануға қатысты даулы мәселелерді көтереді. Келісімшартты орындау барысында баға ұсыныстарын сұрату арқылы сатып алуды жүргізу кезінде келісімшарттың орындалуын қамтамасыз етуді енгізу бойынша қайшылық туындайды. 2015 жылғы Құқықтық актінің 43-бабының 9-тармағына сәйкес өнім беруші Мемлекеттік сатып алу туралы шарт жасалған күннен бастап он жұмыс күні ішінде мемлекеттік сатып алу туралы шарттың орындалуын қамтамасыз етуді ұсынуға міндетті. Егер жеңімпаз деп танылған әлеуетті өнім беруші осы Заңда белгіленген мерзімде мемлекеттік сатып алу туралы шарт жасаса және Мемлекеттік сатып алу туралы шарттың орындалуын қамтамасыз етуді ұсынбаса, онда мұндай әлеуетті өнім беруші Мемлекеттік сатып алу туралы шарт жасасудан жалтарған болып танылады. Бұл жағдайда оны мемлекеттік сатып алуға жосықсыз қатысушылардың тізіліміне енгізу керек (ҚР «Мемлекеттік сатып алу туралы» Заңы, 2015). Зерттеудің сұрағы: Мемлекеттік сатып алу барысы қоғам ішіндегі өзгерістерге әсер етеді ме?

Әдебиетке шолу

Қазақстан үкіметі соңғы жылдары жүргізіп отырған ресми реформалар бойынша күш-жігер Мемлекеттік сатып алуға айтарлықтай дәрежеде бағытталды, өйткені олар азаматтардың әл-ауқатына

өсіп келе жатқан ықпалына байланысты басым сала болып саналады (Экономикалық ынтымақтастық және даму ұйымы, 2019 ж.).

Реттеу сапалы әлеуметтік қызметтерге қол жеткізуді қамтамасыз ете отырып, мемлекеттің стратегиялық міндеттерін шешуге ықпал етеді (Costamagna, 2017).

Мемлекеттік сатып алуды қаржылық реттеу Мемлекеттік қаржы заңнамасы жүйесінің жұмыс істеуімен байланысты аса маңызды міндет болып табылады (Dairabayeva, N., Ibragimov, Z., & Kapsalyamova, S. 2018).

Мемлекеттік сатып алулардың барабар жұмыс істеуі кезінде олар мемлекеттік ресурстарды үнемдеудің және халықтың мемлекеттік институттарға деген сенімін арттырудың тиімді құралы болады деп болжанады (Otter & Weber, 2015).

Мемлекеттік сатып алу денсаулық сақтау, білім беру және қоғамдық қауіпсіздікті қоса алғанда, мемлекеттік қызметтерді ұсынуда маңызды рөл атқарады (Toeba, 2018).

Қазақстанның Мемлекеттік сатып алу жүйесінде жиі және жылдам өзгерістермен шарттар жасасу рәсімдерін реттеу мен қадағалауды біртіндеп қатаңдатудың жалпы тенденциясы атап өтілді, бұл ашықтық үшін ықтимал кедергілер тудыратын фактор ретінде түсіндірілуі мүмкін, бірақ сонымен бірге бұл үрдіс анықталған бұзушылықтарға реакцияны білдіруі мүмкін, демек, жүйеге пайдалы әсер етуі мүмкін (Kirn, M., Umek, L., & Rakar, I. 2019).

Мемлекеттік сатып алу саласындағы орасан зор қаржылық айналым сыбайлас жемқорлық пен мүдделер қақтығысы тұрғысынан тәуекелдер туғызады (Mrak et al., 2016).

Қазақстанның сыбайлас жемқорлыққа қарсы саясатының негізгі заңнамалық актілерінің бірі «Сыбайлас жемқорлыққа қарсы іс-қимыл туралы» Заң болып табылады. Сыбайлас жемқорлықтың алдын алу жөніндегі шаралар, сондай-ақ сыбайлас жемқорлыққа қарсы іс-қимылдың тиімділігін арттыруға бағытталған мемлекеттік органдар қызметінің негізгі бағыттары бекітіледі. Бұдан басқа, ол мемлекеттік органдар қызметінің жариялылығын, заңдылығы мен ашықтығын, сыбайлас жемқорлық құқық бұзушылықтар үшін заңды жауапкершіліктің бұлтартпастығын, мемлекет пен азаматтық қоғам институттарының өзара іс-қимылын қамтамасыз ететін қағидаттарды белгілейді. Бұл принциптер әділ экономикалық өсуге ықпал ету мақсатында мемлекеттік органдардың жұмыс істеуінің бастапқы нүктесі болуы керек (Zabokrytskyy, I. 2019).

Ашықтық бәсекелестік принципі сияқты басқа да маңызды компоненттердің негізін құрайтын мемлекеттік сатып алудың негізгі жетекші принципі болып саналады (Kirn et al., 2019). Қағидатты іске асырудың ажырамас элементі Интернет арқылы келісімшарттар туралы деректерге жария қол жеткізу болып табылады, бұл мемлекеттік тапсырыс берушілерді өз міндеттерін орындауға жауапкершілікпен қарауға итермелеуі тиіс, сондай-ақ рәсімдерді автоматтандыруды (мысалы, шағымдануды қамтамасыз ету, тендердің нәтижелері) және барлық тиісті мүдделі тараптар үшін нарыққа тең қол жеткізу. 2016 жылдан бастап Қазақстандағы барлық дерлік мемлекеттік сатып алулар (әскери қолданумен байланысты және т.б. қоспағанда) әрбір мемлекеттік тапсырыс беруші үшін міндетті Электрондық сатып алу жүйесі арқылы жарияланады және өткізіледі. Оны Қаржы министрлігі жанындағы Электрондық коммерция орталығы басқарады және сатып алу циклінің әртүрлі кезеңдерін, соның ішінде сатып алу жоспарларын жариялауды қамтиды.

Сонымен қатар, бұл қосымшалардың құнын төмендетіп, жақсы идентификаторларды тартып, сыбайлас жемқорлықты азайтуы мүмкін (Kochanova Anna, Zahid Hasnain and Bradley Larson. 2016). Мемлекеттік сатып алуларындағы сыбайлас жемқорлық мәселелеріне ерекше назар аударғанын және бұл «Мемлекеттік мекеменің дәрменсіздігі және заңсыз және стандартты емес заттарды шамадан тыс пайдалану салдарынан болатынын атап өтуге болады» (Langr, Ivan. 2018.). Электронды өтінім берудің де, электронды сатып алудың да артықшылықтары көбінесе елдің даму деңгейіне, адами капиталға және технологияға байланысты деп санайды. Сондықтан институционалдық реформалар электронды үкіметке, әсіресе табысы төмен елдерде инвестициялармен бірге жүруі керек (Kochanova Anna, Zahid Hasnain and Bradley Larson. 2016). Сонымен қатар, электрондық сатып алу жүйелерін дамыту мәселесін зерттей отырып, мемлекеттік органдардың тиімділігі мен есептілігін арттыруда электрондық сатып алудың құндылығына қарамастан, оларды біртіндеп емес, дереу біртіндеп жақсарту қажет деген қорытындыға келеді. Сонымен қатар, авторлар электронды сатып алудың әлеуетті артықшылықтары көбінесе басқаруда көрегендіктің қолданылуына байланысты деп санайды (Bromberg, Daniel and Aroon Manoharan. 2015).

Екінші жағынан, зерттеушілер мемлекеттік басқаруда АКТ қолданудың жағымсыз жақтарын да атап өтеді. Сонымен, цифрлық деректерге қол жетімділікті кеңейту кезінде мемлекеттік органдар

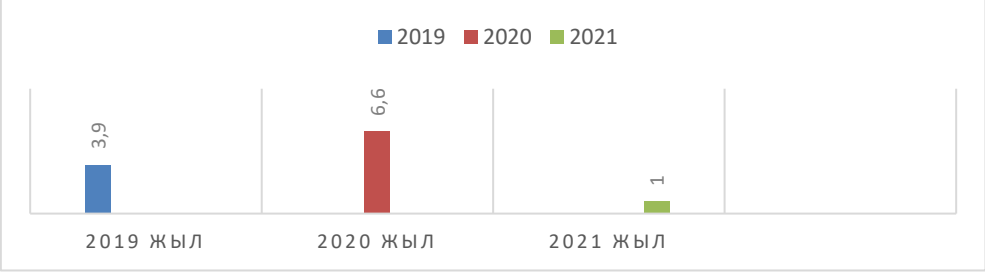
қызметінің ашықтығы мен ашықтығын арттыру және интернетті кеңінен қолдану оларды киберкеңістікте осал етеді (Khoury, Michel, and Rabih Abouchakra 2015). Жүйелерді автоматтандыру, яғни қызметтерді цифрландыру бірқатар тәуекелдерді тудырады. Қазіргі уақытта киберкеңістіктегі негізгі тәуекелдердің бірі Цифрлық ақпараттың қауіпсіздігін қамтамасыз ету болып табылады. Елдер мемлекеттік және жеке секторларда жаһандық енгізілуіне байланысты ақпараттық технологияларға көбірек тәуелді бола бастағанын атап өтті (Clark, David, Th omas Berson, and Herbert S. Lin. 2014). Халықтың ақпараттық технологияларға тәуелділігі киберқауіпсіздікті маңызды мәселеге айналдырады. Киберкеңістікте жұмыс істей отырып, Цифрлық провайдерлер мен қызмет алушылар кибершабуылдарға осал, өйткені олардың жеке деректері, ақшасы және зияткерлік меншігі киберқылмыскерлердің заңсыз иемдену қаупіне ұшырайды.

Бірыңғай платформаның басты артықшылығы — жеткізушілер бүкіл ел бойынша өндірілетін немесе жеткізілетін тауарларға мемлекеттік органдар мен ұйымдардың қажеттіліктерін талдай алатын құрылысқа қосқан үлесі (Samarin, Alexey M. and Victor A. Melnichuk. 2016). Мемлекеттік сатып алу жүйесіне көшу электрондық құжаттарды ұсыну тетігін оңтайландыруға мүмкіндік берді. Бұл ретте электрондық жүйелер қамтамасыз ету сомаларымен бірге олардан алынған пайданы қайтаруға міндетті. Мемлекетке ақпараттық қоғам жолында жәрдемдесу мақсатында оны іске асырудың негізгі бағыттарының бірі электрондық үкіметті одан әрі дамыту және цифрлық Үкіметке көшу есебінен мемлекеттік аппарат жұмысының тиімділігін, халық пен бизнестің мемлекеттік билік органдарымен өзара іс-қимылын, мемлекеттік көрсетілетін қызметтердің сапасы мен тиімділігін арттыру.

Зерттеудің теориялық және әдіснамалық негізі мақаланың тақырыбына қатысты заңнамалық актілер, нормативтік құжаттар болды. Ғылыми мақаланы жазу үшін ақпарат көзі ретінде оқу әдебиеті, осы саладағы ірі ғалымдардың іргелі теориялық еңбектері, көрнекті отандық және шетелдік авторлардың практикалық зерттеулерінің нәтижелері, мемлекеттік басқару тақырыбына арналған арнайы әдебиеттер мен мерзімді басылымдардағы мақалалар мен шолулар пайдаланылды. Мақалада жалпы мәселелер қарастырылады. Негізгі ұғымдар айқындалды, мемлекеттік сатып алуды құқықтық реттеудің өзектілігі мен практикалық маңыздылығы айқындалды, сондай-ақ жекелеген деректер негізінде қазіргі жай-күйге талдау, сондай-ақ мемлекеттік сатып алуды дамытудың перспективалары мен үрдістеріне талдау жүргізілді.

Сыбайлас жемқорлық және онымен күресу мәселесі қазіргі уақытта бүкіл әлемде өзекті, бірақ сыбайлас жемқорлыққа қарсы шаралар контекске тәуелді болуы керек (Toeba, 2018; Забокрицкий, 2019). Сыбайлас жемқорлықтың жоғары деңгейінен басқа, Қазақстанда мемлекеттік сатып алудың тиімділігін төмендететін негізгі жағымсыз мән-жайлар ведомстволық бытыраңқылық және конкурстық сауда-саттықты өткізудің бірыңғай әдістемесінің болмауы, елдегі қолданыстағы Мемлекеттік сатып алудың нормативтік-құқықтық базасының сәйкес келмеуі, білікті адам ресурстарының тапшылығы, сондай-ақ тендерлік процесті дұрыс ұйымдастыруға және келісімшарттар беруге жауапты мекеменің болмауы болып табылады. Жыл сайын елімізде жүздеген миллиард теңгеге бюджетке зиян келтіретін мемлекеттік сатып алу саласындағы мыңдаған заң бұзушылықтар анықталуда. Ең көп таралған сыбайлас жемқорлық құқық бұзушылықтардың қатарына лауазымды тұлғалармен үлестес тұлғалардың сауда–саттыққа қатысуы және сатып алынатын тауарлардың немесе қызметтердің құнын арттыру жатады (ҚР «Сыбайлас жемқорлыққа қарсы» Заңы).

Қазақстан Республикасының Сыбайлас жемқорлыққа қарсы іс-қимыл туралы ұлттық баяндамасы негізінде мемлекеттік сатып алу саласындағы үнемделген ақша қаражаттарының негізгі көрсеткіштерін көруге болады (1-сурет).

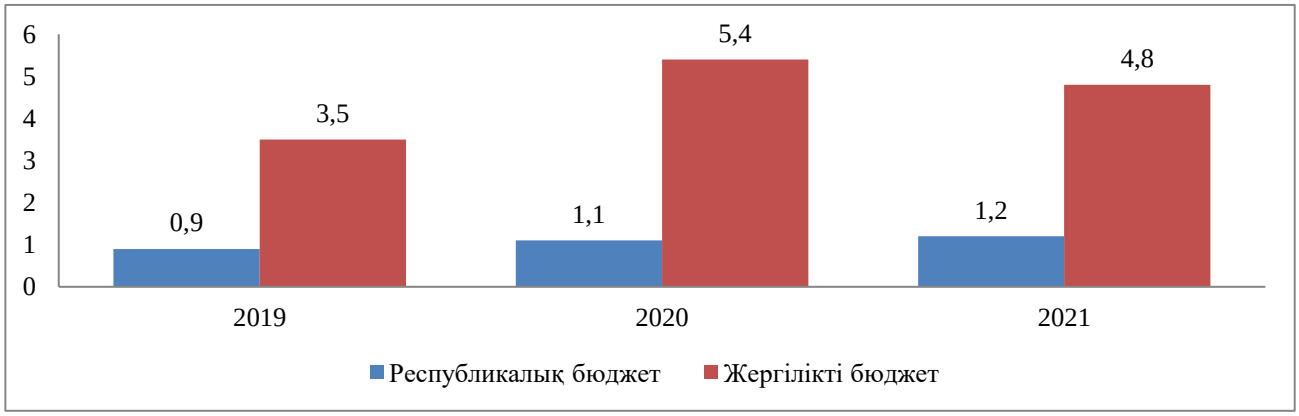


1-сурет. Мемлекеттік сатып алу саласындағы үнемделген ақша қаражаттарының негізгі көрсеткіштері (трлн. теңге)

Ескерту – автормен құрастырылған

Бұл диаграмма бойынша соңғы 3 жылдағы мемлекеттік сатып алу саласындағы сыбайлас жемқорлық саласындағы үнемделген ақша қаражаттарының көрінісін байқауға болады. Мемлекеттік сатып алу саласына бөлінген қаражаттың дұрыс пайдаланылмай жатқанын және мемлекеттік сатып алу саласындағы сыбайлас жемқорлық фактілерін көруге болады.

Сонымен қатар жыл сайын мемлекет тарапынан мемлекеттік сатып алу саласына үлкен қаражат бөлінеді деп айтуға болады. Төмендегі суреттен соңғы 3 жылда бөлінген қаражат көлемін байқауға болады (2-сурет).



2-сурет. Қазақстан Республикасында Мемлекеттік сатып алу жоспарының серпіні, трлн.теңге

Ескерту – автормен құрастырылған

Жалпы қаражат көлемі жыл сайын орташа есеппен 2019 жылмен салыстырмалы түрде алғанда 29%-ға өскен. Мемлекеттік сатып алу саласындағы ақша айналымының көп болуы да, мемлекеттік сатып алу саласында мәселелердің туындауына алып келеді.

Сатып алудың жекелей түрлерінің 2021 жылғы статистикалық мәліметтері қарастырылды. Негізгі 3 сатып алу тәсілі бойынша төмендегі кестеде мәліметтер берілген (1-кесте).

1-кесте. Негізгі 3 сатып алу тәсілі бойынша мемлекеттік сатып алу көрсеткіштері

Сатып алу тәсілі	жарияланды	өткізілді	өткізілмеді	жойылды
Ашық конкурс тәсілімен	140 183 тендер	57 812	75 036	6 025
Баға ұсыныстарын сұрату тәсілімен	1 632 522	713 415	883 162	8 464
Бір көзден алу тәсілімен	471 821	316 062	148 892	305
Ескерту – автормен құрастырылған				

Кесте бойынша қарастыратын болсақ, өткізілмеген сатып алу санының көп екенін байқауға болады. Бұл жерде негізгі мәселе ретінде әлеуетті өнім берушілердің аз болуы, немесе жосықсыз өнім берушілердің болуымен сипатталады. Көптеген әлеуетті өнім берушілер, мемлекеттік сатып алуда жеңімпаз атанғаннан кейін өзіне жүктелген міндетті толық орындамайды немесе тауар, көрсетілген қызмет сапасы талаптарға сай болмайды.

Қазақстан мемлекеттік сатып алудың түрлі аспектілері бойынша жиынтық статистиканың ашықтығының болмауымен сипатталады. Ашық қолжетімділікте заңда белгіленген 50 негіздің әрқайсысы бойынша бір көзден сатып алуға байланысты шығыстар туралы деректер жоқ. Электрондық жүйе қатысушылар берген шағымдар және оларды қарау нәтижелері бойынша егжей-тегжейлі статистиканы ұсынбайды. Тиімділік көрсеткіштерінің басым көпшілігін алу немесе есептеу мүмкін емес (мысалы, сәтсіз сатып алуға әкелген бәсекелестік процедуралардың үлесі). Теориялық тұрғыдан Қазақстан үкіметі жақында іске асырған инновациялар ресми талаптың сақталуын жақсартады деп күтілуде. Дегенмен, жалғыз жеткізушімен тікелей келісімшарттардың көптігі, сәтсіз сатып алулардың жоғары үлесімен қатар, жүйенің тиімділігін арттыруға әлі де кедергі болып табылады (Экономикалық ынтымақтастық және даму ұйымы, 2019).

2019 жылдың басынан бастап мемлекеттік сатып алу өтпеді деп танылған жағдайда; тапсырыс берушілер бәсекелестік жағдайларға қол жеткізгенге дейін рәсімді қайталауға міндетті. Ресми мәліметтерге сәйкес, бұл жаңалық бір көзден бәсекелестік сатып алу үлесін 2018 жылғы 53 пайыздан 2019 жылдың тоғыз айында 11 пайызға дейін төмендетуге мүмкіндік берді. Сонымен қатар, Қаржы министрлігі жақында клиенттер тізілімін жүргізе бастады және бір көзден негізсіз сатып алу мүмкіндігін болдырмауға арналған жалғыз жеткізушімен шарт жасасуға құқығы бар жеткізушілер.

Бұдан басқа, шетелдіктердің Қазақстанның Мемлекеттік сатып алуларына қол жеткізу проблемасы нарықтағы бәсекеге қабілеттіліктің төмендеуіне әсер етеді, сол арқылы елдегі сыбайлас жемқорлыққа ықпал етеді. Мәселе мынада, Абоненттік төлем қазақстандық банктік шот арқылы тек теңгемен төленуі тиіс, бұл әлеуетті шетелдік өнім берушілер үшін қосымша кедергілер тудырады (Экономикалық ынтымақтастық және даму ұйымы, 2019).

Мемлекеттік сатып алу үдерісіндегі негізгі заң бұзушылықтар ретінде мыналарды атап кетуге болады:

• заңнамада көзделген мемлекеттік сатып алу рәсімдерінен жалтару;

• біліктілік талаптары мен конкурстық құжаттама талаптарына сәйкес келмейтін, көбінесе конкурс жеңімпаздарын айқындауға іріктеп көзқарас кезінде өнім берушілер тендерлерінің жеңімпаздарын айқындау;

• конкурс жеңімпаздарын анықтау есебінен әлеуетті өнім берушілер санын жасанды түрде азайту;

• бәсекелестік рәсімдерге қатысу және қосылған әлеуетті өнім берушілер арасынан жеңімпаздарды анықтау;

• баға ұсыныстары неғұрлым төмен өнім берушілердің негізсіз бас тартуы және Мемлекеттік сатып алу туралы заңнама талаптарының өзге де заң бұзушылықтары.

Егер конкурсқа қатысушылардың көп саны конкурс шарттарында немесе нормативтік құқықтық актілерде көзделмесе, конкурсқа қатысушылардың саны екіден кем болмауы тиіс. Жарыс әрқашан олардың жеңімпаздарын анықтауға бағытталған. Жеңімпазбен шарт жасалады немесе оған конкурс түріне байланысты сыйақы төленеді. Кейде сыйақы төлеуді және келісімшарт жасасуды біріктіруге болады.

Мемлекеттік сатып алу әлемнің көптеген елдерінің экономикасында маңызды рөл атқарады. Мемлекеттік сатып алу мемлекеттік органдардың, орталық және жергілікті мекемелердің, мемлекеттік сектор кәсіпорындарының өз функцияларын орындау үшін тауарларға, жұмыстарға және қызметтерге деген қажеттіліктерін қанағаттандыруға бағытталған. Мемлекеттік сатып алу туралы заңда аталған мемлекеттік сатып алуды өткізудің бірнеше әдісі бар:

1) конкурс;

2) аукциондарда;

3) баға ұсыныстарын сұрату;

4) бір көзден алу;

5) тауар биржалары;

6) электрондық дүкен арқылы жүзеге асырылады.

Әр елдің электронды сатып алу жүйесі ерекше, өйткені әр елдің тек осы елге тән өзіндік институционалдық ерекшеліктері бар, сондықтан әр жүйе өзінің ерекшеліктерімен сипатталады. Қазақстандық модельдің артықшылығы мынада:

1) барлық сатып алулар Қазақстандағы мемлекеттік сатып алу туралы барлық ақпаратты біріктіретін бірыңғай веб-порталда жүзеге асырылады;

2) жалпы қабылданған жіктеуіштер пайдаланылады;

3) жүзеге асырылатын рәсімдердің, мәмілелердің ашықтығы, жариялығы.

Бірақ баға ұсыныстарын ұсынудың қарапайым тәртібіне қарамастан, мемлекеттік сатып алу процедураларын жүргізу кезінде жеткізушілер мен тапсырыс берушілер арасында түсініспеушілік жиі кездеседі. Әлеуетті өнім берушілер баға ұсынысының жеңісін қамтамасыз ету, Шарт талаптарын орындау кезінде қиындықтарды болдырмау және Қазақстандағы мемлекеттік сатып алуға жосықсыз қатысушылардың тізіліміне енгізу үшін баға ұсыныстарын беру және сатып алу нәтижелері бойынша шарт жасасу тәртібін білуі және сақтауы қажет. Әлемдік тәжірибе көрсеткендей, кеден одақтары сауда мен өндірісті дамыту үшін қолайлы жағдайлар жасайды, ортақ экономикалық мүдделермен біріктірілген мемлекеттердің экономикалық қана емес, саяси байланыстарын нығайтуға ықпал етеді.

Осылайша, қазақстандық мемлекеттік сатып алуды жетілдіру шетелден келген сауда-саттыққа қатысушылар үшін сатып алу рәсімдерін оңайлатуға, жүйені реттейтін заңнамалық және нормативтік-

құқықтық базаны дәйекті түзетуге және Мемлекеттік сатып алу ережесін бұзғаны үшін құқықтық салдарларды нақтылай отырып, сыбайлас жемқорлыққа қарсы құқықтық базаны кеңейтуге бағытталуы тиіс.

Мемлекеттік сатып алу жұмысын жетілдіру бойынша басқа да кең таралған әлемдік тәжірибелердің қатарында уәкілетті органдар қызметкерлерінің жиі ротациясы бар. Германияда федералды сатып алу агенттігі қызметкерлерді әр 5-8 жыл сайын ауыстырады. Қазақстанда осы тәжірибені қолдану проблемасы осындай «кадрлардың ауысуын» қамтамасыз ете алатын білікті мамандардың жеткілікті санының болмауы болып табылады.

Қазақстан Республикасының 2015-2025 жылдарға арналған сыбайлас жемқорлыққа қарсы стратегиясында мемлекеттік сатып алу жүйесі әрбір төртінші сыбайлас жемқорлық қылмыс жасалатын қызмет салаларының бірі болып табылатыны көрсетілген. Қазақстан Республикасының Президенті Қасым-Жомарт Тоқаев бизнеске әкімшілік қысымды төмендетумен қатар мемлекеттік сатып алу жүйесін жетілдіруді сыбайлас жемқорлықты жою жөніндегі міндеттердің бірі деп атады. Мемлекеттік сатып алу жүйесін жетілдіру бағыттарының бірі мемлекеттік сатып алуды автоматтандыру және орталықтандыру болып табылады. Мемлекеттік сатып алудың бірыңғай ұйымдастырушысын, осы саладағы мемлекеттік сатып алудың бірыңғай операторын енгізу мемлекеттік сатып алу вебпорталының барлық қатысушылары үшін ашық және түсінікті жүйе құруға бағытталған. Жеткізушілердің Мемлекеттік сатып алу процесіне қатысты әртүрлі шағымдарының саны азайды, ал даулардың негізгі санаты жеткізушілерді мемлекеттік сатып алуға жосықсыз қатысушылар деп тану болды. Мұның бәрі мемлекеттік сатып алу саласында оң өзгерістер болып жатқанын көрсетеді. Мемлекеттік сатып алу туралы Заң қабылданған сәттен бастап оған 20 рет, оның ішінде ағымдағы жылдың басынан бастап төрт рет өзгерістер мен толықтырулар енгізілді. Бұл факт Мемлекеттік сатып алуға қатысушыларды қолданыстағы заңнаманы үнемі қадағалап отыруға және заңнамалық новеллалардан хабардар болуға міндеттейді.

Қазақстан Республикасының Мемлекеттік сатып алудың электрондық ақпараттық жүйесінің функцияларын зерттеу және олардың тиімділігін арттыру және елдегі цифрлық трансформация жағдайында оның киберқауіпсіздігін қамтамасыз ету жөніндегі шараларды ұсыну болды. Мемлекеттік сатып алудың ашықтығы артты, конкурстық тәсілмен өткізілетін сатып алуға қатысушылар саны артты. Бұл өзгерістер мемлекеттік қаржының айтарлықтай үнемделуін қамтамасыз етуі тиіс. Технологиялық даму жағдайында елдің киберқауіпсіздігі және оны электрондық сатып алу мәселесі өзекті болып отыр. Болып жатқан өзгерістер ақпараттық жүйелердің кибершабуылдарға осалдығын арттырады. Сандық деректерді жоғалту және ақпараттық жүйелерді бұзу қаупі артады, бұл киберқауіпсіздік мәселесінің өзектілігін анықтайды. Ұлттық деңгейде киберқауіпсіздікті дамыту елдегі электрондық мемлекеттік сатып алу жүйелерінің қорғалуын арттырады.

Негіздемелік келісімдерді қолдану Еуразиялық экономикалық одақ белгілеген Мемлекеттік сатып алу ережелеріне байланысты. 2020 жылғы наурызда Қазақстан Республикасының Президенті мемлекеттік органдарға, ұлттық компанияларға және квазимемлекеттік сектордың барлық субъектілеріне мүше мемлекеттерде өндірілмеген жеңіл автомобильдер мен кеңсе жиһаздарын сатып алуға үш жылдық мораторий жариялады. Алайда, жарияланған сатып алуларды бақылау кезінде тапсырыс берушілер бұл тыйымды ескермегені белгілі болды. Сондай-ақ, қадағалау органдарының осы мәселе бойынша қандай да бір шаралар қабылдауы туралы ақпарат аз.

Қазақстан Республикасының Мемлекеттік сатып алу жүйесі жыл сайын өзгеріп отыратынын атап өткен жөн. Осы саладағы қатынастарды реттеуді оңтайландыру мақсатында Қаржы министрлігі нақты құжатты қабылдауы керек. Тапсырыс беруші мен өнім беруші арасындағы сыбайлас жемқорлық әрекеттерін барынша азайту, сатып алу заңға сәйкес жүргізілуі үшін басқару органдарының негізгі міндеттерінің қатарына қосу қажет. Мемлекеттік сатып алулар осы проблемаларға кешенді және жүйелі әсер еткенде ғана ашық және тиімді болатыны анық.

Қатысушылардың санын, көлемін, құнын және Мемлекеттік сатып алу қызметінің ашықтығын бағалау электрондық сатып алу жүйесінің бар кемшіліктеріне қарамастан қарқынды дамып келе жатқанын, оның қатысушыларының саны жыл сайын артып келе жатқанын, жасалған шарттар саны мен мемлекеттік сатып алу көлемі артып келе жатқанын байқауға болады.

Түйіндей келе айтарымыз, мемлекеттік сатып алу саласындағы кемшіліктер ел экономикасына ғана емес, сіз бен біздің өмірімізге де тікелей әсер етеді. Ендеше, саладағы талап пен тәртіпті барынша күшейткен абзал.

Әдебиеттер тізімі

Bromberg Daniel. E-Procurement Implementation in the United States: Understanding Progress in Local Government / Daniel Bromberg, Manoharan Aroon // Public Administration Quarterly. — 2015. — No 39(3).

Clark David. At the Nexus of Cybersecurity and Public Policy: Some Basic Concepts and Issues / David Clark, Berson Thomas, S. Lin Herbert. Washington DC: The National Academies Press. — 2014.

Costamagna F. Protecting foreign investments in public services: Regulatory stability at any cost? / F. Costamagna // Global Jurist. — 2017. — No 17(3). — P. 1-14.

Dairabayeva N. Public procurement's legal regulation through the medium of competitive procurement in the Republic of Kazakhstan / N. Dairabayeva, Z. Ibragimov, S. Kapsalyamova // European Research Studies Journal. — 2018. — Vol. 21(1). — Special Issue 2. — P. 442-452.

Khoury M. Government for a new age: The transformation agenda (1 Feb. 2015). / Michel Khoury, & Abouchakra Rabih. — Publisher: Infinite Ideas Limited (1600).

Kirn M. Transparency in public procurement — The case of Slovenia / M. Kirn, L. Umek, I. Rakar // Danube: Law, Economics and Social Issues Review. — 2019. — No 10(3). — P. 221-239.

Kochanova Anna. Does E-Government Improve Government Capacity? Evidence from Tax Administration and Public Procurement / Anna Kochanova, Hasnain Zahid & Larson Bradley. — 2016. — Retrieved from https: //documents1.worldbank.org/curated/en/334481468193734893/pdf/WPS7657.pdf.

Langr Ivan. Public Procurement in the Systemic Corruption Environment: Evidence from the Czech Republic / Ivan Langr // NISPAcee Journal of Public Administration and Policy. — 2018. — No 11(2). — P. 53—79.

Mrak M. K. Procurement at local government level-issues and controversies / M.K. Mrak, N. Vretenar, J. Antoni // International Public Administration Review. — 2016. — No 14(4). — P. 49-69.

Organisation for Economic Cooperation and Development. (2019). Public procurement in Kazakhstan: Reforming for efficiency, OECD public governance reviews. Paris, France: OECD Publishinghttps://www.oecd.org/countries/kazakhstan/public-procurement-in-kazakhstan-c11183ae-en.htm

Otter N. Determinants of public sector innovation: The example of capacity development in public procurement / N. Otter, M. Weber // *International Public Administration Review*. — 2015. — No 13(1). — P. 9-20.

Samarin Alexey M. Public Procurement: Implementation of the Federal Contract System / M. Samarin, Alexey, A. Victor Melnichuk // Bulletin of the Siberian Institute of Business and Information Technology. — 2016. — No 4(20). — P. 40–46.

Toeba T. Corruption in public procurement in Lesotho / T. Toeba // Lawand Development Review. — 2018. No 11(2). — P. 397-431.

Zabokrytskyy I. Transnational civil society influence on anti-corruption courts: Ukraine's experience / I. Zabokrytskyy // Global Jurist. — 2019. — No 20(1). — P. 1-12.

«Мемлекеттік сатып алу туралы» Қазақстан Республикасының Заңы. 2015 жылғы 4 желтоқсандағы №434-V ҚРЗ [Электрондық ресурс]. — Қол жеткізу режимі: https://adilet.zan.kz/kaz/docs/Z1500000410.

М.К. Асанова, Г.А. Райханова, Р.А. Рахимжанова, С.Г.Серикбаева, А.Т. Жансейтов

Актуальные вопросы в сфере государственных закупок

Аннотация:

Цель: Показать актуальные вопросы в сфере государственных закупок в Республике Казахстан. Отображение последних опубликованных статистических показателей.

Методы: Теоретико-методологической основой исследования стали законодательные акты, нормативные документы, относящиеся к теме статьи. Источником информации для написания научной статьи послужила учебная литература, фундаментальные теоретические труды крупных ученых в этой области, результаты практических исследований выдающихся отечественных и зарубежных авторов, статьи и обзоры в специальной литературе и периодических изданиях по теме государственного управления.

Результат: В статье рассмотрены общие проблемы. Определены основные понятия, определены актуальность и практическая значимость правового регулирования государственных закупок. Показаны основные нарушения в процессе государственных закупок. Проведен обзор работ авторов и мировой практики в сфере государственных закупок.

Вывод: На основе отдельных данных проведен анализ современного состояния, а также анализ перспектив и тенденций развития государственных закупок. С момента принятия Закона РК «О государственных закупках» в него вносились изменения и дополнения 20 раз, в том числе четыре раза с начала текущего года. Поскольку система государственных закупок Республики Казахстан меняется ежегодно, даны рекомендации по оптимизации регулирования отношений в данной сфере.

Ключевые слова: государственные закупки, конкуренция, цифровизация, коррупция, законодательство, ценовые предложения, электронные закупки, веб-портал.

M.K. Assanova, G.A. Raikhanova, R.A. Rakhimzhanova, S.G. Serikbayeva, A.T. Zhanseitov

Current issues in the field of public procurement

Abstract:

Object: to show current issues in the field of public procurement in the Republic of Kazakhstan. Display of the latest published statistics.

Methods: the theoretical and methodological basis of the study was legislative acts, normative documents related to the topic of the article. The source of information for writing a scientific article was educational literature, fundamental theoretical works of prominent scientists in this field, the results of practical research by prominent domestic and foreign authors, articles and reviews in specialized literature and periodicals on the topic of public administration.

Findings: the article deals with general problems. The basic concepts are defined, the relevance and practical significance of the legal regulation of public procurement are determined. The main violations in the public procurement process were showed. A review of the works of the authors and world practice in the field of public procurement was carried out.

Conclusions: on the basis of individual data, an analysis of the current state was carried out, as well as an analysis of the prospects and trends in the development of public procurement. Since the adoption of the Law on Public Procurement, it has been amended and supplemented 20 times, including four times since the beginning of this year. Since the public procurement system of the Republic of Kazakhstan changes annually, recommendations are given for optimizing the regulation of relations in this area.

Ключевые слова: state procurement, competition, digitization, corruption, legislation, price proposals, electronic procurement, web portal.

References

Bromberg, Daniel, & Aroon Manoharan. (2015). E-Procurement Implementation in the United States: Understanding Progress in Local Government. *Public Administration Quarterly, 39(3).*

Clark, David, Thomas Berson & Herbert S. Lin. (2014). At the Nexus of Cybersecurity and Public Policy: Some Basic Concepts and Issues. Washington DC: The National Academies Press.

Costamagna, F. (2017). Protecting foreign investments in public services: *Regulatory stability at any cost? Global Jurist, 17(3),* 1-14.

Dairabayeva, N., Ibragimov, Z., & Kapsalyamova, S. (2018). Public procurement's legal regulation through the medium of competitive procurement in the Republic of Kazakhstan. *European Research Studies Journal, 21(1),* 442-452.

Khoury, Michel, and Rabih Abouchakra (1 Feb. 2015). Government for a new age: The transformation agenda. Publisher: Infinite Ideas Limited (1600).

Kirn, M., Umek, L., & Rakar, I. (2019). Transparency in public procurement-The case of Slovenia. *Danube: Law, Economics and Social Issues Review, 10(3),* 221-239.

Kochanova Anna, Zahid Hasnain and Bradley Larson. (2016). Does E-Government Improve Government Capacity? Evidence from Tax Administration and Public Procurement.

Langr, Ivan. (2018). Public Procurement in the Systemic Corruption Environment: Evidence from the Czech Republic. *NISPAcee Journal of Public Administration and Policy 11(2),* 53–79.

Mrak, M.K., Vretenar, N., & Antoni, J. (2016). Procurement at local government level-issues and controversies. *International Public Administration Review, 14(4),* 49-69.

Organisation for Economic Cooperation and Development. (2019). Public procurement in Kazakhstan: Reforming for efficiency, OECD public governance reviews. Paris, France: OECD Publishinghttps://www.oecd.org/countries/kazakhstan/public-procurement-in-kazakhstan-c11183ae-en.htm

Otter, N., & Weber, M. (2015). Determinants of public sector innovation: The example of capacity development in public procurement. *International Public Administration Review, 13(1),* 9-20.

Samarin, Alexey M. & Victor A. Melnichuk (2016). Public Procurement: Implementation of the Federal Contract System. *Bulletin of the Siberian Institute of Business and Information Technology 4(20),* 40 – 46.

Toeba, T. (2018). Corruption in public procurement in Lesotho. *Lawand Development Review, 11(2),* 397-431.

Zabokrytskyy, I. (2019). Transnational civil society influence on anti-corruption courts: Ukraine's experience. *Global Jurist, 20(1),* 1-12.

«Memlekettik satyp aly turaly» Qazaqstan Respublikasynyn Zany. 2015 zhylgy 4 zheltoqsandagy No434-V QRZ [Law of the Republic of Kazakhstan No. 434-V ZRK. 2015. On Public Procurement. Retrived from: https: https://adilet.zan.kz/kaz/docs/Z1500000410 [in Kazakh].

DOI 10.31489/2022Ec4/153-162

JEL M10, M21

УДК 332.822

Д.Р. Баткеева[1], Л.Н. Гаврила[2], А.Т. Омарова[3*], М.Ж. Каменова[4], Б.Т. Аймурзина[5]

[1] Карагандинский университет Казпотребсоюза, Караганда, Казахстан;
[2] Спиру Харет Университет, Крайова, Румыния;
[3]Карагандинский университет имени академика Е.А. Букетова, Караганда, Казахстан;
[4]Туран-Астана, Астана, Казахстан;
[5]Международный университет «Астана», Астана, Казахстан
[1]diko_18@mail.ru,[2]laura.gavrila73@gmail.com,[3]ainuraphd@mail.ru,
[4]mazken_kamenova@mail.ru,[5]aimurzina@mail.ru

*[1]https://orcid.org/0000-0003-2253-4161, [2]https://orcid.org/0000-0003-3309-275X, [3]https://orcid.org/0000-0001-7788-7357, [4]https://orcid.org/*0000-0003-2018-521X,*[5]https://orcid.org/0000-0003-1466-5487*

[2]Scopus Author ID: 26421422000, [3]Scopus Author ID: 55982396200,
[4]Scopus Author ID: 56646267600, [5]Scopus Author ID: 56646411600
[2]Researcher ID:AFL-6244-2022, [3] Researcher ID: U-5563-2018,
[4] Researcher ID: FBW-4217-2022, [5]Researcher ID: EJW-3790-2022

Государственная стратегия и опыт управления жилищно-коммунальным хозяйством

Аннотация

Цель: Заключается в анализе жилищного строительства в Республике Казахстан и определении влияния цифровых технологий на экономические показатели строительной отрасли Республики Казахстан.

Методы: Авторами были использованы методы научного познания: анализ, синтез, дедукция, индукция, абстрагирование и конкретизация, обобщение и группировка статистической информации, абстрактно-логический, функциональный и сравнительный анализы, междисциплинарный подход.

Результаты: В процессе исследования авторами статьи была выдвинута гипотеза о дальнейшем росте показателей объема выполненных строительных работ и введенных в эксплуатацию жилых площадей в условиях цифровизации экономики с помощью методов математического моделирования и прогнозирования.

Выводы: В процессе анализа и полученных результатов с помощью методов математического моделирования и прогнозирования были сделаны выводы, что необходимо уделять большое внимание такому факту, как использование зеленой экономики и зеленых инноваций с применением цифровых технологий в жилищном строительстве имеет первостепенное значение, как для населения, в целях улучшения состояния населения, так и, в целом, окружающей среды. Полученные результаты исследовательской работы имеют как теоретическое, так и практическое значение и подтверждают выдвинутую авторами гипотезу о дальнейшем росте показателей объема выполненных строительных работ и введеных в эксплуатацию жилых площадей, делая значительный акцент на появлении Индустрии 4.0, где силы глобализации и цифровизации побуждают строительную отрасль продвигать процесс цифровизации для повышения эффективности отрасли.

Ключевые слова: строительство, жилищное строительство, «зеленая» экономика, «зеленые» инновации, окружающая среда, инновации, технологии.

Введение

Анализ развития жилищного строительства в Казахстане и особенностей современного программного управления формированием рынка доступного жилья показывает, что в республике этому уделяется особое внимание. Перед новым поколением строительной индустрии на данном этапе стоит задача повышения комфортности проживания населения с учетом региональных особенностей и существующих тенденций в дизайне. В то же время резкая континентальность климата в городской структуре требует комплексного подхода к формированию социально чувствительной застроенной среды, которая способствует формированию комфортной городской среды и улучшению экологической ситуации. Формирование благоприятной застроенной среды в городской структуре обеспечивает социальную ориентацию мегаполиса и способствует тенденции повышения качества жизни населения.

В Казахстане активно развивается строительная отрасль, что можно объяснить такой тенденцией, что создаются новые регионы (Туркестанская область) и реализуются планы правительства по строительству национального жилья, взаимодействуя со всеми секторами экономики. Это связано с тем, что

* Автор-корреспондент. E-mail: *ainuraphd@mail.ru*

создание активов в этих секторах всегда предполагает создание зданий, сооружений и т.д. Вопрос доступности комфортного жилья для казахстанцев всегда был в центре внимания государства. Это связано с тем, что среди основных потребностей людей, жилье является наиболее важным фактором, характеризующим качество жизни. Хотя жилищное строительство и модернизация жилищного фонда способствуют повышению темпов экономического роста, а поддержание и улучшение жилищного хозяйства является стабилизирующим фактором делового цикла, затраты на эти цели вряд ли эластичны и вряд ли заметно изменятся в ответ на изменение экономической ситуации в стране. В связи с этим данная тема исследования является актуальной и заслуживает особенного внимания.

Обзор литературы

Строительство — одна из самых быстрорастущих отраслей, охватывающая соответствующие сектора экономики, имеющая сильную социальную направленность и являющаяся двигателем экономического роста.

По мнению M. Roders и A. Straub, жилищные компании должны постоянно адаптировать свой строительный фонд, чтобы идти в ногу с динамичными изменениями (Roders, Straub, 2014).

В работе A. Luciani A. и D. DelCurto предлагаются некоторые направления исследований, в которых устойчивость может способствовать междисциплинарным подходам к построению природоохранной деятельности, и излагаются некоторые противоречивые результаты в отношении сохранения природы в условиях возникающих изменений климата и концепции устойчивости компаний к внешним воздействиям и их роль в рамках устойчивого сохранения зданий (Luciani, DelCurto, 2018).

Этого же мнения придерживаются и другие авторы R. SanJosé, J.L. Pérez, L. Pérez, R.M. GonzalezBarras, которые считают, что необходимо помочь в разработке планов и осуществлении стратегических мер по смягчению последствий глобального изменения климата и его влияния на все сферы деятельности (SanJosé et al. 2018).

Строительство вносит значительный вклад в экономический потенциал страны оно формирует материальные активы и является неотъемлемой частью богатства нации (Khaertdinova et al., 2021).

Строительство является одним из важнейших секторов экономики, который создает рабочие места при вводе в эксплуатацию новых, перепрофилировании существующих зданий и проектах реконструкции для всей национальной экономики. Недвижимость, созданная в строительстве, является неотъемлемой частью национального богатства страны как нефинансовые производственные активы. Основные фонды в структуре нефинансовых производственных активов составляют значительную долю. Поэтому тот факт, что недвижимость создала строительную отрасль в виде основных фондов, является залогом успешного развития отраслей, производящих товары и услуги (Khaertdinova et al., 2021).

Основные фонды, по мнению L. Ustinova и R. Sirazetdinov, способствуют увеличению национального богатства страны в форме накопления основного капитала (Ustinova, Sirazetdinov, 2020). В связи с этим развитие строительной деятельности имеет большое значение для развития экономики, занимая основополагающую роль в экономике любой страны, в том числе и Казахстана (Barber, El-Adaway, 2015).

В исследованиях O.V Antipina и M.V. Velm (2021) анализируются факторы, ограничивающие деятельность строительных компаний в современных экономических условиях. Описана роль управления проектами в строительной отрасли, а также проанализированы основные принципы управления строительными проектами (Antipina, Velm, 2020).

Основная часть

Строительный сектор — один из немногих секторов экономики со стабильным ростом. Этому факту находят подтверждение данные Управления национальной статистики, дающие представление, что, например, в 2015 г. строители сдали 8,94 млн квадратных метров жилья, тогда как к 2021 г. эта цифра почти удвоилась и составила 16,9 млн квадратных метров. Такому росту, безусловно, способствовало расширение ипотечного кредитования: по состоянию на 25 августа только по программе «7–20–25» было выдано почти 519 000 кредитов на сумму 658,1 млрд тг. Так много денег притекло в сектор первичного жилья, что заставило игроков в этом секторе строить больше.

Большая часть кредитов была реализована в трех крупнейших городах Казахстана. На три города — Астану, Алматы и Шымкент — пришлось более 60 % спроса на ипотечные кредиты. Эта тенденция сохраняется до сих пор, несмотря на рост стоимости строительства и ухудшение экономических условий.

В последние годы стоимость строительных услуг значительно выросла: с 2,86 млрд тенге в 2015 г. до более чем 5,5 млрд к концу 2021 г. Это означает, что в Казахстане проектируют и добавляют коммуникации в большее количество домов, а граждане заказывают больше услуг по ремонту. Ожидается, что эта тенденция сохранится в ближайшие годы, и для изучения дальнейшей динамики развития объемов выполненных строительных работ и общей площади введенных в эксплуатацию жилых зданий с использованием методов моделирования и прогнозирования представлены следующие данные (рис. 1) [9].

Рисунок 1. Динамика развития объема выполненных строительных работ и общая площадь введенных в эксплуатацию жилых зданий

Примечание. Составлен авторами на основе источника «Data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2010–2021» (http://www.stat.gov.kz).

Рост в строительном секторе вызывает рост в смежных секторах, таких как производство строительных материалов и ремонтные услуги. Этому обстоятельству находят расчеты прогнозов, которые проводились с использованием регрессионного анализа и Excel. В результате прогнозных расчетов были получены следующие данные (табл. 1) [9].

Таблица 1

Прогнозные значения показателей объема выполненных строительных работ на 2022–2025 годы, млн. тг

	2022	2023	2024	2025
Развитие объема выполненных строительных работ				
Тенденция	5370065	5685638	6001211	6316784
Рост	5827841	6408981	7048071	7750890
Предсказ.	5370065	5685638	6001211	6316784
Линей.	5370065,2	5685638,2	6001211,2	6316784,2
Общая площадь введенных в эксплуатацию жилых зданий				
Тенденция	16583,62	17563,77	18543,91	19524,06
Рост	17975,56	19781,97	21769,9	23957,6
Предсказ.	16583,62	17563,77	18543,91	19524,06
Линейн.	16583,62	17563,77	18543,91	19524,06
Примечание. Составлена авторами на основе произведенных расчетов.				

В динамике результаты произведенных расчетов можно увидеть на рисунке 2.

Рисунок 2. Прогнозные значения показателей объема выполненных строительных работ на 2022–2025 годы

Примечание. Составлен авторами на основе произведенных расчетов.

Выводы итогов произведенных расчетов показаны на рисунке 3.

Регрессионная статистика								
Множественный R		0,975313						
R-квадрат		0,951235						
Нормированный R-квадрат		0,946358						
Стандартная ошибка		270196,5						
Наблюдения		12						
Дисперсионный анализ								
	df	*SS*	*MS*	*F*	*Значимость F*			
Регрессия	1	1,42E+13	1,42E+13	195,0637	6,93E-08			
Остаток	10	7,3E+11	7,3E+10					
Итого	11	1,5E+13						
	Коэффициенты	*Стандартная ошибка*	*t-статистика*	*P-значение*	*Нижние 95 %*	*Верхние 95 %*	*Нижние 95,0 %*	*Верхние 95,0 %*
Y-пересечение	-6,3E+08	45540215	-13,8936	7,28E-08	-7,3E+08	-5,3E+08	-7,3E+08	-5,3E+08
Переменная X 1	315573	22594,96	13,96652	6,93E-08	265228,3	365917,7	265228,3	365917,7

Рисунок 3. Вывод итогов произведенных расчетов

Примечание. Составлен авторами на основе произведенных расчетов.

Результаты анализа показывают, что государство продолжает поддерживать строительный сектор за счет государственной поддержки регулируемого жилья в соответствии с действующим законодательством и национальными тенденциями развития, в частности:

- создаются государственные учреждения;

- приняты законы и национальные планы по развитию жилищного строительства. Например, Министерство промышленности и развития инфраструктуры работает над рядом мер по поддержке промышленности в текущем макроэкономическом и геополитическом контексте, а, в целом, планируется расширение государственной программы жилищного строительства, что означает увеличение объемов строительства и ввода в эксплуатацию. Чтобы удовлетворить потребности граждан в жилье, необходи-

мо поддерживать его качество, поэтому важен диалог со строительными компаниями, с одной стороны, и производителями, и поставщиками строительных материалов и оборудования — с другой.

Поскольку в 2018 г. в Казахстане стартовала государственная программа «Цифровой Казахстан», целью которой является максимальное оцифровывание многих бюрократических вопросов в строительном секторе, упрощение многих процедур и содействие прозрачности взаимодействия между государственными органами и конечными пользователями, в настоящее время реализуются цифровые инновационные проекты. Это включает в себя несколько инновационных цифровых инициатив, разработанных при поддержке правительства, и в этом контексте можно упомянуть следующие цифровые строительные системы, которые в последнее время активно используются в данном секторе (рис. 4) (Строительный рынок Казахстана 2022: технологии и цифровизация. https://www.planradar.com/).

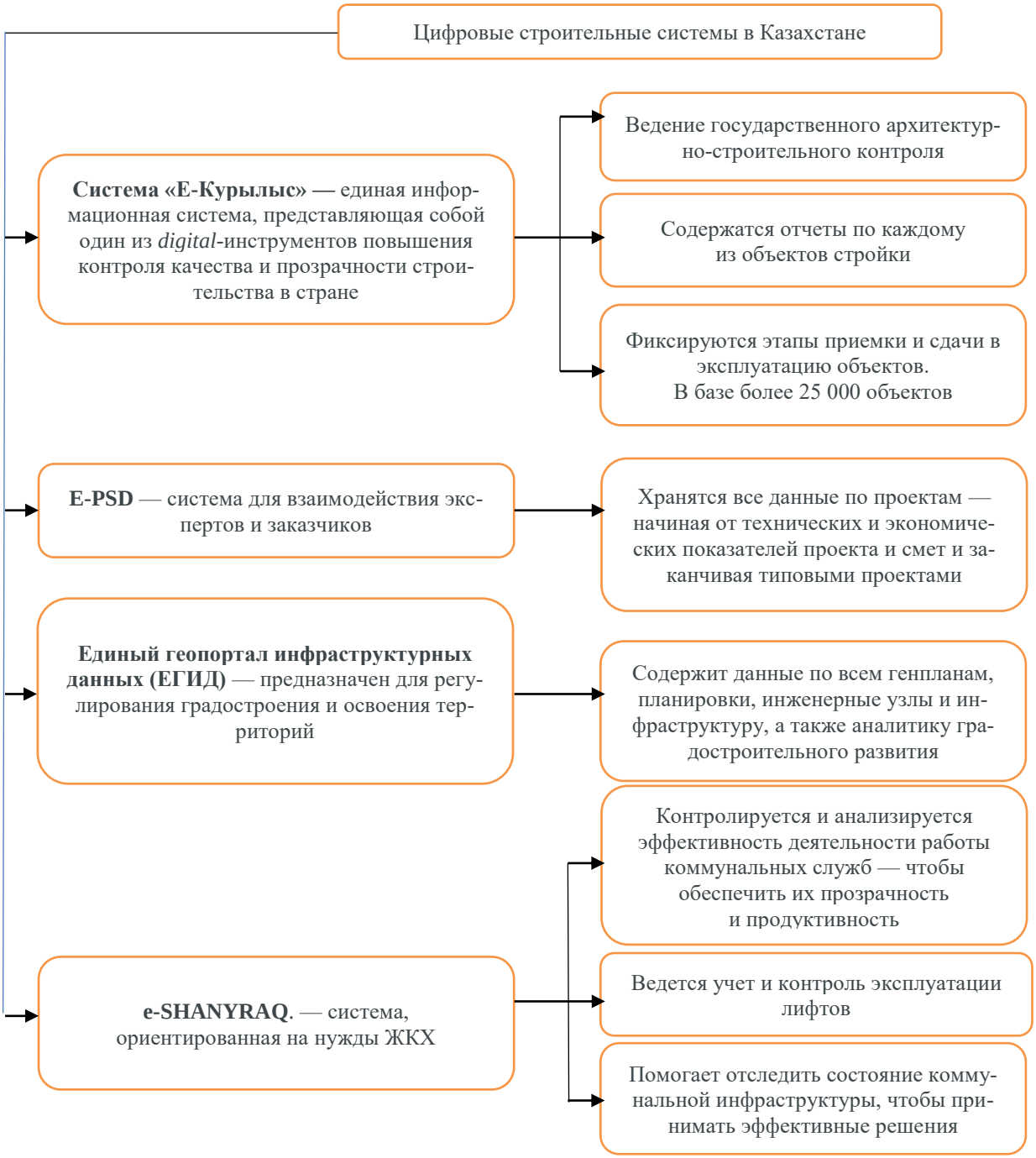


Рисунок 4. Цифровые строительные системы в Казахстане

Примечание. Составлен авторами на основе источника «Construction market of Kazakhstan 2022: technologies and digitalization» (https://www.planradar.com/).

Тем не менее, рост строительной отрасли серьезно сдерживается множеством сложных проблем, с которыми она сталкивается, включая проблемы стоимости и времени, охраны здоровья и безопасности, производительности и нехватки рабочей силы. Кроме того, строительная отрасль является одной из наименее оцифрованных отраслей в мире, что затрудняет решение стоящих перед ней задач (Sofiat et al., 2021).

Необходимость цифровизации строительства и технологий подтверждается следующими цифрами:

- в 2017–2019 гг. на информационно-коммуникационные технологии (ИКТ) было потрачено на 31 % больше, чем в 2014–2016 гг.;

- к 2020 г. на ИКТ было потрачено 13,2 млрд тг.

В целом, Казахстан также демонстрирует положительную тенденцию в плане инвестиций в строительные технологии, где целью является — собрать и предоставить все данные по объектам TIMSS и использовать их для принятия решений при реализации инвестиционных проектов. Поэтому компании строительного сектора должны принять меры по разработке эффективных решений (табл. 2).

Таблица 2. Мероприятия по снижению себестоимости предприятий стройиндустрии

№	Факторы	Действия
1	Факторы, не зависящие от деятельности строительной организации	Изменение структуры работ в плановом периоде
		Введение новых тарифных сеток и ставок
		Смена отпускных цен на материалы и комплектующие
		Изменение тарифов на перевозку грузов
		Изменение сметных норм в документации (монтаж, оборудование)
2	Внутренние факторы	Соблюдение норм расходов ресурсов
		Снижение внутрисменных потерь (рабочее время, простои)
		Выбор оптимальных поставщиков
		Снижение расходов (транспортные, складские)
		Механизация и автоматизация работ
		Применение конструктивных решений
		Рациональная организация работ: - обеспечить своевременную подготовку фронта работ для строительных работ; - увеличить продолжительность работы машин без демонтажа; - рационально размещать материалы и изделия для устранения излишних перевозок до места применения; - использовать наиболее экономичные виды транспорта.
Примечание. Составлена авторами.		

В последние годы стало очевидно, что строительная отрасль должна внедрять цифровые технологии и быстро повышать технологический потенциал, особенно в условиях нехватки рабочей силы, пандемии COVID–19 и необходимости создания устойчивых инфраструктур (Delgado, Oyedele, 2021; Gbadamosi et al., 2019).

Анализируя структуру распределения заказов между участниками, строительный рынок в стране принадлежит частным казахстанским (78,8 %) и иностранным компаниям (21 %). Государственные предприятия есть, но они закрывают слишком маленькие объемы (0,2 %) (рис. 5) (Строительный рынок Казахстана. https://kz.kursiv.media/2022–06–14/stroitelnyj-rynok-kazahstana-prevysil-863-mlrd-tenge/).

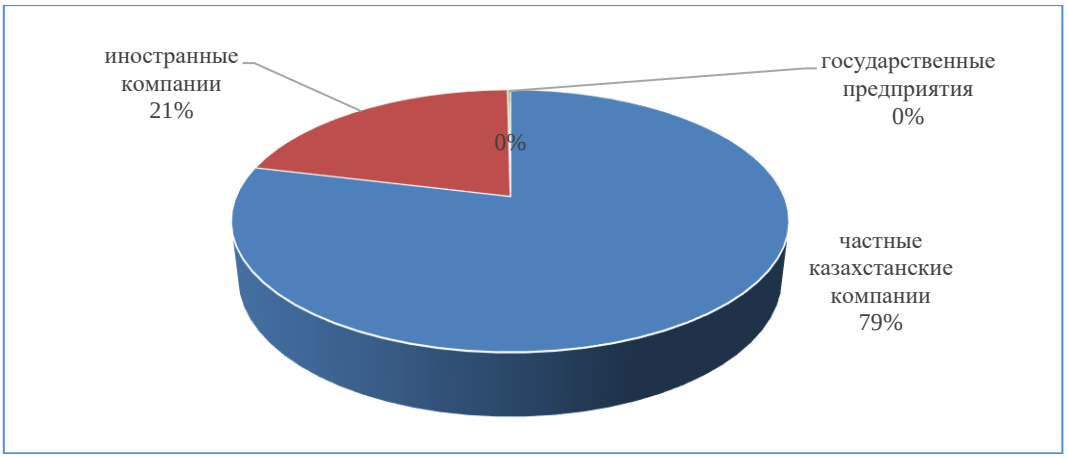


Рисунок 5. Структура распределения заказов между участниками строительного рынка, %

Примечание. Составлен автором на основе источника «ConstructionMarketofKazakhstan» (Mode of access: https://kz.kursiv.media/2022-06-14/stroitelnyj-rynok-kazahstana-prevysil-863-mlrd-tenge/.

Рост влияния иностранных строительных компаний на казахстанском рынке в этом году был поразительным: в январе–апреле 2021 г. их доля составила всего 15,6%. Региональная статистика показывает, что только две из 17 областей показали отрицательную динамику в отчетном периоде.

В январе–марте 2021 года общая площадь введенных в эксплуатацию новостроек составила 3 194 тыс. кв. м; в январе–марте 2021 г. площадь введенных в эксплуатацию новых жилых единиц составила 2 868 тыс. кв. м, что на 8,6 % больше, чем в январе–марте 2020 г. Ввод жилья увеличился во всех регионах, кроме Павлодарской области (-19,4% по сравнению с аналогичным периодом 2020 г.).

С начала этого года ввод жилья увеличился в Шымкенте (+5х г/г), Костанайской области (+20% г/г), Карагандинской области (+12,7% г/г), Западно-Казахстанской области (+11,6% г/г), Атырауской области (+10,7% г/г), Восточно-Казахстанской области (+10,4% г/г), Северо-Казахстанской области (+9,2% г/г)[2]. Большая часть жилья, составляющая 92,5% от общего объема, или 2 659 тыс. м^2, была введена частными застройщиками, на долю которых пришлось 50,4 % от общего объема, или 1 447 тыс. м^2 (рис. 6) [15].

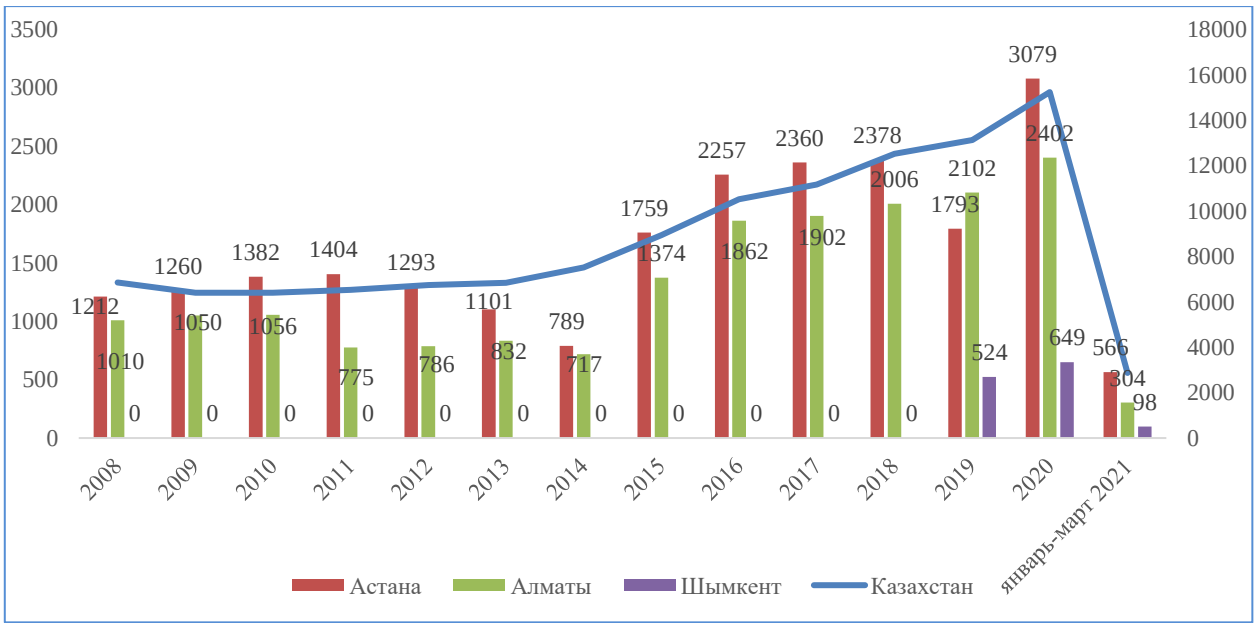


Рисунок 6. Ввод в эксплуатацию общей площади жилых зданий, тыс.кв.м

Примечание . Составлен автором на основе источника «Ежеквартальный макроэкономический анализ показателей, влияющих на деятельность АО «Samruk-Kazyna Construction». — Январь-март 2021 г. — Астана, 2021.

Учитывая рост строительного сектора, 2023 г. станет годом, когда строительная отрасль Казахстана перейдет к широкому использованию BIM-технологий. на основе BIM, что означает, что для поддержания высокого уровня качества и доступности жилищного строительства потребуются новые методы и усовершенствование существующих методов:

- законодательно усилить ответственность застройщиков за качество построенного жилья;
- совершенствовать государственные механизмы функционирования рынка жилья для облегчения доступа к жилью для людей с низким уровнем дохода;
- содействовать производству строительных материалов и развитию строительного сектора, в целом.

В это непростое время внедрение цифровых инструментов и оптимизация процессов являются правильными решениями для строительных компаний. Снижение рисков, соблюдение сроков, повышение качества работы и экономия времени на рутинных задачах — все это могут решить мобильные решения по управлению строительными проектами.

Выводы

Строительная отрасль пережила множество кризисов, при этом правительство постоянно увеличивает ресурсы для обеспечения занятости и гарантированного дохода. В строительном секторе занято около 700 000 человек, а с учетом мультипликативного эффекта эта цифра возрастает примерно до 3 миллионов.

В нынешней экономической и геополитической ситуации, в контексте колебаний курсов валют, антироссийских санкций, проблем с таможенным оформлением и изменений в транспортной логистике, строительные компании испытывают значительные трудности при реализации как государственных, так и частных строительных проектов. В связи с чем, строительным компаниям необходимо сосредоточиться на новых технологиях, которые принесет с собой «Строительство 4.0»:

- больше инвестировать в исследования и разработки;
- развивать активные инновационные возможности;
- создавать инновационные сети для содействия цифровой трансформации строительных компаний.

Список литературы

Antipina O.V. Characteristics of project management in the construction industry of the Russian Federation in modern economic conditions. / O.V. Antipina, M.V. Velm // IOP Conference Series: Earth and Environmental Science. — Vol. 751. International Baikal Investment and Construction Forum “Spatial Restructuring of territories” 4 December 2020. — Irkutsk, Russian Federation, 2021. [Electronic resource]. — Access mode: https://iopscience.iop.org/

Delgado M. D. Deep learning with small data sets: using auto encoders to address limited datasets in construction management Appl. / M.D. Delgado, L. Oyedele // Soft Comput. — 112 (2021). — Article 107836. https://doi.org/10.1016/j.asoc.2021.107836

Gbadamosi A. Offsite construction: developing a BIM-based optimizer for assembly / A. Gbadamosi, et al. // J. Clean. Prod. — 215 (2019). — P. 1180–1190. https://doi.org/10.1016/j.jclepro.2019.01.113

H. M. Barber Jr. Economic performance assessment for the construction industry in the southeastern United States / H. M. Barber Jr., I. H. El-Adaway // Journal of Management in Engineering. — 2015. — 31. — 2. DOI: 10.1061/(ASCE) ME.1943–5479.0000272

Khaertdinova A. Economic development of the construction industry as a basis for sustainable development of the country / A. Khaertdinova, A. Maliashova, S. Gadelshina // E3S Web of Conferences. — 2021. — 274. — 10021. — https://doi.org/10.1051/e3sconf/202127410021

Liu B. Analysis and comparison of embodied energies in gross exports of the construction sector by means of their value-added origins / B. Liu, L. Zhang, J. Sun, D. Wang, C. Liu, M. Luther, Y. Xu // Energy. — 2020. — 191. — 116546. DOI: 10.1016/j.energy.2019.116546

Luciani A. Towards a resilient perspective in building conservation / A. Luciani, D. Del Curto // Journal of Cultural Heritage Management and Sustainable Development. — 2018. — Vol. 8. — No. 3. — P. 309–320. https://doi.org/10.1108/JCHMSD-07–2016–0040

Roders M., & Straub A. Assessment of the likelihood of implementation strategies for climate change adaptation measures in Dutch social housing / M. Roders, A. Straub // Building and Environment. —Vol. 83. — January 2015. — P. 168–176. https://doi.org/10.1016/j.buildenv.2014.07.014

San José R. Effects of climate change on the health of citizens modelling urban weather and air pollution / R. San José, J. L. Pérez, L. Pérez, R. M. Gonzalez Barras // Energy. —Vol. 165. — Part A. — 15 December 2018. — P. 53–62. https://doi.org/10.1016/j.energy.2018.09.088

Sofiat O. Artificial intelligence in the construction industry: A review of present status, opportunities and future challenges / Sofiat O. Abioye Lukumon O. Oyedele Lukman Akanbi Anuoluwapo Ajayi Juan Manuel Davila Delgado Muhammad Bilal Olugbenga O. Akinade Ashraf Ahmed // Journal of Building Engineering. — 2021. — Vol. 44. — December 2021. — 103299. https://doi.org/10.1016/j.jobe.2021.103299

Ustinova L. Factors affecting the parameters of the construction industry / L. Ustinova, R. Sirazetdinov // IOP Conference Series: Materials Science and Engineering. — 890, 1, 0121172020. — 2020. DOI: 10.1088/1757–899X/890/1/012117

Данные Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан за 2010–2021 гг. [Электронный ресурс]. — Режим доступа: http://www.stat.gov.kz

Ежеквартальный макроэкономический анализ показателей, влияющих на деятельность АО «Samruk-Kazyna Construction». — Январь-март 2021 г. — Астана, 2021.

Строительный рынок Казахстана [Электронный ресурс]. — Режим доступа: https://kz.kursiv.media/2022–06–14/stroitelnyj-rynok-kazahstana-prevysil-863-mlrd-tenge/

Строительный рынок Казахстана 2022: технологии и цифровизация [Электронный ресурс]. — Режим доступа: https://www.planradar.com/

Д.Р. Баткеева, Л.Н. Гаврила, А.Т. Омарова, М.Ж. Каменова, Б.Т. Аймурзина

Мемлекеттік стратегия және тұрғын үй-коммуналдық шаруашылықты басқару тәжірибесі

Аңдатпа

Мақсаты: Қазақстан Республикасындағы тұрғын үй құрылысын талдау және цифрлық технологиялардың Қазақстан Республикасының құрылыс саласының экономикалық көрсеткіштеріне әсерін анықтау.

Әдісі: Авторлар ғылыми таным әдістерін қолданған, атап айтсақ: талдау, синтез, дедукция, индукция, абстракциялау және нақтылау, статистикалық ақпаратты жалпылау және топтастыру, дерексіз-логикалық, функционалды және салыстырмалы талдаулар, пәнаралық тәсіл.

Қорытынды: Зерттеу барысында авторлар математикалық модельдеу және болжау әдістерін қолдана отырып, экономиканы цифрландыру жағдайында орындалған құрылыс жұмыстары мен пайдалануға берілген тұрғын үй алаңдары көлемінің көрсеткіштерінің одан әрі өсуі туралы гипотеза жасады.

Қорытындылар: Талдау және алынған нәтижелер процесінде математикалық модельдеу және болжау әдістерін пайдалана отырып, тұрғын үй құрылысында цифрлық технологияларды қолдану арқылы, жасыл экономика мен жасыл инновацияларды пайдалану халықтың жағдайын жақсарту үшін де, жалпы қоршаған орта үшін де маңызды болып табылатындығына көп көңіл бөлу қажет деген қорытындыға келді. Зерттеу жұмысының нәтижелері теориялық және практикалық мәнге ие және жаһандану және цифрландыру күштері құрылыс саласын саланың тиімділігін арттыру үшін цифрландыру процесін ілгерілетуге итермелейтін 4.0 индустриясының пайда болуына айтарлықтай назар аудара отырып, орындалған құрылыс жұмыстары мен пайдалануға берілген тұрғын үй алаңдары көлемінің көрсеткіштерінің одан әрі өсуі туралы автордың гипотезасын растайды.

Кілт сөздер: құрылыс, тұрғын үй құрылысы, «жасыл» экономика, «жасыл» инновация, қоршаған орта, инновация, технология.

D.R. Batkeeva, L.N. Gavrila, A.T. Omarova, M.Zh. Kamenova, B.T. Aimurzina

State strategy and experience of housing and communal services management

Annotation

Object: the research is to analyze housing construction in the Republic of Kazakhstan and the impact of digital technologies on the economic indicators of the construction industry of the Republic of Kazakhstan.

Methods: the authors used the methods of scientific cognition: analysis, synthesis, deduction, induction, abstraction and concretization, generalization and grouping of statistical information, abstract-logical, functional and comparative analyses and interdisciplinary approach.

Findings: in the course of the research, the authors put forward a hypothesis about the further growth of indicators of the volume of construction work performed and residential areas put into operation in the conditions of digitalization of the economy using mathematical modeling and forecasting methods.

Conclusions: in the process of analyzing and obtaining the results using mathematical modeling and forecasting methods, it was concluded that it is necessary to pay great attention to the fact that the use of green economy and green innovations with the use of digital technologies in housing construction is of paramount importance both for the population in order to improve the condition of the population and the environment as a whole. The obtained results of the research work have both theoretical and practical significance and confirm the hypothesis put forward by the author about the further growth of indicators of the volume of construction work performed and the area of commissioned res-

idential areas, placing considerable emphasis on the emergence of Industry 4.0, where the forces of globalization and digitalization encourage the construction industry to promote the process of digitalization to increase the efficiency of the industry.

Keywords: construction, housing construction, green economy, green innovation, environment, innovation, technology.

References

Antipina, O. V. & Velm, M. V. (2021). Characteristics of project management in the construction industry of the Russian Federation in modern economic conditions IOP Conference Series: *Earth and Environmental Science, Vol. 751, International Baikal Investment and Construction Forum "Spatial Restructuring of territories" 4 December 2020*, Irkutsk, Russian Federation. Retrieved from https://iopscience.iop.org/

Barber Jr, H. M., & El-Adaway, I. H. (2015). Economic performance assessment for the construction industry in the southeastern United States. *Journal of Management in Engineering, 31, 2.* DOI: 10.1061/(ASCE) ME.1943–5479.0000272

Dannye Biuro natsionalnoi statistiki Agentstva po strategicheskomu planirovaniiu i reformam Respubliki Kazakhstan za 2010–2021gody. [Data of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2010–2021]. *stat.gov.kz.* Retrieved from http://www.stat.gov.kz [in Russian].

Delgado, M. D. & Oyedele, L. (2021). Deep learning with small data sets: using auto encoders to address limited datasets in construction management Appl. *Soft Comput., 112,* Article 107836. https://doi.org/10.1016/j.asoc.2021.107836

Ezhekvartalnyi makroekonomicheskii analiz pokazatelei, vliiaiushchikh na deiatelnost AO «Samruk-Kazyna Construction» Yanvar–mart 2021 goda [Quarterly macroeconomic analysis of indicators affecting the activities of JSC "Samruk-Kazyna Construction" January-March 2021]. Astana, 2021[in Russian].

Gbadamosi, A. et al. (2019). Offsite construction: developing a BIM-based optimizer for assembly *J. Clean. Prod., 215,* 1180–1190. https://doi.org/10.1016/j.jclepro.2019.01.113

Khaertdinova, A. Maliashova, A., & Gadelshina, S. (2021). Economic development of the construction industry as a basis for sustainable development of the country E3S Web of Conferences 274, 10021. https://doi.org/10.1051/e3sconf/202127410021

Liu, B., Zhang, L., Sun, J., Wang, D., Liu, C., Luther, M., & Xu, Y. (2020). Analysis and comparison of embodied energies in gross exports of the construction sector by means of their value-added origins. *Energy, 191, 116546* DOI: 10.1016/j.energy.2019.116546

Luciani, A. & Del Curto, D. (2018). Towards a resilient perspective in building conservation. *Journal of Cultural Heritage Management and Sustainable Development*, *Vol. 8, No. 3,* 309–320. https://doi.org/10.1108/JCHMSD-07–2016–0040

Roders, M., & Straub, A. (2015). Assessment of the likelihood of implementation strategies for climate change adaptation measures in Dutch social housing. *Building and Environment, Vol. 83, January,* 168–176. https://doi.org/10.1016/j.buildenv.2014.07.014

San José, R., Pérez, J. L., Pérez, L., & Gonzalez Barras, R. M. (2018). Effects of climate change on the health of citizens modelling urban weather and air pollution. *Energy Volume 165, Part A, 15 December*, 53–62 https://doi.org/10.1016/j.energy.2018.09.088

Sofiat O. Abioye Lukumon O. Oyedele Lukman Akanbi Anuoluwapo Ajayi Juan ManuelDavila Delgado Muhammad Bilal Olugbenga O. Akinade Ashraf Ahmed (2021). Artificial intelligence in the construction industry: A review of present status, opportunities and future challenges. *Journal of Building Engineering, Vol. 44,* December 2021, 103299. https://doi.org/10.1016/j.jobe.2021.103299

Stroitelnyi rynok Kazakhstana [Construction market of Kazakhstan]. *kz.kursiv.media.* Retrieved from https://kz.kursiv.media/2022–06–14/stroitelnyj-rynok-kazahstana-prevysil-863-mlrd-tenge/ [in Russian].

Stroitelnyi rynok Kazakhstana 2022: tekhnologii i tsifrovizatsiia [Construction market of Kazakhstan 2022: technologies and digitalization]. *planradar.com*. Retrieved from https://www.planradar.com/ [in Russian].

Ustinova, L. & Sirazetdinov, R. (2020). Factors affecting the parameters of the construction industry. *IOP Conference Series: Materials Science and Engineering, 890, 1, 0121172020*. DOI: 10.1088/1757–899X/890/1/012117

DOI 10.31489/2022Ec4/163-171
УДК 336.717
JEL F15, F36, F65

Т.К. Блохина*

Московский государственный университет имени М.В. Ломоносова, Москва, Россия
E-mail: tk24@list.ru

https//orsid.org/0000-0002-7099-0631

Scopus ID: 57191646841
Researcher ID: AAI-4776-2021

Общий финансовый рынок Евразийского экономического союза: новые факторы интеграции

Аннотация:

Цель: Выявить противоречия, заложенные в концепцию развития общего финансового рынка в странах Евразийского экономического союза, препятствующие ее эффективной реализации, и обосновать направления развития рынка с учетом применения современных финансовых технологий.

Методы: В исследовании были использованы контентный анализ и метод сравнительного анализа, рассчитаны абсолютные и относительные показатели, применен системный подход на основе факторного анализа.

Результаты: На основе анализа динамики показателей финансовых рынков в странах Евразийского союза выявлены противоречия в процессе реализации концепции создания общего финансового рынка, которые обусловлены различными подходами правительств стран-участниц союза к формированию институциональной базы развития национальных рынков, что проявляется в занижении роли финансовых рынков в экономиках ряда стран как источника привлечения инвестиционного капитала.

Выводы: Развитие цифровых технологий способствует созданию новых условий для межстранового движения капитала, ценных бумаг и других финансовых продуктов. Ключевую роль в этом процессе в последнее время стали играть финансовые платформы, которые приняли на себя основной поток капитала и финансовых услуг. При этом они реализуют интеграционный потенциал цифровых технологий через установление стандартов проведения финансовых операций, что позволяет нивелировать особенности и различия национальных финансовых систем. В силу чего финансовые платформы могут сгладить сложившиеся противоречия и принять на себя функции обеспечения эффективного развития всех сегментов общего финансового рынка.

Ключевые слова: Евразийский экономический союз, концепция создания общего финансового рынка, интеграция, финансовые рынки, биржевое пространство, финансовая платформа, операции на финансовых рынках.

Введение

В 2019 г. Евразийской экономической комиссией принята Концепция формирования общего финансового рынка†, которая утвердила основные направления интеграции рынков на основе единой стандартизации национальной рыночной инфраструктуры и гармонизации национального законодательства стран Евразийского экономического союза (далее — ЕАЭС). Однако в 2021–2022 гг. под влиянием геополитических факторов произошли существенные изменения в развитии внутренних национальных процессов практически во всех странах союза, в результате чего внутренние противоречия выступили тормозом в продвижении интеграции стран ЕАЭС, что в итоге отразилось на замедлении темпов проведения финансовой интеграции в странах-участниках. Кроме того, введение санкций против российских банков и ограничение их доступа к международным системам расчета значительно повлияли на оборот капитала и финансовых инструментов не только на финансовом рынке России, но и отразилось на ее взаимоотношениях со всеми странами-партнерами ЕАЭС. Это не только стало препятствовать трансграничному перемещению капитала, но и обозначило ряд проблем в процедуре создания общего финансового рынка ЕАЭС. В связи с чем особую актуальность приобретает анализ таких аспектов формирования общего финансового рынка стран Евразийского экономического союза, которые позволяют максимально использовать цифровые финансовые технологии с

* Автор-корреспондент. E-mail: *tk24@list.ru*

† О концепции формирования общего финансового рынка Евразийского экономического союза. Утверждена Решением Высшего Евразийского экономического совета от 1 октября 2019 г. № 20 // ЕЭК .Официальный сайт. – URL: http://www.eurasiancommission.org/ru/act/finpol/dofp/Documents/ (Дата обращения: 02.11.2022 г.).

учетом особенностей, определяющих современную экономическую политику входящих в объединение стран.

Данное исследование базируется на гипотезе, согласно которой процесс интеграции финансовых рынков стран ЕАЭС должен поменять основные инструменты его реализации с универсализации регулятивных методов на переход к цифровым методам, где ключевую роль могут занять финансовые платформы, которые сыграют ведущую роль в обслуживания населения всех стран, входящих в ЕАЭС.

Литературный обзор

Исследованию проблем формирования и развития Евразийского экономического союза посвящено много работ российских, белорусских и казахстанских ученых и экономистов. Если в начале создания ЕАЭС, начиная с 2014 г., исследования сосредоточивались преимущественно на разработке путей интеграции (Михайлов, 2016; Вьюнов и др., 2016), то в последнее время акценты в исследовании данной проблематики сместились в сторону оценки трудностей, с которыми сталкивается процесс интеграции государств-участников ЕАЭС (Гришина, 2016), а также поиска возможных путей их преодоления (Ковалева, 2017). Среди выделенных исследований заслуживает внимания работа Г.И. Осадчей и В.М. Вартановой, в которой разбираются проблемы и перспективы развития интеграционных процессов в ЕАЭС. Авторы справедливо отмечают, что в развитии интеграции отмечается преобладание политических интересов над экономическими. В связи с чем предлагается проведение интеграции осуществлять с учетом решения «перспективных проблем национальных экономик, которые должны обеспечить им переход к устойчивому развитию» (Осадчая, Вартанова, 2018. — С. 617).

А.А. Мигранян также отмечает, что особое значение в условиях интеграции должно уделяться геоэкономической конъюнктуре (Мигранян, 2015). Нужно отметить, что анализ политических отношений при рассмотрении вопросов интеграции в ЕАЭС очень тесно переплетается с экономическими проблемами, решение которых ряд авторов считает неотъемлемой частью проводимой интеграционной политики (Навой, 2017).

При анализе состояния финансовых рынков стран ЕАЭС внимание авторов привлекает наличие ряда проблем, препятствующих развитию интеграционных процессов. В частности, А.Я. Миркиным акцентируется доминирующее положение России в структуре объединения финансовых рынков стран-участниц (Миркин, 2017), в то же время он отмечает несовершенство и нерациональность сложившихся внутри союза финансовых отношений (Миркин, 2017. — С. 118).

Некоторые экономисты придерживаются точки зрения, согласно которой развитие финансовых рынков должно быть увязано с инвестиционными процессами внутри ЕАЭС. Так, ссылаясь на международный опыт интеграции, Е.А. Звонова и В.Я. Пищик доказывают, что прямые инвестиции являются основным стимулом развития интеграционного процесса, поскольку выступают как основа эффективного экономического взаимодействия стран, за счет которой возможно обеспечить выравнивание развития их экономик (Звонова, Пищик, 2018. — С. 17).

Таким образом, анализ точек зрения о развитии интеграционных процессов в рамках ЕАЭС высветил ряд проблем, оказывающих на них тормозящее воздействие, что, в свою очередь, требует поиска подходов к созданию общего финансового рынка стран Евразийского экономического союза с учетом влияния современных вызовов, с которыми сталкиваются страны-участницы, и тех возможностей, которые открывает развитие цифровых технологий.

Методы

В рамках проведения настоящего исследования использовался комплексный методологический подход, включающий совокупность нескольких методов, таких как контентный анализ литературных источников по проблемам развития интеграции в странах ЕАЭС; сравнительный анализ основных экономических показателей развития ключевых сегментов финансового рынка в государствах ЕАЭС; применение системного подхода составило базу для анализа влияния современных факторов на развитие финансовых рынков стран ЕАЭС.

Результаты и обсуждение

Развитие событий в политической и экономической сферах показали уязвимость тех положений, которые составляют фундамент проведения интеграции финансовых рынков в рамках ЕАЭС. Концептуальный подход к интеграции финансовых рынков построен по направлениям развития трех основных секторов: банковского, страхового и фондового. При этом предусмотрен поэтапный подход к

объединению финансовых рынков (до 2025 г. и после 2025 г.) с целью создания системы защиты от рисков финансовой интеграции, возникающих в результате сокращения регуляторного арбитража и либерализации взаимного доступа к операциям на финансовых рынках.

Вместе с тем данное концептуальное положение в своей основе опирается на совершенствование национальных финансовых инфраструктур, в том числе и вследствие развития национальных платежных систем, с помощью которых центральные банки должны обеспечивать прохождение трансграничных платежей и расчетов. Развивать такие системы планируется путем их модернизации. Однако к решению данной проблемы страны, входящие в ЕАЭС, подошли при разных уровнях собственного экономического развития и, соответственно, с разными финансовыми возможностями для вложения капитала в создание эффективного финансового рынка.

Сдерживающим фактором интеграции финансовых рынков стран ЕАЭС выступает разный уровень развития этих рынков. Оценка финансовой инфраструктуры стран-участниц союза с точки зрения их готовности к объединению демонстрирует дисбаланс в реализации целей и возможностей государств в решении этих вопросов (табл. 1).

Таблица 1. Основные показатели развития секторов финансового рынка в странах ЕАЭС в 2021 г., млн. долл. США

	Рынок страховых услуг		Фондовый рынок		Рынок банковских услуг		ВВП
Страны	Объем страховых услуг	Доля к ВВП, %	Объемы торгов на фондовых рынках	Доля к ВВП, %	Активы банков	Доля к ВВП, %	ВВП страны
Армения	99,1	0,71	195,3	1,4	14800	106,5	13900
Беларусь	668,5	0,98	2976,5	4,4	37700	55,3	68200
Казахстан	1913,1	0,99	310990,6	161,1	87200	45,2	193000
Кыргызстан	14,9	0,17	115,0	1,35	4300	50,6	8500
Россия	24553,9	1,38	711920,1	40,0	1619400	90,9	1779900

Рассчитано по данным «Финансовая статистика Евразийского экономического союза: Оперативные данные за 2021 год» :стат. сб. — М.: Евразийская экономическая комиссия, 2022. — 125 с. // ЕЭК: официальный сайт. URL: http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/fin_stat/statistical_publications/Documents/finstat/finstat_2021.pdf (дата обращения: 02.11.2022).

Представленные в таблице 1 данные показывают, что среди рассмотренной группы стран по всем показателям секторов финансового рынка доминирует с большим перевесом Россия. На втором месте показатели финансового рынка Казахстана, которые (кроме объема фондового рынка) намного ниже российских значений. Показатели Беларуси, Армении и Кыргызстана имеют весьма низкие значения по сравнению с Россией и Казахстаном.

Для более объективного анализа мы провели сравнение этих показателей по отношению к ВВП рассматриваемых стран, которые выражены для сопоставимости в долларах США. Такой подход показал сохранение выявленной тенденции в распределении уровня развития финансовых рынков. Прослеживаемая ассиметрия в показателях секторов финансовых рынков стран ЕАЭС демонстрирует различия в уровнях развития этих рынков. Это свидетельствует о той роли, которую играют финансовые рынки в экономике стран-участниц Союза, когда в таких странах, как Армения, Беларусь, Кыргызстан, развитию финансовых рынков не придается серьезного значения как сектору обеспечения экономики инвестициями, в то время как в России и Казахстане этот сектор экономики эффективно развивается.

Определение роли финансового рынка в экономической политике государств ЕАЭС показывает степень интеграционной активности правительств этих стран в формировании общего финансового рынка. В то же время утвержденный всеми странами подход к формированию общего рынка ЕАЭС ориентирован на ведущую роль государства как участника данного процесса, поэтому неэффективное участие отдельных правительств в обеспечении стратегии объединения финансовых рынков делает эту задачу невыполнимой в ближайшей перспективе. При этом рыночный вариант интеграции за счет взаимовлияния участников друг на друга не рассматривается, поскольку регуляторы воспринимают рыночный вариант как угрозу возникновения финансовой нестабильности из-за возможности «пере-

тока капитала в те сферы, которые недостаточно регулируются государственными органами» (Зубенко, 2016).

Практика формирования национальных финансовых рынков показывает, что внедрение цифровых технологий способствует развитию интеграционных процессов именно по рыночному варианту, когда за счет использования современных финансовых технологий участники рынка сами определяют свои приоритеты и направления движения капитала. Наиболее наглядно данная тенденция прослеживается на примере распространения финансовых услуг, которые развиваются без привязки к национальным финансовым системам (**Марамыгин, 2019**).

На сегодняшний день финансовые услуги получили развитие во всех связанных с движением денежных средств сферах, обслуживая заемное финансирование, сбережение и инвестирование, страхование и пенсионное обеспечение. При этом постоянно происходит рост «ассортиментной и ментальной доступности через развитие конкуренции на финансовом рынке, расширение линейки финансовых продуктов и повышение финансовой грамотности населения» (**Харланов, 2019**).

Одной из таких моделей является финансовый маркетплейс (платформа), построенный на систематизации имеющихся финансовых продуктов и предоставлении клиенту возможности оформить тот, который лучше всего подходит ему по критериям доходности, риска и стоимости.

Для оценки уровня распространения финансовых платформ в странах ЕАЭС нами был проведен анализ поисковых систем по всем странам, где были выбраны запросы по специализированным разделам соответствующего сайта на финансовых платформах (табл. 2).

Таблица 2. Количество запросов финансовых продуктов в странах ЕАЭС в 2020-2021 гг., ед.

Финансовый продукт	РФ	Беларусь	Казахстан	Армения	Киргизия
Депозиты	1157766	26362	42524	264	2270
Вклады	6600192	98952	43726	954	2010
ОСАГО	4342284	4112	2316	356	332
Кредиты	21573162	520486	275536	5098	14862
Займы	8931106	39126	78280	1398	2080
Ипотека	9186096	20346	53028	1402	4258
КАСКО	733836	4936	1816	52	72
Всего	52524442	714320	497226	9524	25884

Примечание. Построена авторами по материалам Реестра операторов финансовых платформ по состоянию на 01.12.2021 г. (Электронный ресурс). — Режим доступа: https://www.cbr.ru/vfs/registers/infr/list_financial_platform_op.xlsx (Дата обращения 02.11.2022 г.).

Приведенная в таблице 2 выборка включает запросы по таким финансовым услугам, как депозиты, вклады, отдельные виды страхования, кредиты и займы, ипотека, то есть те ключевые услуги, на которых было сосредоточено исследование рассмотренных сайтов. Большая часть запросов приходится на Российскую Федерацию — 97,68 % от общего количества, что можно объяснить более развитым рынком финансовых услуг, в том числе более высоким уровнем проникновения Интернета по сравнению с другими странами-участницами указанного объединения, более значительной численностью населения, а также более высоким уровнем платежеспособности потенциальных и фактических пользователей. В качестве стимулирующего банка[*]. В то время как в других странах ЕАЭС отсутствует государственное регулирование этой сферы, что способствует распространению в них большого числа маркетплейсов с сомнительными финансовыми инструментами. Следовательно, контроль государства обеспечивает более активную технологическую трансформацию финансового рынка через расширение онлайн-каналов доступа к финансовым услугам, в том числе за счет создания и поддержки таких цифровых финансовых сервисов, как удаленная идентификация, системы быстрых платежей, цифровой профиль, электронный документооборот.

[*] Федеральный закон от 20.07.2020 г. № 211–ФЗ (ред. от 02.07.2021 г.) «О совершении финансовых сделок с использованием финансовой платформы». [Электронный ресурс] — Режим доступа: http://www.garant.ru/hotlaw/federal/1401689/ (Дата обращения 02.11.2022 г.)

В то же время российская финансовая система во многом определяет и параметры развития для финансовых систем стран ЕАЭС. Так, включение в трансграничный оборот денежных переводов мигрантов, работающих в России, потребовало изменения системы проведения переводов между странами, в том числе модернизации в части создания единой системы обмена сообщениями, структуры межбанковских платежей, механизмов реализации единой монетарной политики для обеспечения беспрепятственного осуществления платежей и расчетов.

Таблица 3. Динамика трансграничных денежных переводов физических лиц стран ЕАЭС в 2017–2020 гг., млн долл.

Трансграничные денежные переводы физических лиц в страну в млн долл.	2017 г.	2018 г.	2019 г.	2020 г.
Армения	1 756,48	1 785,61	1 958,58	1 841,68
Беларусь	629,20	632,70	644, 60	622,40
Казахстан	2 789,4	2 260,7	1 836,8	1 871,3
Кыргызстан	2 484,76	2 687,48	2 409,57	2 380,91
Россия	20 786,6	22 450,7	25 011,9	23 402,0
Трансграничные денежные переводы физических лиц из страны в млн долл.				
Армения	1 024,99	1 188,40	1 454,55	1 267,34
Беларусь	293,3	326,4	438,6	570,9
Казахстан	7 337,7	5 439,2	5 882,4	7 515,9
Кыргызстан	456,67	546,56	558,69	491,47
Россия	43 834,0	47 837,9	41 926,3	40 025,5

Примечание. Платежи за экспорт и импорт товаров и услуг и переводы денег. Финансовая статистика по годам. ЕЭК. — URL: http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/fin_stat/time_series/Pages/transfers.aspx. (Дата обращения 02.11.2022 г.).

Приведенные данные показывают объемы оборота денежных средств через трансграничные переводы, в которые в той или иной мере вовлечено население всех стран ЕАЭС. Конечно, лидером по объему переводимого (40 млрд долл.) и получаемого (23,4 млрд долл.) капитала является Россия. В то время как в Кыргызстан приходит переводов в 5 раз больше, чем осуществляется отправка из него. Общий объем перемещаемого капитала между странами ЕАЭС в 2020 г. составил около 80 млрд долл., что представляет собой огромный денежный поток, перемещаемый без участия правительств, который можно рассматривать как один из факторов, обусловливающих необходимость создания единой информационно-коммуникационной платформы для проведения трансграничных платежей в рамках ЕАЭС, что может быть использовано в целях формирования общего финансового рынка союза.

Значительными темпами в странах-участницах ЕАЭС развивается механизм привлечения инвестиций с использованием инвестиционных платформ. В России в 2020 г. функционировало более 20 платформ, осуществляющих операции краудлендинга, через которые за этот год прошло более 5 млрд руб., а российский рынок краудфандинга в 2020 г. насчитывал 1250 фирм с объемом привлеченных средств в 454 млн руб. Такие виды инвестирования получили широкое распространение также в Казахстане, где создано 5 платформ B2B с объемом инвестиций 17 млрд тг в год. Краудфандинговые формы инвестирования начали развиваться в Белоруссии, Армении и Кыргызстане: в каждой из этих стран создано от 1 до 3 платформ, которые используются для сбора вознаграждений или пожертвований, а также инвестирования стартапов и малого бизнеса (Блохина, 2021).

В то же время приведенные данные показывают уровень развития внебанковского кредитования, когда с использованием финансовых технологий создаются платформы для свободного перемещения капитала между инвесторами и заемщиками. Поэтому развитие рынка финансовых услуг в странах ЕАЭС можно рассматривать как важнейший фактор интеграции, которая формируется рыночным путем на основе распространения финансовых технологий, когда перемещение капитала в форме переводов, расчета за произведенные покупки, кредитования бизнеса осуществляется вне регулируемой банковской системы. При этом нужно отметить, что развитие сегмента финансовых услуг не отражено в Концепции развития общего финансового рынка ЕАЭС, в связи с чем в данный документ необходимо вносить соответствующие корректировки с учетом развития нового фактора интеграции.

В современных условиях сформировались предпосылки, когда цифровизация обеспечивает появление новых, более удобных и безопасных продуктов и сервисов, которые повышают доступность финансовых услуг и которые пользуются спросом у широкого круга физических и юридических лиц (Блохина, 2021). Исходя из обхвата участвующих в процессе операций на финансовых платформах пользователей и объема привлекаемого капитала, они при определенных условиях могут выступить в качестве инструмента интеграции финансовых рынков стран ЕАЭС. Это потребует объединения их в единую систему и подчинение единым нормативным стандартам деятельности, что может составить интеграционную платформу для создания общего финансового рынка ЕАЭС.

Выводы

Как показало проведенное исследование, реализуемая в настоящее время стратегия интеграции финансовых рынков в странах ЕАЭС требует корректировки с учетом тех вызовов, которые возникли в связи с обострением геополитической ситуации в мире, когда страны вынуждены приспосабливаться к новым условиям за счет снижения своего участия в объединении финансовых рынков. Возникновение новых возможностей, которые открывает использование финансовых технологий позволяет преодолевать те ограничения, которые возникают в связи изменяющимися экономическими условиями. Современный финансовый рынок в наибольшей степени отражает потребности и возможности населения участвовать в финансовых операциях через финансовые платформы, что отвечает интересам частных инвесторов, готовых на новом уровне использовать финансовые технологии. При этом роль регуляторных органов проявляется в «догоняющем режиме», когда они начинают регулировать процессы, получившие наиболее широкое распространение среди пользователей, с целью снижения рисков таких операций.

Вместе с тем, появление факторов, обусловливающих доминирующее развитие финансовых услуг на рынках стран ЕАЭС, необходимо учесть в Концепции формирования общего финансового рынка, где создание общего биржевого пространства может быть реализовано на базе использования уже созданных и работающих современных финансовых платформ, обеспечивающих трансграничное перемещение капитала. Данный подход обосновывается тем, что интеграционный потенциал цифровых технологий заложен в возможностях стандартизации проведения финансовых операций в рамках финансовых платформ, которая поможет сгладить национальные особенности финансовых систем. При этом создаются универсальные условия для функционирования финансового бизнеса, применяющего общие стандарты и единые правила поведения. В результате стандартизированные финансовые отношения становятся более устойчивыми по отношению к рискам, что будет способствовать обеспечению эффективного развития всех сегментов общего финансового рынка ЕАЭС.

Список литературы

Айтикеев А.А. Решение ключевых проблем интеграции Евразийского экономического союза (ЕАЭС): проведение в Евразийском экономическом союзе пакетной экономической политики вместо координации экономических политик государств-членов ЕАЭС / А.А. Айтикеев, У.Д. Джаныбеков, А.А. Айтикеева // Экономика: вчера, сегодня, завтра. 2018. — Т. 8. — № 3. — С. 7–18.

Баядан А.А. Проблемы развития интеграции рынка ценных бумаг в странах ЕАЭС / А.А. Баядан, А.М. Багдасарян // Вестн. Междунар. орг. — 2017. — № 4. — С. 90–103.

Блохина Т.К. Формирование общего финансового рынка Евразийского экономического союза: современное состояние и новые факторы интеграции / Т.К. Блохина // Финансы, деньги, инвестиции. — 2021. — № 2. — С. 9–15.

Вьюнов В. Н. Некоторые перспективы и противоречия развития ЕАЭС / В.Н. Вьюнов, М.Г. Филиппова, Р.М. Мамедов и др. // Молодой ученый. — 2016. — № 8 (112). — С. 520–523.

Гришина О. А. Проблемы и перспективы евразийской интеграции (на примере ЕАЭС) / О.А. Гришина, С.Г. Евсюков., Е.В. Устюжанина // Вестн. РЭА им. Г. В. Плеханова. — 2016. — № 1 (85). — С. 147–157.

Жариков М.В. Основные направления развития российских финансовых технологий и перспективы их интеграции с международными финансовыми технологиями / М.В. Жариков // Вопросы инновационной экономики. — 2019. — Т.9. № 4. — С. 1677–1689. — DOI: 10.18334/vinec.9.4.41325.

Звонова Е. А. О концептуальных подходах к созданию общего финансового рынка государств-членов ЕАЭС / Е. А. Звонова, В. Я. Пищик // Финансы и кредит. — 2018. — Т.24. — Вып.1. — С. 5–18.

Зубенко В. В. Узловые аспекты создания общего финансового рынка Евразийского экономического союза / В. В. Зубенко, М. В. Михайлов // Финансовая аналитика: проблемы и решения. — 2016. — № 31. — С. 2–16.

Ковалева В. Д. Актуальные проблемы Евразийской экономической интеграции / В. Д. Ковалева // Научное обозрение. Экономические науки. — 2017. — № 2. — С. 54–57.

Кучмезов И. М. Барьеры для интеграции финансовых рынков стран Евразийского экономического союза (ЕАЭС) / И. М. Кучмезов // Вестн. ВГУ. Сер. Экономика и управление. — 2019. — № 4. — С. 140–149.

Марамыгин М. С. Цифровая трансформация российского рынка финансовых услуг: тенденции и особенности / М. С. Марамыгин, Г. В. Чернова, Л. Г. Решетникова // Управленец. — 2019. — Т. 10. № 3. — С. 70–82. — DOI: 10/29141/2218-5003-2019-10-3-7.

Мигранян А.А. Перспективы евразийской интеграции: векторы и направления интеграционного взаимодействия в условиях современной геоэкономической конъюнктуры / А.А. Мигранян// Alatoo Academic Studies. — 2015. — № 4. — С. 120–126.

Миркин Я. М. Финансовый рынок Евразии: устройство, динамика, будущее / Я. М. Миркин/ — М.: Магистр, 2017. — 382 с.

Михайлов М. В. Формирование общего финансового рынка ЕАЭС / М. В. Михайлов // Экономические науки. — 2016. — № 3 (136). — С. 92–95.

Осадчая Г.И. Трудности экономической интеграции государств-членов ЕАЭС и возможности их преодоления / Г.И. Осадчая, М.Л. Вартанова// Экономические отношения. — 2018. — Т. 8. — № 4. — С. 617-628.

Навой А. В. Современная региональная экономическая интеграция: основные тренды и противоречия_/ А. В. Навой // Деньги и кредит. — 2017. — № 4. — С. 24–32.

Харланов А. С. Рынок финансовых услуг в Евразийском экономическом союзе: тенденции и развитие / А. А. Харланов, М. М. Новиков // Изв. вузов. Сер. Экономика, финансы и управление производством. — 2019. — № 3. — С. 26–29.

Т.К. Блохина

Еуразиялық экономикалық одақтың жалпы қаржы нарығы: интеграцияның жаңа факторлары

Аңдатпа

Мақсаты: Еуразиялық экономикалық одақ елдерінде ортақ қаржы нарығын дамыту тұжырымдамасына енгізілген, яғни оны тиімді іске асыруға кедергі келтіретін қайшылықтарды анықтау және қазіргі заманғы қаржы технологияларын қолдануды ескере отырып, нарықты дамыту бағыттарын негіздеу.

Әдісі: Зерттеуде мазмұнды талдау және салыстырмалы талдау әдісі қолданылды, абсолютті және салыстырмалы көрсеткіштер есептелді, факторлық талдау негізінде жүйелік тәсіл пайдаланылды.

Қорытынды: Еуразиялық одақ елдеріндегі қаржы нарықтары көрсеткіштерінің серпінін талдау негізінде ортақ қаржы нарығын құру тұжырымдамасын іске асыру процесінде қарама-қайшылықтар анықталды, олар одаққа қатысушы елдер үкіметтерінің ұлттық нарықтарды дамытудың институционалдық базасын қалыптастыруға әртүрлі тәсілдеріне негізделген, бұл инвестициялық капиталды тарту көзі ретінде бірқатар елдердің экономикаларындағы қаржы нарықтарының рөлін төмендетуден көрінеді.

Тұжырымдама: Цифрлық технологиялардың дамуы капиталдың, бағалы қағаздардың және басқа да қаржы өнімдерінің еларалық қозғалысы үшін жаңа жағдайлар жасауға ықпал етеді. Бұл процесте соңғы кездері капитал мен қаржылық қызметтердің негізгі ағымын қабылдаған қаржы платформалары шешуші рөл атқара бастады. Бұл ретте олар ұлттық қаржы жүйелерінің ерекшеліктері мен айырмашылықтарын нивелирлеуге мүмкіндік беретін қаржылық операцияларды жүргізу стандарттарын белгілеу арқылы цифрлық технологиялардың интеграциялық әлеуетін іске асырады. Осыған байланысты қаржы платформалары қалыптасқан қайшылықтарды тегістей алады және жалпы қаржы нарығының барлық сегменттерінің тиімді дамуын қамтамасыз ету функцияларын қабылдай алады.

Кілт сөздер: Еуразиялық экономикалық одақ, ортақ қаржы нарығын құру тұжырымдамасы, интеграция, қаржы нарықтары, биржалық кеңістік, қаржы платформасы, қаржы нарықтарындағы операциялар.

T.K. Blokhina

The Common Financial Market of the Eurasian Economic Union: new factors of integration

Abstract

Object: to identify the contradictions inherent in the concept of the development of the common financial market in the countries of the Eurasian Economic Union, preventing its effective implementation, and to substantiate the directions of market development taking into account the use of modern financial technologies.

Methods: content analysis and comparative analysis were used in the study, absolute and relative indicators were calculated, a systematic approach based on factor analysis was applied.

Findings: based on the analysis of the dynamics of financial markets in the countries of the Eurasian Union, contradictions in the implementation of the concept of creating a common financial market have been identified, which are

due to different approaches of the governments of the member states of the Union to the formation of the institutional framework for the development of national markets, which is manifested in the decline in the role of financial markets in the economies of a number of countries as a source of attracting investment capital.

Conclusions: the development of digital technologies contributes to the creation of new conditions for the cross-country movement of capital, securities and other financial products. A key role in this process has recently been played by financial platforms that have taken over the main flow of capital and financial services. At the same time, they realize the integration potential of digital technologies through the establishment of standards for financial transactions, which makes it possible to smooth out the features and differences of national financial systems. As a result, financial platforms can smooth out the existing contradictions and assume the functions of ensuring the effective development of all segments of the common financial market.

Keywords: Eurasian Economic Union, the concept of creating a common financial market, integration, financial markets, exchange space, financial platform, operations in financial markets

References

Aitikeev, A. A. (2018). Reshenie kliuchevykh problem integratsii Evraziiskogo ekonomicheskogo soiuza (EAES): provedenie v Evraziiskom ekonomicheskom soiuze paketnoi ekonomicheskoi politiki vmesto koordinatsii ekonomicheskikh politik gosudarstv-chlenov EAES [Solution of the key problems of integration of the Eurasian Economic Union (EAEU): conduction of a package economic policy in the Eurasian Economic Union instead of coordination of the economic policies of the EAEU member states]. *Ekonomika: vchera, segodnia, zavtra — Economics: yesterday, today, tomorrow, 8, 3,* 7–18 [in Russian].

Bayadan, A. A. & Bagdasaryan, A. M. (2017). Problemy razvitiia integratsii rynka tsennykh bumag v stranakh EAES [Problems of development of integration of the securities market in the EAEU countries]. *Vestnik Mezhdunarodnoi organizatsii — Bulletin of the international organization, 4,* 90–103 [in Russian].

Blokhina, T. K. (2021). Formirovanie obshchego finansovogo rynka Evraziiskogo ekonomicheskogo soiuza: sovremennoe sostoianie i novye faktory integratsii [Formation of the common financial market of the Eurasian Economic Union: the current state and new factors of integration*]. Finansy, dengi, investitsii — Finance, money, investments,* 2, 9–15[in Russian].

Vyunov, V. N. (2016). Nekotorye perspektivy i protivorechiia razvitiia EAES [Some prospects and contradictions of the development of the EAEU]. *Molodoi uchenyi — Young Scientist, 8 (112),* 520–523 [in Russian].

Grishina, O. A., Evsyukov, S. G. & Ustyuzhanina, E. V. (2016). Problemy i perspektivy evraziiskoi integratsii (na primere EAES) [Problems and prospects of Eurasian integration (on the example of the EAEU). *Vestnik REA imeni G. V. Plekhanova — Bulletin of the Plekhanov REA,* 1 *(85),* 147–157 [in Russian].

Zharikov, M. V. (2019). Osnovnye napravleniia razvitiia rossiiskikh finansovykh tekhnologii i perspektivy ikh integratsii s mezhdunarodnymi finansovymi tekhnologiiami [The main directions of development of Russian financial technologies and prospects for their integration with international financial technologies]. *Voprosy innovatsionnoi ekonomiki — Issues of innovative economy, 9, 4,* 1677–1689. – DOI: 10.18334/vinec.9.4.41325. [in Russian].

Zvonova, E. A. & Pishhik, V. Ya. (2018). O kontseptualnykh podkhodakh k sozdaniiu obshchego finansovogo rynka gosudarstv-chlenov EAES [On conceptual approaches to the creation of a common financial market of the EAEU Member States]. *Finansy i kredit — Finance and Credit, 24, 1,* 5–18 [in Russian].

Zubenko, V. V. & Mikhailov, M. V. (2016). Uzlovye aspekty sozdaniia obshchego finansovogo rynka Evraziiskogo ekonomicheskogo soiuza [Nodal aspects of creating a common financial market of the Eurasian Economic Union]. Finansovaia analitika: problemy i resheniia — Financial analytics: problems and solutions, 31, 2–16 [in Russian].

Kovaleva, V. D. (2017). Aktualnye problemy Evraziiskoi ekonomicheskoi integratsii [Actual problems of Eurasian economic integration]. *Nauchnoe obozrenie. Ekonomicheskie nauki — Scientific Review. Economic sciences, 2,* 54–57 [in Russian].

Kuchmezov, I. M. (2019). Barery dlia integratsii finansovykh rynkov stran Evraziiskogo ekonomicheskogo soiuza (EAES) [Barriers to the integration of financial markets of the countries of the Eurasian Economic Union (EAEU)]. *Vestnik Voronezhskogo gosudarstvennogo universiteta. Seriia Ekonomika i upravlenie — Bulletin of Voronezh State University. Series: Economics and Management, 4,* 140–149 [in Russian].

Maramygin, M. S. (2019). Tsifrovaia transformatsiia rossiiskogo rynka finansovykh uslug: tendentsii i osobennosti [Digital transformation of the Russian financial services market: trends and features]. *Upravlenets — Manager, 10, 3,* 70–82. – DOI: 10/29141/2218-5003-2019-10-3-7 [in Russian].

Migranyan, A. A. (2015). Perspektivy evraziiskoi integratsii: vektory i napravleniia integratsionnogo vzaimodeistviia v usloviiakh sovremennoi geoekonomicheskoi koniunktury [Prospects of Eurasian integration: vectors and directions of integration interaction in the conditions of modern geo-economic conjuncture]. Alatoo Academic Studies, 4, 120–126 [in Russian].

Mirkin, Ya. M. (2017). Finansovyi rynok Evrazii: ustroistvo, dinamika, budushchee [The financial market of Eurasia: structure, dynamics, future]. Moscow: Magistr, 382 [in Russian].

Mikhailov, M. V. (2016). Formirovanie obshchego finansovogo rynka EAES [Formation of the common financial market of the EAEU]. *Ekonomicheskie nauki — Economic sciences, 3 (136),* 92–95 [in Russian].

Osadchaya, G. I., & Vartanova M. L. (2018). Trudnosti ekonomicheskoi integratsii gosudarstv-chlenov EAES i vozmozhnosti ikh preodoleniia [Difficulties of economic integration of the EAEU member states and the possibilities of overcoming them]. *Ekonomicheskie otnosheniia — Economic relations, 8, 4,* 617–628 [in Russian].

Navoy, A.V. (2017). Sovremennaia regionalnaia ekonomicheskaia integratsiia: osnovnye trendy i protivorechiia [Modern regional economic integration: main trends and contradictions]. *Dengi i kredit — Money and credit, 4,* 24–32 [in Russian].

Kharlanov, A. S. (2019). Rynok finansovykh uslug v Evraziiskom ekonomicheskom soiuze: tendentsii i razvitie [Financial services market in the Eurasian Economic Union: trends and development]. *Izvestiia vuzov*. Seriia *Ekonomika, finansy i upravlenie proizvodstvom — Universities' news. Series "Economics, Finance and Production Management", 3*, 26–29 [in Russian].

DOI 10.31489/2022Ec4/172-179
JEL: C53
УДК 311

Н.С. Лукашевич[1], Е.Р. Темиргалиев[2], Т.В. Баранова[3*]

[1,2,3] Санкт-Петербургский политехнический университет Петра Великого, Санкт-Петербург, Россия

[1]lukashevich@spbstu.ru, [2]temirg_er@spbstu.ru,
[3]baranova2.tv@edu.spbstu.ru

[1] Scopus Author ID: 56027472300 [2], Scopus Author ID: 57210554385
[1] https://orcid.org/0000-0001-5719-4844, [2] https://orcid.org/0000-0001-8892-3640

Прогнозирование продаж на основе модели Хольта-Уинтерса

Аннотация:

Цель: Апробация модели Хольта–Уинтерса, или тройного экспоненциального сглаживания, используемой для процессов, имеющих тренд и сезонную составляющую, для прогнозирования поставок скоропортящихся товаров на примере цветочной продукции.

Методы: Модель Хольта–Уинтерса, модель ARIMA, подходы к оценке экономической эффективности.

Результаты: Апробированы модели и методы для прогнозирования поставок, проведен расчет прогнозных значений на примере данных по фактическим продажам исследуемой организации. Сравнительный анализ результатов моделирования (прогнозирования) на основе модели Хольта–Уинтерса и модели ARIMA показал, что прогнозирование временных рядов с помощью модели Хольта–Уинтерса имеет достоверные результаты на 99 %, ARIMA имеет более низкие значения точности (от 78 до 99,8 %).

Выводы: Для точного планирования товарных потоков и эффективной логистической координации деятельности предприятия предложена методика составления качественного прогноза с помощью модели Хольта–Уинтерса и ARIMA. На основе проведенного исследования получена математическая модель сокращения затрат на хранение излишнего объема запасов, предложены рекомендации по применению моделей прогнозирования, полученные прогнозные значения использованы для оценки эффекта от внедрения точных методов прогнозирования. Использование модели Хольта–Уинтерса для прогнозирования поставок скоропортящихся товаров на примере цветочной продукции имеет для исследуемой организации положительный экономический эффект, равный порядка 57 % от чистой прибыли по основным позициям цветочной продукции, что достигается за счет снижения затрат на транспортировку, хранение, утилизацию нереализованных запасов.

Ключевые слова: прогнозирование, экономическая эффективность, запасы, модель Хольта–Уинтерса, модель ARIMA.

Введение

Организации, стремящиеся обеспечить устойчивость на рынке и максимально удовлетворить потребительский спрос, необходимо прогнозирование объема продаж. Наиболее остро это ощущается в период, когда формируется единое транспортное пространство, интеграция стран изменяет цепочки поставок. Требуется грамотная логистическая координация предприятия, путем эффективного управления, распределения и пополнения запасов, во избежание ухудшения финансовых показателей.

Внедрение эффективных (точных) методов прогнозирования товарных потоков, использование математических моделей, нивелирование методов экспертных оценок и ошибочного использования методов средних значений поможет поддержать необходимый уровень запаса товара, избегать дефицита и профицита продукции, своевременно пополнять складские запасы. Это позволяет снижать затраты на хранение излишков запасов и потери скоропортящихся запасов ввиду отсутствия спроса.

Обзор литературы

В основе логистической парадигмы лежат методы прогнозирования. Определение метода прогнозирования предлагает американский ученый Э. Янч, как «способ исследования объекта прогнозирования, направленный на разработку прогнозов». Классифицируют методы на интуитивные (основанные на опыте и интуитивно-логическом мышлении) и формализованные (основанные на экономико-математическом прогнозировании, где в качестве результата представляется модель).

Экспоненциальное сглаживание считается одним из самых значимых способов для прогнозирования. Предлагаемая модель достаточно гибкая из-за определенной простоты вычислений и регулированию веса исходных данных. Наблюдения и прогнозы, как правило, являются средневзвешенны-

* Автор корреспондент. E-mail: *baranova2.tv@edu.spbstu.ru*

ми при применении рассматриваемого метода. Особенностью считается тот факт, что вес уменьшается по мере использования.

Модель Хольта-Уинтерса способна найти и обнаружить определенные тренды в краткосрочном периоде с последующим переносом на будущее. ARIMA — интегрированная авторегрессионная модель скользящего среднего. Данный метод дает возможность прогноза показателей, изменяющихся во времени. В модели отсутствует конкретная модель прогнозирования временных показателей, алгоритм самостоятельно может подобрать необходимую модель, опираясь на временные параметры.

Таблица 1. Сравнение моделей и методов прогнозирования

Модель и метод	Достоинства	Недостатки
Регрессионные модели и методы	Простота, гибкость, прозрачность моделирования; единообразие анализа и проектирования	Сложность определения функциональной зависимости; трудоемкость нахождения коэффициентов зависимости; отсутствие возможности моделирования нелинейных процессов (для нелинейной регрессии)
Авторегрессионные модели и методы	Простота, прозрачность моделирования; единообразие анализа и проектирования; множество примеров применения	Трудоемкость и ресурсоемкость идентификации моделей; невозможность моделирования нелинейностей; низкая адаптивность
Модели и методы экспоненциального сглаживания	Простота моделирования; единообразие анализа и проектирования	Недостаточная гибкость; узкая применимость моделей
Нейросетевые модели и методы	Нелинейность моделей; масштабируемость, высокая адаптивность; единообразие анализа и проектирования; множество примеров применения	Осутствие прозрачности; сложность выбора архитектуры; жесткие требования к обучающей выборке; сложность выбора алгоритма обучения; ресурсоемкость процесса обучения
Модели и методы на базе цепей Маркова	Простота моделирования; единообразие анализа и проектирования	Невозможность моделирования процессов с длинной памятью; узкая применимость моделей
Модели и методы на базе классификационно-регрессионных деревьев	Масштабируемость; быстрота и простота процесса обучения; возможность учитывать категориальные переменные	Неоднозначность алгоритма построения дерева; сложность вопроса останова
Примечание. Составлена авторами		

Методы

Сравнение методов прогнозирования рассматривается на примере цветочной продукции исследуемой организации. В настоящее время организация не использует модели прогнозирования, планирование поставок основывается на сведениях предшествующих кварталов и личного опыта. Недостатком такого подхода является возникновение ситуаций, требующих немедленного вмешательства и дополнительной корректировки, что служит причиной недопоставки и упущенной прибыли. Необходимо применение точного инструмента планирования поставок и прогнозирования продаж. В исследовании предлагается сравнить результаты моделирования (прогнозирования) на основе *модели Хольта–Уинтерса и модели ARIMA.*

Результаты

Конкурентным методом прогнозирования временных рядов является *модель Хольта–Уинтерса, или тройное экспоненциальное сглаживание*, которое применяется для процессов, имеющих тренд и сезонную составляющую по формуле (1)

$$Y(t) = (L(t) + T(t)) \times S(t), \quad (1)$$

где $L(t)$ — сглаженный уровень без учёта сезонной составляющей, формула (2); $T(t)$ — сглаженный тренд, формула (3); $S(t)$ — сезонная составляющая, формула (4); (t) — длина сезона исследуемого процесса.

$$L(t) = \frac{\alpha \times Y(t)}{S(t-1)} + (1-\alpha) \times (L(t-1) + T(t-1)), \quad (2)$$

$$T(t) = \beta \times ((L(t) - L(t-1)) + (1-\beta) \times \mathrm{T}(t-1), \quad (3)$$

$$S(t) = \frac{\gamma \times Y(t)}{L(t)} + (1-\gamma) \times S(t-S). \quad (4)$$

Для составления прогноза по модели Хольта—Уинтерса на 2022 год, необходимы данные по продажам за 2020 – 2021 года, представленные в таблице 2.

Таблица 2. Фактический объём продаж по артикулам, шт.

Год	Месяц	Фактический объём продаж по артикулам, шт.				
		3142	3132	3121	3128	3118
2020	1	1585	2328	1893	798	716
	2	2390	2731	2754	971	775
	3	5768	6141	4987	2729	2533
	4	2004	2939	1999	829	574
	5	2890	3188	3171	1648	1451
	6	1023	1837	1874	640	444
	7	1139	946	1932	606	360
	8	908	1553	1432	656	390
	9	4175	4514	2845	1911	1640
	10	1300	1681	1992	789	658
	11	1398	1727	1378	944	800
	12	3590	3300	3 628	1 719	1 683
2021	1	1489	1129	2008	745	831
	2	2250	2715	3123	1025	890
	3	5804	5932	5473	2783	2648
	4	1765	1290	2265	883	689
	5	3804	4875	4093	1702	1566
	6	1367	1483	2230	694	559
	7	980	900	2001	510	475
	8	1123	1597	2301	562	505
	9	4589	4234	5098	1965	1755
	10	1760	1340	2139	843	773
	11	2134	3459	2264	998	915
	12	3 776	4 375	4 663	1 773	1 854

Примечание. Составлена авторами

Произведем расчеты сглаженного уровня без учёта сезонной составляющей, сглаженного тренда, сезонной составляющей и прогноза на 2022 год на примере товара с артикулом 3142

$$L(t)=2568\ ((0{,}1\cdot 3776)/2419+(1-0{,}1)\cdot(2419+14));$$

$$T(t)=18\ (0{,}025*((2568-2419)+(1-0{,}025)\cdot 14;$$

$$S(t)=1{,}42\ ((0{,}9\cdot 3776)/2568+(1-0{,}9)\cdot 1$$ (для 2021 года);

$$Y(t)=1905\ (2568+18)\cdot 0{,}74.$$

Представим полученные результаты в виде графика на рисунке 1.

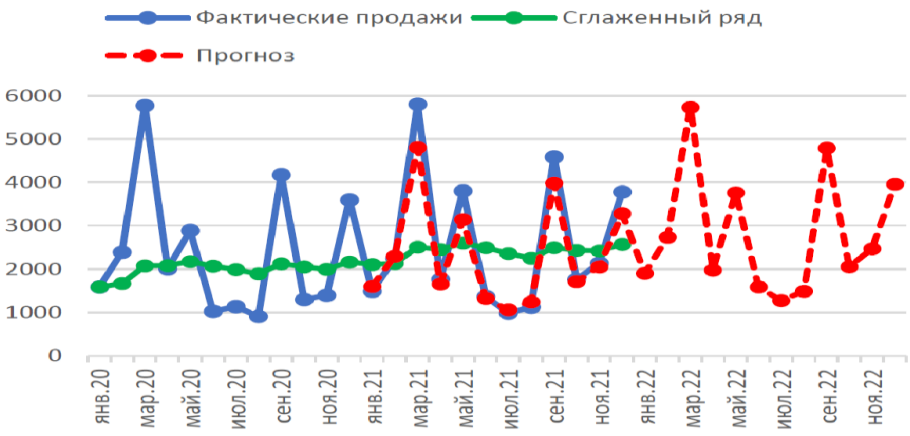


Рисунок 1. Фактические и прогнозные продажи для товара с артикулом 3142

По завершении прогноза составим таблицу показателей по всем рассматриваемым артикулам в таблицу 3.

Таблица 3. Прогноз объемов продаж по модели Хольта-Уинтерса

Год	Месяц	Прогноз объемов продаж по модели Хольта–Уинтерса, шт.				
		3142	3132	3121	3128	3118
2022	1	1905	1341	2790	754	1027
	2	2737	2913	4106	1079	1102
	3	5726	5505	6330	2542	2617
	4	1975	1478	2863	864	794
	5	3762	4521	4695	1472	1591
	6	1585	1630	2772	669	674
	7	1274	1168	2597	548	620
	8	1488	1956	3002	647	683
	9	4788	4562	5853	2011	1940
	10	2059	1740	2757	985	951
	11	2469	3988	2979	1212	1120
	12	3956	4728	5512	2038	2006

Примечание. Составлена авторами

Для оценки прогностических характеристик модели необходимо сравнить фактические и прогнозные значения. Произведем расчеты на примере товара с артикулом 3142 (см. табл. 4).

Расчет точности прогноза осуществляется по формуле $T = (1 - \mu\sigma) \times 100$, где $\mu\sigma$ — среднее отклонение. Расчет ошибки модели — $H = |Y - F|$, где H — ошибка; Y — прогноз по модели Хольта–Уинтерса; F — фактические показатели продаж.

Расчет отклонения ошибки прогнозной модели — $\sigma = H^2 / Y^2$, где σ — отклонение; Y — прогноз по модели Хольта–Уинтерса; H — ошибка модели.

Таблица 4. Оценка точности прогноза продаж товара с артикулом 3142 по модели Хольта–Уинтерса

Период	Фактические продажи, шт.	Прогноз по модели Хольта–Уинтерса, шт.	Ошибка, шт.	Отклонение ошибки прогнозной модели	Точность прогноза, %
01.2021	1489	1601	111,87	0,006	99,0
02.2021	2250	2297	47,19	0,000	
03.2021	5804	4800	1004,46	0,030	
04.2021	1765	1653	111,67	0,004	
05.2021	3804	3145	658,81	0,030	
06.2021	1367	1323	43,53	0,001	
07.2021	980	1063	82,89	0,007	
08.2021	1123	1239	116,20	0,011	
09.2021	4589	3983	605,58	0,017	
10.2021	1760	1711	49,04	0,001	
11.2021	2134	2049	84,85	0,002	
12.2021	3 776	3280	495,74	0,017	

Примечание. Составлена авторами

Таким образом, прогнозирование временных рядов с помощью модели Хольта–Уинтерса показывает достоверные результаты на 99 %. Значительные отклонения присутствуют у товара с артикулом 3128 в 96,6 %, в период с сентября по декабрь, изменение в меньшую сторону может привести к недополученной прибыли. Данная модель наиболее эффективна, чем прогноз продаж, основанный на личном опыте.

Для более обширного прогнозирования и дальнейшего сравнения, выполним анализ с посредством *модели ARIMA (интегрированная модель авторегрессии скользящего среднего).* Данная модель позволяет выполнять прогнозирование и выполнять анализ временных рядов. Авторами данной модели являются Дж. Бокс и Г. Дженкинсон. В модели заложена возможность идентификации, оценки и проверки различных данных.

Модель ARIMA позволяет отвязаться от тренда посредством перехода к разностям исходного ряда. Параметром, определяющим порядок разности, позволяющим перевести ряд в стационарный процесс, является параметр d. Также следует выделить параметры p и q (p — показатель, который помогает определить корректна ли гипотеза; d — порядок разности временного ряда и q).

Модель авторегрессии и проинтегрированного скользящего среднего считается адекватной, исходным данным в том случае, если остатки модели являются некоррелированными нормально распределёнными случайными величинами. Таким образом, сам ряд идентифицирован верно. В результате формируется модель с небольшим количеством оцениваемых параметров, легко реализуемая с использованием статистических программ.

Выполним прогноз на 2022 год по модели ARIMA также на примере товара с артикулом 3142.

Результаты оценки прогностических характеристик модели ARIMA сведены в таблицу 6.

Таблица 6. Оценка точности прогноза продаж товара с артикулом 3142 по модели ARIMA

Период	Фактические продажи, шт.	Прогноз по модели ARIMA, шт.	Ошибка	Отклонение ошибки модели от прогнозной модели	Точность прогноза, %
02.2020	2390	2286,71	103,29	0,002	95
03.2020	5768	5092,28	675,72	0,014	
04.2020	2004	2430,47	426,47	0,045	
05.2020	2890	3001,26	111,26	0,001	
06.2020	1023	1628,02	605,02	0,350	
07.2020	1139	1356,55	217,55	0,036	
08.2020	908	1268,82	360,82	0,158	
09.2020	4175	4114,34	60,66	0,000	
10.2020	1300	1425,86	125,86	0,009	
11.2020	1398	1677	279,00	0,040	
12.2020	3590	2947,64	642,36	0,032	
01.2021	1489	1758,73	269,73	0,033	
02.2021	2250	2307,98	57,98	0,001	
03.2021	5804	5735,24	68,76	0,000	
04.2021	1765	2153,37	388,37	0,048	
05.2021	3804	3002,87	801,13	0,044	
06.2021	1367	1982,01	615,01	0,202	
07.2021	980	1346,82	366,82	0,140	
08.2021	1123	906,91	216,09	0,037	
09.2021	4589	4426,6	162,40	0,001	
10.2021	1760	1668,34	91,66	0,003	
11.2021	2134	1869,91	264,09	0,015	
12.2021	3 776	4144,6	368,60	0,010	
Примечание. Составлена авторами					

Таким образом, ARIMA справляется с поставленной задачей, однако показывает более низкие значения точности (от 78 до 99,8%), по сравнению с моделью прогноза Хольта–Уинтерса. Значения фактических и прогнозируемых объемов продаж, а также уровень запасов представлен на рисунке 2.

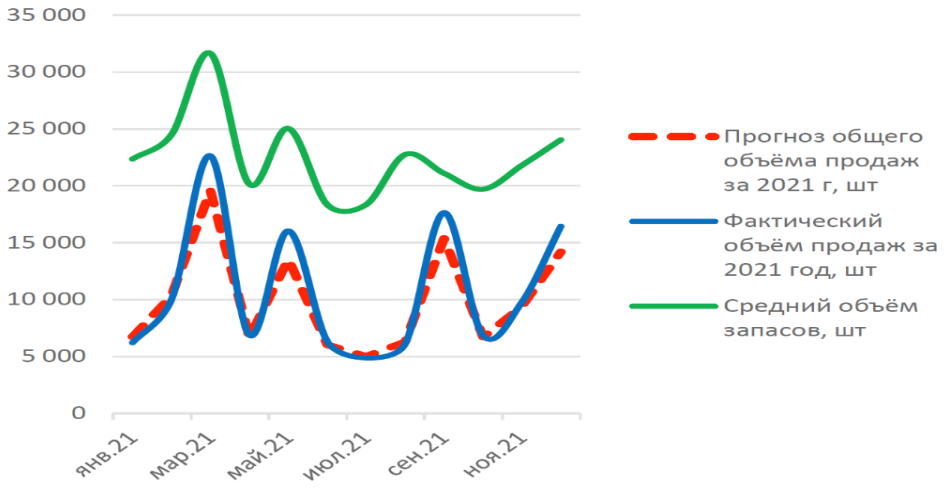


Рисунок 2. Фактические объемы продаж, прогноз продаж и количество запасов

Результаты прогнозирования используются для оценки эффекта от внедрения подхода точного прогнозирования поставок. Эффект достигается за счет снижения затрат на транспортировку, хранение, утилизацию нереализованных запасов.

Выводы

Прогнозирование и планирование бизнес-процессов являются главными критериями эффективной деятельности компании на рынке, что особенно важно во время санкционного давления, ограничения импорта, введения эмбарго на экспорт и транспортной блокады.

Составление качественного прогноза возможно с помощью модели Хольта–Уинтерса и ARIMA. Проанализировав данные организации, получена математическая модель сокращения затрат на хранение излишнего объема запасов. Экономический эффект положителен, эффективность составляет порядка 57 % от чистой прибыли по основным позициям цветочной продукции исследуемой организации.

Список литературы

Agatic, A. Advanced Data Analytics in Logistics Demand Forecasting / A. Agatic, E. Tijan, S. Hess, & T. P. Jugovic // 44th International Convention on Information, Communication and Electronic Technology. 2021. P. 1387-1392.

Armstrong, J. S. Forecasting for Marketing / J.S. Armstrong // Quantitative Methods in Marketing. London: International Thompson Business Press, 1999. P. 92–119.

Collantes-Duarte, J. Time Series Forecasting using ARIMA, Neural Networks and Neo Fuzzy Neurons / J. Collantes-Duarte, F. Rivas-Echeverriat // WSEAS International Conference on Neural Networks and Applications, Switzerland. — 2002. — 6 p.

Conejo, A. J. Day-Ahead Electricity Price Forecasting Using the Wavelet Transform and ARIMA Models / A. J. Conejo // IEEE transaction on power systems. — 2005. — Vol. 20, No. 2. — P. 1035 – 1042.

Kučera, T. The application of ABC analysis in the logistic warehousing processes / T. Kučera, A. Suk // Transport Means — Proceedings of the International Conference. — 2019. — P. 548-554.

Livieris, I. E. A CNN-LSTM model for gold price time-series forecasting / I. E. Livieris, E. Pintelas, P. Pintelas // Neural Comput & Applic. — 2020. — No 32. — P. 17351-17360.

Mohamad Helmi Ilman Fahmi. Best Products with TOPSIS Method and Sales Forecasting with Weighted Moving Average / Mohamad Helmi Ilman Fahmi, Imam Husni Al Amin // Journal of applied informatics and computing. — September 2020. — No 4(2). — P. 116-123.

Tarassow, A. Practical Empirical Research Using gretl and hansl / A. Tarassow // Australian Economic Review. — 2021. — No 52(2). — P. 255-271.

Анохина С. И. Роль финансового прогнозирования в деятельности предприятия / С. И. Анохина // Молодежь и XXI век. — 2022. — С. 44–47.

Антохонова И. В. А 726 Методы прогнозирования социально-экономических процессов: учеб. пос. / И. В. Антохонова. — Улан-Удэ: Изд-во ВСГТУ, 2004. — 212 с.

Белоусова М. А. Прогнозирование надежности технических систем на основе модели Хольта–Уинтерса / М. А. Белоусова // Процессы управления и устойчивость. — 2022. — Т. 9. — С. 393–397.

Вельдманом Н. Р. Обзор методов прогнозирования элементов временного ряда : сб. материалов X Междунар. науч.-практ. конф. «Развитие науки и практики в глобально меняющемся мире в условиях рисков»/ Н. Р. Вельдманом, Л. Ю. Емалетдинова. — 2022. — С. 114–119.

Казангапова Б. А. Применение математических методов прогнозирования для определения показателей запасов / Б. А. Казангапова, А. А. Ержан, А. А. Иванов // Вестн. Казах. акад. транспорта и коммуникаций им. М. Тынышпаева. — 2020. — № 1 (112). — С. 299–306.

Морозова И. А. Особенности метода АВС в управлении запасами: сб. материалов науч.-практ. конф. «Дни науки студентов Владимирского государственного университета имени Александра Григорьевича и Николая Григорьевича Столетовых» / И. А. Морозова. — 2022. — С. 2855–2860.

Орлова И. В. К вопросу об оценке качества эконометрических моделей / И. В. Орлова // Фундаментальные исследования. — 2022. — №3. — С. 92–99.

Янч Э. Прогнозирование научно-технического прогресса / Э. Янч. — М.: Прогресс, 1974.

Н.С. Лукашевич, Е.Р. Темиргалиев, Т.В. Баранова

Хольт-Уинтерс моделінің негізінде сатуды болжау

Аңдатпа

Мақсаты: Гүл өнімдерінің мысалын пайдалана отырып, тез бұзылатын тауарларды жеткізуді болжау үшін тренд және маусымдық құрамдас процестерде қолданылатын Холт-Уинтерс моделін сынау немесе үш еселік экспоненциалды тегістеу.

Әдісі: Холт-Уинтерс моделі, ARIMA моделі, экономикалық тиімділікті бағалау тәсілдері.

Қорытынды: Жеткізулерді болжау үшін модельдер мен әдістер сыналды, зерттелетін ұйымның нақты сатылымы туралы мәліметтер мысалында болжамды мәндерді есептеу жүргізілді. Холт-Уинтерс моделі мен ARIMA моделіне негізделген модельдеу (болжау) нәтижелерін салыстырмалы талдау Холт–Уинтерс моделімен уақыт қатарларын болжаудың 99% сенімді нәтижелері бар екенін көрсетті, ал ARIMA дәлдік мәндері төмен (78-ден 99,8% -ға дейін).

Тұжырымдама: Тауар ағындарын дәл жоспарлау және кәсіпорын қызметін тиімді логистикалық үйлестіру үшін Холт-Уинтерс және ARIMA моделін қолдана отырып сапалы болжам жасау әдісі ұсынылды. Зерттеу негізінде қорлардың артық көлемін сақтау шығындарын азайтудың математикалық моделі алынды, болжау модельдерін қолдану бойынша ұсынымдар ұсынылды, алынған болжамды мәндер нақты болжау әдістерін енгізудің әсерін бағалау үшін пайдаланылды. Гүл өнімдерінің мысалында тез бұзылатын тауарларды жеткізуді болжау үшін Холт–Уинтерс моделін пайдалану зерттелетін ұйым үшін гүл өнімдерінің негізгі позициялары бойынша таза пайданың шамамен 57%-на тең оң экономикалық әсер етеді, бұл сатылмаған қорларды тасымалдау, сақтау, кәдеге жарату шығындарын азайту арқылы қол жеткізіледі.

Кілт сөздер: болжау, экономикалық тиімділік, тауарлық-материалдық құндылықтар, Холт-Уинтерс моделі, ARIMA моделі.

N.S. Lukashevich, E.R. Temirgaliyev, T.V. Baranova

Sales projection based on model of Holt-Winters

Abstract

Object: approbation of the Holt-Winters model or triple exponential smoothing, used for processes with a trend and a seasonal component, to predict the supply of perishable goods on the example of flower products.

Methods: Holt-Winters model, ARIMA model, approaches to assessing economic efficiency.

Findings: models and methods for forecasting deliveries have been tested, and forecast values have been calculated using the example of data on actual sales of the organization under study. A comparative analysis of the results of modeling (forecasting) based on the Holt-Winters model and the ARIMA model showed that the prediction of time series using the Holt-Winters model has reliable results by 99%, ARIMA has lower accuracy values (from 78 to 99.8%).

*Conclusions: t*he methodology for making a qualitative forecast using the Holt-Winters and ARIMA models is proposed for accurate planning of commodity flows and effective logistics coordination of the company's activities. Based on the conducted research, a mathematical model was obtained for reducing the cost of storing excessive reserves, recommendations for the use of forecasting models were proposed and the obtained forecast values were used to assess the effect of the introduction of accurate forecasting methods. The use of the Holt-Winters model to predict the supply of perishable goods on the example of floral products has a positive economic effect for the organization under

study, equal to about 57% of net profit for the main items of floral products, which is achieved by reducing the cost of transportation, storage, disposal of unrealized stocks.

Keywords: forecasting, economic efficiency, stocks, Holt-Winters model, ARIMA model.

References

Agatic, A., Tijan, E., Hess, S., & Jugovic, T. P. (2021). Advanced Data Analytics in Logistics Demand Forecasting. *44th International Convention on Information, Communication and Electronic Technology*, 1387-1392.

Armstrong J. S. (1999). Forecasting for Marketing. *Quantitative Methods in Marketing*. London: International Thompson Business Press, 92–119.

Collantes-Duarte J. (2002). Rivas-Echeverriat F. Time Series Forecasting using ARIMA, Neural Networks and Neo Fuzzy Neurons. *WSEAS International Conference on Neural Networks and Applications*, Switzerland, 6 p.

Conejo A. J. (2005). Day-Ahead Electricity Price Forecasting Using the Wavelet Transform and ARIMA Models. *IEEE transaction on power systems, Vol. 20, No. 2,* 1035 – 1042.

Kučera, T., & Suk, A. (2019). The application of ABC analysis in the logistic warehousing processes. *Transport Means - Proceedings of the International Conference*, 548-554.

Livieris, I. E. (2020). A CNN-LSTM model for gold price time-series forecasting. *Neural Comput & Applic, No. 32*, 17351-17360.

Mohamad Helmi Ilman Fahmi, & Imam Husni Al Amin (2020). Best Products with TOPSIS Method and Sales Forecasting with Weighted Moving Average. *Journal of applied informatics and computing, No. 4(2)*, 116-123.

Tarassow, A. (2021). Practical Empirical Research Using gretl and hansl. *Australian Economic Review, No. 52(2)*, 255-271.

Anohina, S. I. (2022). *Rol finansovogo prognozirovaniia v deiatelnosti predpriiatiia [The role of financial forecasting in the activities of the enterprise]. Molodezh i XXI vek* — Youth and XXI century [in Russian].

Antohonova, I. V. (2004) *Metody prognozirovaniia sotsialno-ekonomicheskikh protsessov [Methods of forecasting of socio-economic processes]*. Ulan-Ude: Izdatelstvo Vostochno-Sibirskogo gosudarstvennogo universiteta tekhnologii i upravleniia — Publishing house of the East Siberian State University of Technology and Management [in Russian].

Belousova, M. A. (2022). Prognozirovanie nadezhnosti tekhnicheskikh sistem na osnove modeli Holta–Uintersa [Forecasting the reliability of technical systems based on the Holt-Winters model]. *Protsessy upravleniia i ustoichivost, 9*, 393–397 [in Russian].

Veldmanom, N. R. & Emaletdinova, L. Yu. (2022). *Obzor metodov prognozirovaniia elementov vremennogo riada [Review of methods for forecasting elements of the time series]*. Sbornik materialov X Mezhdunarodnoi nauchno-prakticheskoi konferentsii "Razvitie nauki i praktiki v globalno meniaiushchemsia mire v usloviiah riskov" [in Russian].

Kazangapova, B. A., Erzhan, A. A., & Ivanov, A. A. (2020) Primenenie matematicheskikh metodov prognozirovaniia dlia opredeleniia pokazatelei zapasov [Application of mathematical forecasting methods to determine the indicators of reserves]. *Vestnik Kazakhskoi akademii transporta i kommunikatsii imeni I. Tynyshpaeva — Bulletin of the Kazakh Academy of Transport and Communications named after M. Tynyshpaev, 1(112),* 299–306 [in Russian].

Morozova, I. A. (2022). Osobennosti metoda ABC v upravlenii zapasami [Features of the ABC method in inventory management]. *Sbornik materialov nauchno-prakticheskoi konferentsii «Dni nauki studentov Vladimirskogo gosudarstvennogo universiteta imeni Aleksandra Grigorevicha i Nikolaia Grigorevicha Stoletovykh» — Collection of materials of the scientific-practical conference "Days of science of students of Vladimir State University named after Alexander Grigorievich and Nikolai Grigorievich Stoletovs",* 2855–2860 [in Russian].

Orlova, I. V. (2022). *K voprosu ob otsenke kachestva ekonometricheskikh modelei [On the issue of assessing the quality of econometric models]*. Fundamentalnye issledovaniia — Basic Research, 3, 92–99 [in Russian].

Yanch, E. (1974). *Prognozirovanie nauchno-tekhnicheskogo progressa [Forecasting of scientific and technological progress]*. Moscow: Progress [in Russian].

DOI 10.31489/2022Ec4/180-187
JEL O42
УДК 33.713

А.Б. Мухамедханова[1*], Б.С. Құлбай[2], М.Р. Сергазиева[3]

[1, 2]Южно-Казахстанский университет имени М. Ауэзова, Шымкент, Казахстан;
[3]Шымкентский Университет, Шымкент, Казахстан
[1]dia-2808@mail.ru, 2bauka.ks@mail.ru, [3]vipforever@mail.ru

[1]https://orcid.org/0000-0003-2685-6125, [2]https://orcid.org/0000-0002-3638-5745
[3]https://orcid.org/0000-0001-6169-0189

Направления стратегического развития комплексов инновационных предпринимательских структур

Аннотация:

Цель: В статье рассмотрены направления стратегического развития комплексов инновационных предпринимательских структур, в связи с тем, что мы видим потребность в изучении и несовершенстве структур, а также возможности внедрения развития комплексов. При проведенном исследовании типологии стратегий и рассмотрении индикаторов, благодаря которым выявили проблематику данного исследования. Исходя из изложенного выше, достижение развития комплексов инновационных структур непосредственно взаимосвязаны с проблемами в исследовании.

Методы: В работе были использованы сравнительного анализа, рассчитаны относительные показатели, дедукция и метод визуализации данных исследования, метод экспертных оценок.

Результаты: Важным фактором, влияющим на направления стратегического развития страны, является инновационный потенциал, который представляет собой экосистему для стимулирования и поддержки инноваций. Для этого необходимы следующие условия: достаточные инвестиции в НИОКР; наличие высококачественных научно-исследовательских учреждений, которые могут генерировать знания, необходимые для создания новых технологий. По итогам проведенного анализа было выявлено, что полноценному развитию комплексов предпринимательских структур препятствуют такие факторы, как недостаток финансирования НИОКР и инновационной деятельности, малая доля инновационной активности среди компаний и низкое качество технологий. Рассмотрение индикаторов и типов стратегий имеющихся отечественных показателей в области инноваций выявило, что в отечественной статистике необходимо наладить учет по таким индикаторам, как развитие кластеров, качество исследовательских институтов, удовлетворение потребностей покупателей и цитируемые публикации.

Выводы: Для получения развития комплексов инновационных предпринимательских структур, необходимо развивать все направления и отрасли устойчивого развития предпринимательства. Существующие инновационные технологии в сфере предпринимательских структур недостаточно развиты, и для их дальнейшей кооперации существует необходимость структурных изменений, а также разработки программы по ее совершенствованию.

Ключевые слова: инновационное развитие, комплекс инноваций, стратегии развития, предпринимательские структуры, бизнес-процесс, потенциал, конкурентоспособность.

Введение

В последние годы, в условиях возникновения стабильной конкуренции на рынке, компании, для собственного развития, ищут новые пути, направления повышения эффективности бизнес-процессов, повышения производительности и, в конечном счете, повышения рентабельности производства. Бизнес-процессы компаний в условиях современного развития подвергаются цифровизации. В рамках концепции «Индустрия 4.0» малые и средние предприятия республики нацелены на реализацию мероприятий, прописанных в программе «Цифровой Казахстан». Повсеместное внедрение цифровизации во все сферы жизни современного человека становится объективной реальностью. Использование цифровизации на предприятии меняет как внешнюю среду организации с точки зрения условий взаимодействия с государством, поставщиками и покупателями, так и внутренние процессы, происходящие в компании, в частности, в области управления.

Цифровизация экономики Казахстана — это возможность занять лидирующие позиции на мировой арене, а также улучшить качество жизни граждан и создать благоприятные условия для развития предпринимательства. Эффективность бизнес-процессов достигается за счет внедрения и достижения цели в отношении повышения конкурентоспособности предприятий, и эта цель реализуется за счет

* Автор корреспондент. E-mail: *dia-2808@mail.ru*

совершенствования производства за счет внедрения цифровых технологий. По оценкам экспертов, более двух третей компаний республики заинтересованы в цифровизации своих предприятий, но в то же время, в большинстве случаев, они сталкиваются с нехваткой средств (ресурсов) для этого внедрения.

В современных условиях организациям следует смотреть на собственный бизнес с учетом подходов цифровой экономики. Нравится вам это или нет, но затраты на исследования, разработки, консультационные услуги и обучение сотрудников неизбежно возрастут в рамках цифровизации компании. Компании, которые не готовы к такому развитию событий, рано или поздно уйдут с рынка. С другой стороны, цифровизация не должна становиться самоцелью. Необходимо рассчитать эффективность тех или иных изменений, чтобы с уверенностью утверждать, что ключевые процессы на предприятии в результате внедрения цифровых технологий значительно улучшатся. Предложенный авторами алгоритм оценки эффективности моделирования предпринимательских структур компании в условиях цифровизации позволяет определить целесообразность стратегического развития комплекса инноваций в организации и принять меры по внедрению цифровых технологий.

В Республике Казахстан на современном этапе наблюдается положительная количественная динамика роста субъектов малого и среднего бизнеса.

Корпоративные основы малого и среднего бизнеса можно разграничить на организационные и экономические. К организационным основам относятся:

- общее количество субъектов малого и среднего бизнеса;

-удельный вес субъектов малого и среднего бизнеса в общем количестве субъектов рыночной экономики;

- количество субъектов малого и среднего бизнеса в разрезе областей (регионов) страны;

-количество субъектов малого и среднего бизнеса в разрезе организационно-правовых форм;

- количество занятых в сфере малого и среднего бизнеса;

- количество занятых в расчете на один субъект малого и среднего бизнеса.

- законодательство, ориентированное на развитие корпоративных основ предпринимательства и бизнеса.

К экономическим основам следует отнести:

- уровень экономической активности субъектов малого и среднего бизнеса;

- количественные показатели функционирования субъектов малого и среднего бизнеса в разрезе отраслей экономики;

- объемы производства продукции субъектами малого и среднего бизнеса в разрезе отраслей экономики.

- экономическая эффективность малого и среднего бизнеса.

Структурные изменения в экономике, цифровизация предпринимательских структур и усиление конкуренции на промышленных рынках требуют поиска новых стратегий развития и комплекса инновационного развития предпринимательских структур в Казахстане.

В течение последних 5 лет количество цифровых инноваций в мире начало расти в геометрической прогрессии. Они произвели революцию в подходах к организации бизнеса и создали новые возможности для повышения производительности труда и качества администрирования, увеличения скорости деловых взаимодействий, снижения транзакционных издержек и ускорения работы с информацией. Таким образом, за последние 5 лет было создано более 90 % мирового объема данных, объем бизнес-сетей и электронных коммуникаций между экономическими агентами увеличился на 40 %, и более 30% данных было размещено в электронных облачных сервисах. По данным консалтинговых структур McKinsey, к 2036 г. до 50 % всех рабочих процессов в мире будут автоматизированы. Несмотря на сильное влияние цифровых инструментов на развитие рынка, эксперты из авторитетной международной сети аудиторских и консалтинговых компаний

В PricewaterhouseCoopers отмечают, что главной задачей предприятий при внедрении цифровых инноваций является не столько переход на новые технологии и IT-решения, сколько кардинальное изменение стратегий и бизнес-моделей.

Авторы разделяют эту позицию и считают, что направления стратегического развития комплекса инновационных предпринимательских структур, работающих в бизнес среде, не должны ограничиваться технической цифровизацией процессов управления и производства, а должны предусматривать синхронную трансформацию всех ключевых элементов предприятий.

В связи с тем, что недостаточно исследованы возможности направлений стратегического разви-

тия в предпринимательских структурах Республики Казахстан, появляются существенные пробелы в организации инновационных комплексов в бизнес-среде.

Литературный обзор

Многие исследователи подтвердили роль инноваций и инновационной активности в повышении конкурентоспособности предприятий и государств. Однако, как отмечается во многих исследованиях, инновационная активность предприятий реального сектора в Казахстане по-прежнему очень низкая. Таким образом, по мнению исследователей, инновационное предпринимательство в Казахстане не определяет общий климат в малом бизнесе.

Инновационная деятельность в Казахстане сталкивается с рядом системных проблем, что подтверждается результатами ряда исследований. Недавние исследования показывают, что основной причиной незначительной инновационной активности предприятий в Казахстане является отсутствие финансирования НИОКР и инноваций. Это также подтверждается исследованиями. Небольшое количество инновационно заинтересованных компаний в Казахстане существенно ограничивает инновационную активность. Исследования инновационной деятельности находятся на стыке менеджмента, экономики, государственного управления, психологии, социологии и технических наук, поскольку вовлечение людей в этот процесс предполагает комплексную оценку взаимозависимых факторов, действующих на уровне государств, отраслей, регионов, предприятий, социальных групп и отдельных лиц. В связи с этим комплексная оценка и анализ инновационного потенциала на основе результатов статистики государственных органов и данных международных рейтинговых агентств являются сложной задачей, поскольку не существует единой методологии, которая учитывала бы все факторы соответствующего процесса. Таким образом, необходимо постоянно оценивать государственную политику в области инноваций и научно-технического развития, основываясь на анализе показателей статистики науки и инноваций, а также данных международных рейтинговых агентств, выявляя положительные и отрицательные факторы, влияющие на формирование экономики знаний.

Методы

В статье использованы официальные статистические данные Бюро национальной статистики Агентства стратегического планирования и реформ Республики Казахстан и результаты международных рейтингов, которые позволили провести детальный анализ направлений стратегического развития комплекса предпринимательских структур и сравнительный анализ между отечественными и зарубежными данными. С этой целью был проведен анализ ежегодных бюллетеней Бюро национальной статистики «Об инновационной активности предприятий в Республике Казахстан», а также основных показателей статистики инноваций и науки за 2017–2021 годы. Кроме того, был проведен анализ отчетов о глобальной конкурентоспособности Всемирного экономического форума и публикации ОЭСР. В исследовании использовались методы сбора, систематизации и анализа источников данных. Для выявления различий в показателях научной статистики применен метод сравнения.

Результаты и обсуждение

С точки зрения содержания и целей стратегия трансформации наиболее близка к стратегиям развития и роста, но у нее есть ряд важных отличительных элементов.

Стратегия институциональной трансформации является важным элементом механизма управления промышленным комплексом, который объединяет ключевые приоритеты, цели, мероприятия и проекты по его трансформации и развитию.

По мнению авторов, стратегия институциональной трансформации — это стратегия первого уровня в иерархии стратегий производственной организации. При определенных условиях стратегия трансформации может выступать в качестве общей стратегии, поскольку она предусматривает сбалансированное и прогрессивное изменение всех ключевых элементов, институтов и подсистем предприятия. Стратегии институциональных преобразований и стратегия развития промышленного комплекса должны быть синхронизированы и не противоречить друг другу. Основным инструментом обеспечения их согласованности, по-видимому, является формирование четкой иерархии стратегий предприятия с определением места стратегии трансформации в ней.

Основываясь на изучении теоретических, методологических и концептуальных аспектов трансформации организаций, авторы предлагают систему целей для стратегии институциональных преобразований промышленного комплекса. Изучение сущности, содержания, структуры, отличительных особенностей, места и роли стратегии институциональной трансформации позволяет нам проанали-

зировать ее вариации и построить соответствующую типологию.

Таблица 1. Общие и отличительные элементы стратегии институциональной трансформации, стратегии развития и стратегии роста

Тип стратегии	Сходства в содержании стратегий	Различия в содержании стратегий
Стратегия институциональной трансформации	1. Сосредоточьтесь на повышении долгосрочной конкурентоспособности предприятия. 2. Сосредоточьтесь на комплексном и сбалансированном развитии предприятия путем прогрессивной трансформации всех его элементов, систем и сфер. 3. Использование упреждающих мер, скорость изменений. 4. Сосредоточьтесь на внедрении инноваций, цифровых услуг и новых технологий 5. Сосредоточьтесь на адаптации компании к рынку и учете новых тенденций	1. Акцент на глубоких внутренних изменениях на предприятии. 2. Сосредоточьтесь на решении системных проблем и противоречий в модели функционирования компании. 3. Сосредоточьтесь на преобразовании институтов, культуры, управленческих технологий и способов организации персонала.
Стратегия развития		1. Акцент на укреплении внешних (рыночных) позиций компании. 2. Ориентация на использование новых возможностей
Стратегия роста		1. Акцент на повышении значений ключевых количественных показателей предприятия. 2. Ставка на расширение доли рынка, объемов производства и продаж продукции
Примечание. Составлено авторами на основе использованных источников.		

В рамках изучения сущности и содержания стратегии институциональной трансформации необходимо охарактеризовать ее цели. Традиционно цель определяется как желаемое состояние системы, которое планируется достигнуть в течение ограниченного периода времени.

Типология (от гр. *typos* — форма, отпечаток, образец) — это метод научного познания, который включает в себя декомпозицию набора объектов и их группировку с использованием обобщенной, идеализированной модели. Типология используется с целью сравнительного изучения существенных признаков, связей, функций, взаимосвязей, уровней организации и сосуществования объектов. Типология также является результатом типологического описания и сравнения объектов, элементов, явлений. Типологизация решает проблему структурирования, упорядоченного описания и объяснения систем.

Анализ существующих типологий показывает следующее. Проблемы и аспекты трансформации промышленных предприятий остаются мало изученными. Существует нехватка разумных классификаций стратегий институциональных преобразований производственных систем, особенно тех, которые действуют и развиваются в цифровой экономике. Таким образом, относительно всеобъемлющий взгляд на проблему систематизации и типологии стратегий глубоких изменений в экономических системах представлен в работах всего 10–15 отечественных и зарубежных авторов, в то время как большинство других академических материалов содержат лишь отдельные (часто противоречивые) разработки по изучаемой теме.

Рассмотренные типологии стратегий трансформации Л.Д. Гительмана, В.М. Полтеровича, Б.Е. Ратниковой и К. Торли представляют большой научный интерес, но они характеризуются рядом особенностей, которые не всегда позволяют эффективно использовать их для системной трансформации промышленных комплексов. Это связано с тем, что типы и разновидности стратегий, представленные этими авторами, в основном, сосредоточены на организационных и структурных реформах и не содержат подробного описания других важных аспектов трансформации (функциональных, процессных, цифровых, институциональных и др.). Кроме того, некоторые типологии применимы только к макроэкономическим системам (странам, национальным экономикам и т.д.) и не могут быть адаптированы к объектам меньшего масштаба, таким как промышленные комплексы и предприятия, без ущерба для их содержания.

Типологии, разработанные Р. Чинном, К. Бенном, Л. Перлином и К. Шулер, в основном, характеризуют стратегии, которые включают использование психологического, эмоционального и когнитивного потенциала персонала для преобразования производственных организаций, а также вовлечение персонала в процесс трансформации. По мнению авторов, эти типологии больше подходят для решения отдельных стратегических задач в области управления персоналом, чем могут быть использованы при проведении сложных институциональных изменений в промышленных комплексах, которые включают (помимо выполнения кадровых вопросов) реинжиниринг бизнес-процессов, оптимизацию организационных структуры, обновляющие состав функций, создание цифровых платформ, перегруппировку материальной инфраструктуры и реализацию многих других проектов.

В рамках решения этих проблем и разработки теоретических основ трансформации предприятий авторы предлагают следующую типологию стратегий институциональной трансформации промышленных комплексов.

Типология стратегий формируется на основе интеграции двух ключевых критериев:

- целевой и функциональной направленности стратегий. По мнению авторов, это основной критерий, поскольку он предусматривает выделение и классификацию стратегий преобразований, исходя из их первоначальной практической цели, для отраслевого развития предприятия или разрешения его фундаментальные проблемы;

- вызов рыночной стратегии. Этот критерий является дополнительным и характеризует стратегии с точки зрения сценариев положения на рынке и поведения, которые они формируют для промышленного комплекса.

Стратегия опережающих преобразований является наиболее перспективной для повышения конкурентоспособности и эффективности функционирования промышленных комплексов в долгосрочной перспективе. Она ориентирована на глубокую реструктуризацию бизнес-модели предприятия, предусматривающую обновление его стратегического видения, корпоративной культуры, алгоритма бизнес-процессов, состава функций и организационной структуры, также внедрение цифровых инноваций и повышение качества управления. Эту стратегию может выбрать промышленный комплекс, претендующий на лидерство в отрасли и стремящийся к лидерству в разработке новых технологий и использовании инновационных форм организации труда.

Стратегия разрешения конфликтов может быть использована для выполнения институциональных преобразований на промышленных предприятиях, которые имеют ряд фундаментальных проблем и дисбалансов в модели организации бизнес-процессов. Данная стратегия направлена на нивелирование внутренних системных противоречий в промышленном комплексе, а также на балансировку уровня развития взаимодействующих элементов.

Стратегия следования тренду основана на идее разумного консерватизма, которая предусматривает трансформацию предприятия путем внедрения проверенных решений и проектов. Но, с одной стороны, эта стратегия позволяет избежать рисков, типичных для компаний-первопроходцев. С другой — это дает возможность реализовать программу эффективных и проверенных инноваций в промышленном комплексе. Стратегия следования тренду может быть выбрана крупными производственными организациями и системами, занимающими прочные позиции в отрасли, работающими на стабильных рынках и стремящимися устранить риски серьезных управленческих ошибок. Основными приоритетными направлениями предлагаемых типов стратегий институциональных преобразований являются повышение качества управления, цифровизация бизнеса процессы, повышающие производительность труда, снижающие транзакционные издержки, формирующие эффективную инновационную культуру, а также промышленную и технологическую модернизацию.

Важным этапом в разработанном алгоритме является оценка моделирования предпринимательских структур организаций с точки зрения цифровизации. В основном, организации сферы услуг рассматривают предпринимательские структуры в контексте четырех отдельных категорий:

- разработка продуктов и услуг;
- формирование спроса;
- удовлетворение спроса;
- планирование и управление предприятием.

Мы сформулировали следующие показатели эффективности моделирования предпринимательских структур компании в условиях цифровизации.

Таблица 2. Показатели эффективности моделирования предпринимательских структур с позиции управления денежными активами

Название индикатора	Понятие индикатора	Расчет (формула с пояснением)
Степень участия денежных средств предпринимательских структур в совокупных оборотных активах организации (CU)	Показывает степень участия денежных средств компании в оборотном капитале в контексте реализации предпринимательских структур	CU = MA : CA; MA — средний остаток совокупных денежных активов, тыс. тенге; CA — средняя сумма оборотных активов организации, тыс. тенге
Средний период оборота и количество оборотов денежных средств предпринимательских структур за рассматриваемый период (TP)	Показывает степень оборачиваемости активов в контексте реализации бизнес-процессов	TR = MA : VEF ; VEF — однодневный объем расходования средств, тыс. тенге
Количество оборотов среднего остатка денежных средств за рассматриваемый период для предпринимательских структур (NT)	Показывает степень оборачиваемости среднего остатка денежных средств	NT = VEFt : MA; VEFt — общий объем расходования средств, тыс. тенге
Коэффициент рентабельности краткосрочных финансовых вложений в предпринимательских структурах (KRI)	Показывает степень рентабельности краткосрочных финансовых вложений для предпринимательских структур, то есть экономическую целесообразность их внедрения	KRI = P: KFI; P — сумма прибыли, полученной организацией от инвестиций, тыс. тенге
Планируемая сумма операционного баланса денежных активов предпринимательских структур (MA)	Показывает необходимость балансов денежных активов предпринимательских структур в контексте реализации бизнес-структур	MA = PV: NT; PV — планируемый объем отрицательного денежного потока, тыс. тенге; NT — количество оборотов среднего остатка денежных средств по плану
Примечание. Составлена авторами на основе использованных источников.		

С точки зрения эффективности показателей, представленных в таблице 2, их положительного развития и динамики (в сравнении с показателями отчетного периода), сделан окончательный вывод об эффективности и целесообразности моделирования предлагаемых комплексов инноваций предпринимательских структур в контексте цифровизации. При обратной динамике корректируется стратегия цифровизации.

Выводы

Таким образом, одним из первоочередных условий перехода Республики Казахстан к эффективному и устойчивому развитию экономики является достижение оптимального уровня устойчивости и сбалансированности ее областей. Наиболее важными предпосылками для этого являются потенциальная возможность инфраструктуры областей Казахстана для достижения продуктивного воспроизводственного процесса и обеспечения межобластного и межотраслевого баланса. Кроме того, обеспечение стратегического системного развития инфраструктурного комплекса учитывает низкий уровень развития инфраструктуры многих областей и неравномерность развития ее связей, а также сокращение финансирования инфраструктурных проектов отдельных видов инфраструктуры. Формирование оптимальных инфраструктурных условий для развития областей страны должно относиться к приоритетным векторам государственной экономической политики, которые реализуются в рамках обеспечения ресурсных возможностей конкретной области Казахстана.

Список литературы

Anderson, P. (1999). Perspective: Complexity theory and organization science. *Organization science, 10(3),* 216-232.

Aliyev, A. G. (2020). Some methodological problems of improving the effectiveness of the management of innovative enterprises. Management dynamics in the knowledge economy.

Ben, M. (2011). Foresight in Science and Technology. *Technology Analysis and Strategic Management, 2,* 139–168.

Becker, P. (2013). Corporate Foresight in Europe: A First Overview. Luxembourg: Office for official Publications of the European Communities, p. 25.

Browning, T. R. (2001). Applying the design structure matrix to system decomposition and integration problems: a

review and new directions. IEEE Transactions on Engineering management, 48(3), 292-306.
Bublyk, M. I., Petryshyn, N. Y., & Duliaba, N. I. (2018). Innovation structure of priority directions of development of Ukrainian higher education institutions. *Professional competency of modern specialist: means of formation, development and improvement*, 365-382.
Chaika, N. (2021). Formation of Development Strategy for Industrial Enterprise. *Quality-Access to Success, 22* (180).
Cuhls, K. (2014). Foresight with Delphi Surveys in Japan. *Technology Analysis and Strategic Management*, *13*, *4*, 555–569.
Illiashenko, S., Illiashenko, N., Shypulina, Y., Raiko, D., & Bozhkova, V. (2021). Approach to assessment of prerequisites for implementation of strategic directions of innovative development of industrial enterprises. *Eastern-European Journal of Enterprise Technologies, 3(13),* 111.
Innovation management (2017). *CIMA. Topic Gateway, 38*, 122.
Hobday, M. (2000). The project-based organisation: an ideal form for managing complex products and systems. *Research policy, 29(7-8),* 871-893.
Kreidych, I., Bielova, A., & Olijnyk, G. (2019). Forming the conditions of innovative development of enterprises in the transformation economy. *Baltic Journal of Economic Studies, 5(4),* 122-129.
Konnola T. (2019). Management of foresight portfolio: analysis of modular foresight projects at contract research organization. *Technology Analysis and Strategic Management, 21, 3,* 381– 405.
Mottaeva, A. B. (2016). Basic priorities of innovative development Russian regions. *International Journal of Applied Engineering Research, 11(9),* 6808-6816.
Orlova, V., Ilin, I., & Shirokova, S. (2018). Management of port industrial complex development: environmental and project dimensions. *In MATEC Web of Conferences, EDP Sciences,*193, 05055.
Sibirskaya, E., Yarnykh, E., Eldyaeva, N., Dubrova, T., & Oveshnikova, L. (2015). Strategy of systemic development of entrepreneurial infrastructure of regional economy.
Schwarz J. O. (2019). Business wargaming: developing foresight within a strategic simulation. *Technology Analysis and Strategic Management, 21, 3,* 291–305.
Tulchinskiy, R., Chobitok, V., Dergaliuk, M., Semenchuk, T., & Tarnovska, I. (2021). Strategic Guidelines for The Intensification of Regional Development Under the Impact of Potential-Forming Determinants in the Conditions of Digitalization. International Journal of Computer Science & Network Security, 21(8), 97-104.
Wolfe, R. A. (1994). Organizational innovation: Review, critique and suggested research directions. *Journal of management studies, 31(3),* 405-431.

А.Б. Мухамедханова, Б.С. Құлбай, М.Р. Сергазиева

Инновациялық кәсіпкерлік құрылымдардың кешендерін стратегиялық дамыту бағыттары

Аңдатпа:

Мақсаты: Мақалада инновациялық кәсіпкерлік құрылымдар кешендерінің стратегиялық даму бағыттары қарастырылған, өйткені біз құрылымдарды зерттеу мен жетілмегендіктің қажеттілігін, сондай-ақ кешендерді дамытуды енгізу мүмкіндіктерін көреміз. Стратегиялардың типологиясын зерттеу және индикаторларды қарау кезінде осы зерттеудің проблемалары анықталды. Жоғарыда айтылғандарға сүйене отырып, инновациялық құрылымдар кешендерінің дамуына қол жеткізу зерттеудегі проблемалармен тікелей байланысты.

Әдісі: Зерттеуде салыстырмалы талдау қолданылған, салыстырмалы көрсеткіштер, дедукция және зерттеу деректерін визуализациялау әдісі, сараптамалық бағалау әдісі есептелді.

Қорытынды: Елдің стратегиялық даму бағыттарына әсер ететін маңызды фактор инновацияларды ынталандыру және қолдау үшін экожүйе болып саналатын Инновациялық әлеует болып табылады. Ол үшін келесі шарттар қажет: ҒЗТКЖ-ға жеткілікті инвестициялар; жаңа технологияларды құру үшін қажетті білімді қалыптастыра алатын жоғары сапалы ғылыми-зерттеу мекемелерінің болуы. Жүргізілген талдау қорытындысы бойынша кәсіпкерлік құрылымдар кешендерінің толыққанды дамуына ҒЗТКЖ мен инновациялық қызметті қаржыландырудың болмауы, компаниялар арасындағы инновациялық белсенділіктің аз үлесі және технологиялардың сапасының төмендігі сияқты факторлар кедергі келтіретіні анықталды. Инновациялар саласындағы қолда бар отандық көрсеткіштердің индикаторлары мен стратегияларының түрлерін қарастыру отандық статистикада кластерлерді дамыту, зерттеу институттарының сапасы, сатып алушылардың қажеттіліктерін қанағаттандыру және дәйексөз басылымдары сияқты индикаторлар бойынша есепке алуды жолға қою қажеттігі анықталды.

Тұжырымдама: Инновациялық кәсіпкерлік құрылымдар кешенін дамыту үшін кәсіпкерліктің орнықты дамуының барлық бағыттары мен салаларын дамыту қажет. Кәсіпкерлік құрылымдар саласындағы қолданыстағы инновациялық технологтардың дамуы жеткіліксіз және оларды одан әрі кооперациялау үшін құрылымдық өзгерістер, сондай-ақ оны жетілдіру жөніндегі бағдарламаны әзірлеу қажеттілігі туындайды.

Кілт сөздер: инновациялық даму, инновациялар кешені, даму стратегиялары, кәсіпкерлік құрылымдар, бизнес-процесс, әлеует, бәсекеге қабілеттілік.

A.B. Mukhamedkhanova, B.S. Kulbay, M.R. Sergazieva

Directions of strategic development of complexes of innovative business structures

Abstract:

Object: the article discusses the directions of strategic development of complexes of innovative entrepreneurial structures, due to the fact that we see the need for the study and imperfection of structures, as well as the possibility of introducing the development of complexes. During the study of the typology of strategies and the consideration of indicators, thanks to which the problems of this study were identified. Based on the above, the achievement of the development of complexes of innovative structures is directly interrelated with the problems in the study.

Methods: comparative analysis was used in the study, relative indicators were calculated, deduction and the method of visualization of research data, the method of expert assessments.

Findings: an important factor influencing the directions of the country's strategic development is the innovation potential, which is an ecosystem for stimulating and supporting innovation. This requires the following conditions: sufficient investment in R&D; availability of high-quality research institutions that can generate the knowledge needed to create new technologies. According to the results of the analysis, it was revealed that the full-fledged development of complexes of entrepreneurial structures is hindered by such factors as a lack of funding for R&D and innovation, a small share of innovation activity among companies and poor quality of technologies. Consideration of indicators and types of strategies of available domestic indicators in the field of innovation revealed that it is necessary to establish accounting in domestic statistics for such indicators as cluster development, quality of research institutes, satisfaction of customers' needs and cited publications.

Conclusions: in order to obtain the development of complexes of innovative entrepreneurial structures, it is necessary to develop all areas and branches of sustainable entrepreneurship development. The existing innovative technologies in the field of business structures are not sufficiently developed and for their further cooperation, there is a need for structural changes, as well as the development of a program for its improvement.

Keywords: innovative development, complex of innovations, development strategies, business structures, business process, potential, competitiveness.

DOI 10.31489/2022Ec4/188-197
JELE69, J080
ӘОЖ 331.5

Р. Нуранова[1], С. Ибраимова[2], Д. Кангалакова[3*], Н. Батталов[4]

[1]Әл-Фараби атындағы Қазақ ұлттық университеті, Алматы, Қазақстан;
[2] Қазақ технология және бизнес университеті, Астана, Қазақстан;
[3]ҚР ҒЖБ ҒК Экономика институты, Қазақстан;
[4]Әл-Фараби атындағы Қазақ ұлттық университеті, Алматы, Қазақстан

raikhan71nuranova@gmail.com[1], saule_ibraimova_kz@mail.ru[2], dmuratbekovna@mail.ru[3], n.n.battalov@gmail.com [4]

https://orcid.org/0000-0002-5321-1165[1], https://orcid.org/0000-0001-6506-2446[2] https://orcid.org/0000-0001-8388-8559[3]

ЕЭО мемлекеттеріндегі жұмыспен қамтуды мемлекеттік қолдау мәселесін талдау

Аңдатпа

Мақсаты: Мақала ЕЭО-ға мүше мемлекеттердегі жұмыспен қамту жағдайын және Ресей, Қазақстан, Қырғызстан, Беларусь және Армениядағы жұмыспен қамту көрсеткіштері мен қолданыстағы жұмыспен қамту бағдарламаларын салыстырмалы және статистикалық талдау, мемлекеттік қолдау бағдарламаларын зерделеуге бағытталған.

Әдісі: Зерттеу барысында негізгі әдістер болып логикалық талдау, синтез, себеп-салдар тұжырымдамаларын жасау, индукция мен дедукция қолданылған.

Қорытынды: Зерттеу барысында 2019 жылғы жұмыспен қамту көрсеткіштері және ЕЭО елдеріндегі қолданыстағы мемлекеттік жұмыспен қамту бағдарламалары талданды. ЕЭО-ге мүше мемлекеттердің жұмыспен қамту бағдарламаларының мақсаттары, міндеттері мен жобалары өзара ұқсас екендігі анықталды. Қазақстан Республикасы мен Ресей Федерациясындағы жұмыспен қамту бағдарламалары Армения, Беларусь, Қырғызстан мемлекеттерінің бағдарламалары алдында артықшылыққа ие екені, атап айтқанда, қаржыландырудың көбірек екені және жұмыспен қамтудың неғұрлым ауқымды бағыттарын қамтитыны анықталды.

Тұжырымдама: Жұмыспен қамту — бұл халықтың жақсы өмір сүру деңгейінің кепілі және кедейліктің алдын алуды көздейді. Экономикалық белсенді халықты жұмыспен қамту және халық арасындағы жұмыссыздық деңгейін басқару мемлекеттік басқарудың басым бағыттарының бірі. ЕЭО-ға мүше мемлекеттерде жұмыспен қамту сапасын жақсарту үшін жұмыссыздар үшін кәсіптік даярлаумен, біліктілігін арттырумен, қайта даярлаумен және қоғамдық жұмыстармен, қосымша жұмыс орындарын құратын шағын және орта кәсіпкерлікті қолдаумен және дамытумен байланысты бірқатар іс-шаралар ұсынылады.

Кілт сөздер: жұмыспен қамту, ЕЭО мүше мемлекеттер, жұмыссыздық, нәтижелі жұмыспен қамту, жұмысбастылық, мемлекеттік бағдарлама, мемлекеттік саясат, экономикалық белсенді халық.

Кіріспе

Жұмыспен қамту мәселесі әрқашан өзекті, себебі, жұмыспен қамту, жұмысбастылық және жұмыссыздық деңгейіне қарап, мемлекеттегі экономикалық жағдайдың бір жақ қырын байқауға болады. Яғни, жұмыспен қамтылған халық үлесі жоғары мемлекеттерде өмір сүру деңгейі де жақсы. Жұмыссыздық деңгейі жоғары мемлекеттерде тұрғылықты халықтың өмір сүру деңгейі де қанағаттанарлық. Сол себепті, әр мемлекеттер жұмыспен қамту мәселесі басым бағыттардың біріне айналады. ЕЭО мүше мемлекеттерінде де жұмыспен қамтудың мемлекеттік бағдарламалары жұмыссыздық деңгейін төмендетуге және жұмыс орындарын генерациялауға бағытталады. Жұмыспен қамту мәселесін шешуге әрқашан мемлекеттің көмегімен жүзеге асады. Дегенмен, қазір жұмыспен қамтуға байланысты мемлекеттік саясат нәтижелі қызмет етеді деп айта алмаймыз. Нарықтық экономика халықтың жұмыспен қамтылуына жаңадан мүмкіндіктер берсе де, жұмыспен қамтудың сапасы пен еңбек ресурстарының экономикалық активті болып қалуына жаңадан амал-тәсілдерді үнемі жүзеге асырып отыруын қажет етеді. Жыл өте келе жұмыс орындары көбейген сайын, жұмыссыздар саны да арта түседі, себебі тұрғылықты халық саны да үнемі өсіп отырады. Оның барлығы еңбек миграциясының өсуіне алып келеді. Еңбек миграциясы артса, кей қалаларда немесе аймақтарда адам санының артуына алып келеді, тамақ, тұрғын-үй, су, энергия сияқты тұтыну заттарына сұраныс артады, тапшылық орын алады. Бұдан басқа мемлекеттерде жұмыспен қамтуға байланысты келесідей мәселелер кезігеді:

* Хат-хабарларға арналған автор. E-mail: *dmuratbekovna@mail.ru*

- экономикалық активті халық арасында жұмыссыздық деңгейі өседі;
- еңбек миграциясының орын алуы, мамандардың интеллектуалды және кәсіби деңгейі төмендейді;
- еңбек нарығындағы еңбек күшіне деген сұраныс пен ұсыныстың диспропорциясы;
- көлеңкелі экономиканың орын алуы, формальды емес жұмыссыздық деңгейі өседі;
- жұмыс берушілер өзіне кадрларды даярлауда және кәсіби деңгейін жоғарылатуда белсенділік танытпайды;
- шынайы жұмыссыздық деңгейінің белгісіздігі;
- еңбек нарығын болжау жүйесінің жетілмегендігі;
- жұмыссыздықты төмендетуге бағытталған қаржылай көмектің жеткіліксіздігі.

Мақаладағы талдау барысында анықталатын зерттеудің гипотезасы:

$Г_0$-мемлекеттің жұмыспен қамту бағдарламасының тиімділігі және әртараптылығы халық санының санына байланысты емес;

$Г_1$-мемлекет халық саны жоғары болған сайын мемлекеттік жұмыспен қамту бағдарламасы тиімді болады.

Әдебиеттерге шолу

Жұмыспен қамтуға қатысты зерттеу жұмыстары көп жасалынған. Оның ішінде, жұмыссыздық, жұмыспен қамту бағдарламаларының тиімділігі, олардың мақсатты индикаторларына қатысты жұмыстар жеткілікті. Дегенмен, еңбек нарығын зерттеуде үлкен үлес қосқан ғалымдарды (Гобсон, 2011; Рассел, Кона, 2012; Буланов, 2014; Руденко, Муртозаев, 2014; Яковлева, 2016) атап өтуімізге болады. ЕЭО мүше мемлекеттердегі еңбек нарығында пайда болған мәселелер де зерттелген еңбектерді де қарастырдық (Орозонова, Мырзабаева, 2019). Сонымен қатар ЕЭО мүше мемлекеттердегі еңбек нарығының ағымдағы жағдайының жұмыстары мен еңбек ету шарттарының ерекшелігіне де тоқталдық (Сардарян, Петроченко, 2018; Кузмина, 2017). ЕЭО мүше мемлекеттерінің ортақ еңбек нарығын құрауға ынталары бар екендігі (Сутырин, 2017) және ЕЭО мүше мемлекеттеріндегі жұмыспен қамтудың ерекшеліктері көрсетілген зерттеулер пайдаланылды (Самосейко, 2015). Бұдан басқа, әр жыл сайын ЕЭО мүше мемлекеттерінің комиссиясы еңбек нарығындағы өзгерістерге байланысты жылдық есеп дайындалады (ЕЭО мүше мемлекеттерінің комиссия есебі, 2019). ЕЭО мүше мемлекеттердегі экономикалық қауіпсіздік (Пак, Ушакова, Борисова, 2020) зерттелінсе, бұдан басқа және Беларусь мемлекетіндегі кәсіпкерлікті қолдау арқылы еңбек нарығындағы тиімділік қарастырылған (Морозова, 2021), Қазақстандағы еңбек нарығының жағдайы мен ерекшеліктері де зерттелінген (Құрманбеков, 2019). Ауылды мекендердегі еңбекпен қамтуды мемлекеттік бағдарламамен қамту тұрғысынан Ресейдің жүргізген зерттеу жұмыстары бар (Шагайда, 2020; Бизин, 2018).

Қазір шетелді ғылыми журналдарда жұмыспен қамтудың ең маңызды қайнар көзі кәсіпкерлік ретінде қарастырады және соған қатысты зерттеу жұмыстары жеткілікті. Оның ішінде кәсіпкерлік жаңа жұмыс орындарын жасауға ықпал етеді (Blattman & Ralston, 2015; Stawicka &Parlińska, 2021), Қытайдағы қалаларда бизнестің дамуы жұмыссыздықты азайтады (Chen & Hu, 2021). Ал ауылдық аймақтардағы әйел адамдардың бизнеспен айналысуы олардың әлеуметтік-экономикалық жағдайын жақсартуына әсері бар (Pecenco & Schmidt-Padilla, 2020) және басқа да кәсіпкерліктің еңбек нарығына тиімділігі жайлы зерттеу жұмыстары бар.

Әдіснама

Зерттеу барысында экономика ғылымының фундаменталды әдістері логикалық талдау, статистикалық саралау және индукция мен дедукция әдістері қолданылды. Зерттеу жұмысының әдістері жүйелі түрде қолданылып, логикалық қорытындылар жасалынды. Авторлардың ойынша, мемлекеттік бағдарламалардың нәтижелілігін талдауда тек болашақта қойылған индикаторларға жету арқылы мемлекеттік бағдарламаның тиімділігін анықтау толық мәселені көрсетпейді. Жұмыспен қамтуға байланысты мемлекеттік бағдарламалар іске асып, мақсатты жоспарланған индикаторларға қол жеткізілгенмен, болашақта сапалы нәтиже бұрыс болуы мүмкін. Сол себепті, зерттеу барысында талданылған ЕЭО мүше мемлекеттердің жұмыспен қамту бағдарламалары бойынша логикалық тұжырымдар негізгі әдістемелік тәсілдерді құрайды. Бұдан басқа, жалпыға мәлім салыстырмалы талдау әдісі қолданылды. ЕЭО мүше мемлекеттердегі жұмыспен қамту бағдарламалары өзара салыстырылды. Мақаланың статистикалық базасы ЕЭО мүше мемлекеттер комиссиясының жылдық есебі және ресми статистикалық органдар мәліметтері құрады.

Талдау

а) ЕЭО мүше мемлекеттеріндегі жұмыспен қамту мәселесінің ағымдағы жағдайына талдау

ЕЭО мүшелерінде бірыңғай еңбек ресурстарының нарығын құру әрқашан өзекті. Одаққа мүше болған мемлекеттерде жұмысбастылыққа қатысты ұлттық мемлекеттік бағдарламалары бар. Дегенмен, бес мемлекет арасында еңбек кадрларымен де алмасуға жол берілген. Еңбек нарығындағы сұранысқа байланысты еңбек агенті өзіне қажетті маманды жұмысқа ала алады.

Соңғы жылдары ЕЭО мүше мемлекеттерде жұмыспен қамту мәселесі күрделі мәселе болып отыр. 2019 жылы басталған COVID-19 пандемиясы бүкіл әлемдегі карантиндік жағдайдың орнығуына себеп болды. Карантиндік шаралар өзіндік изоляцияны қажет етті. Соның салдарынан ШОБ субъектілерінің көбі карантиндік шаралар қыспағына шыдай алмай, банкроттыққа ұшырап жабылып жатты. Мемлекет тарапынан қолдау шаралары да ШОБ субъектілерінің жойылуын тоқтата алмады. Оның барлығы мемлекеттегі экономикалық еңбек күшінің санын азайтты. Жұмыссыздық деңгейі өсті.

Жеке мемлекеттерге тоқталсақ, Евразиялық экономикалық комиссияның 2020 жыл соңындағы 2019 жылға берген еңбек нарығының есебінде, 2019 жылы Қазақстанда 9221,5 мың адам еңбек күші тіркелді. Оның 8780,8 мың адам жұмыс басты болса, 440,7 мың адам жұмыссыз (15-64 жас аралығында). Соның ішінде еңбекпен айналысу сферасы бойынша, 8780,8 мың адамның 66,8% қызмет көрсетуде, 13,5%(1185,4 мың адам) ауыл, орман, балық шаруашылығында болса, 12,5 % (1097,6 мың адам) өндірісте және 7,2 % құрылыс саласында тіркелген. Яғни, ең көбі 66,8 % немесе 5865,5 мың адам қызмет көрсету саласында жұмыс жасайды. Еңбекақы бойынша Қазақстанда 2019 жылы орта есеппен алғанда ерлер 582 доллар алса, әйел адамдар 394 доллар алған, жұмыспен қамтылғандардың орта есеппен алғандағы еңбекақысы 488 долларды құрайды. Жоғары жалақы 1086 доллар көлемінде кен өндіру өнеркәсібі және карьерлерді қазу жұмыскерлері алатын болса, ең аз жалақыны 302 доллар көлемінде ауыл, орман, балық шаруашылығында істейтін жұмыскерлер алған. 2019 жылы жұмыссыздық деңгейі 4,8 % құрады, оның ішінде 25-59 жас аралығындағы адам саны көп.

2019 жылы Армения Республикасында жұмыс күші 1318,1 мың адамды құраған. Оның құрамында 1077,4 мың адам жұмысбасты болса, 240,7 мың адам жұмыссыз болды. Оның ішінде еңбекпен айналысу сферасы бойынша, 1318,1 мың адамның 55,3% қызмет көрсетуде (728 мың), 21,95% (289,3 мың адам) ауыл, орман, балық шаруашылығында болса, 13,8 % (181,8 мың адам) өндірісте және 9 % (118,6 мың адам) құрылыс саласында тіркелген. Орташа еңбекақы мөлшері бойынша республика бойынша орташа еңбекақы мөлшері 380 долларды құраған. Ер адамдардың орташа еңбекақысы 463 доллар болса, әйел адамдардікі 302 доллар болды. Жалақы мөлшері жоғары сала болып кен өндіру өнеркәсібі және карьерлерді қазу 992 доллар болса, ең аз төлейтін сала 206 долларды құрап, яғни өмір сүру және тамақ бойынша қызмет көрсету саласы болып танылады. 2019 жылы Армения Республикасында жұмыссыздық деңгейі 18,3 % болып, 240,7 мың адамды құрады.

Беларусь Республикасында еңбек күшінің 2019 жылғы мөлшері 5122,4 мың адамды құрады. Оның ішінде 4909,1 мың жұмыс басты болса, 213,3 мың адамы жұмыссыз. Еңбек ету саласына байланысты 4909,1 мың адамның 62,1 % қызмет ету саласында, 8,7 % ауыл, орман, балық шаруашылығында болса, 23,7 % мен 6,4 % өндіріс пен құрылыс салаларына тиесілі. Яғни, ең көп жұмыспен қамту саласы қызмет көрсету саласы болып отыр. Беларусь Республикасында орташа еңбекақы мөлшері 523 долларды құрайды. Гендерлік ерекшелуіне байланысты, 2019 жылы орташа есеппен алғанда ерлер 669 доллар алса, әйел адамдар 489 доллар алды. ЕЭО мүше мемлекеттеріне қарағанда Беларусь Республикасындағы жұмыссыздық мөлшері 4,2 % құрайды. Жұмыссыздардың ең көп саны 30-54 жас аралығындағы азаматтар болды.

Қырғызстанда еңбек күші 2583,6 мың адамды құраса, оның ішінде 2442,7 адам жұмыспен қамтылған, қалған 140,9 мың адам жұмыссыз болып саналады. 2019 жылдың статистикасына сай, Қырғызстанда 2583,6 мың адамның 55,2% қызмет көрсету саласында жұмыс жасаса, 18,1% ауыл, орман, балық шаруашылығында қызмет жасайды. Басқа мемлекеттердегідей, өндіріс саласы мен құрылыста қызмет ететін жұмыскерлер саны сәйкесінше 14,9% және 11,8% аз мөлшерді құрайды. Орташа номиналды жалақы көлемін қарастырсақ, Қырғызстанда оның шамасы 247 доллар құрайды, ерлер арасында 268 доллар болса, әйелдер арасында 207 доллар болды. Экономика салаларында ең жоғары жалақыны қаржы және сақтандырумен айналысатын сала қызметкерлері орта есеппен 511 доллар алады. Ал ең аз мөлшердегі жалақыны өнер, демалыс, ойын-сауық саласындағы қызметкер алады. Жұмыссыздық деңгейі 2019 жылы 5,5 % құрап, 140,9 мың адамды қамтыды.

2019 жылы Ресейде жұмыс күші 75397,9 мың адамды құрап, оның ішінде 71933,1 мың адам жұмыспен қамтылса, 3464,8 мың адам жұмыссыз болып ресми тіркелді. Жұмысбасты халықтың эконо-

микалық салаларға байланысты, 75397,9 мың адамның 67,4 % қызмет ету саласында жұмыс жасаса, 19,9 % өндіріс саласында қызмет етеді. Ал 5,8% және 6,9 % мөлшерді құрайтын жұмыспен қамту салалары орман, ауыл, балық шаруашылығы мен құрылыс салаларын қамтиды. Орташа айлық жалақы мөлшері 2019 жылы 740 долларды құрады. Оның ішінде, ерлердің орташа айлық жалақы мөлшері 927 доллар болса, әйелдердікі 641 доллар. Жоғары орташа айлық жалақыны қаржы және сақтандыру саласында 1602 доллар көлемінде алса, ең төмен орташа айлық жалақы 436 доллар өмір сүру және тамақтаны саласына тиесілі. 2019 жылы жұмыссыздық мөлшері 4,6 % болып, 3464,8 мың адамды құрады.

Қорытындылай келе, экономикалық активті халқы мөлшері мен жұмыссыздық мөлшері бойынша Ресей Федерациясы басқа мемлекеттерге қарағанда жоғары көрсеткішке ие. Ерлер және әйелдер алатын орта есеппен есептелген жалақы бойынша да Ресейде қызмет ететін адамдар жалақысы жоғары. Барлық мемлекеттерде экономикалық белсенді халық сауда немесе қызмет көрсету саласында қызмет жасайды. Өндіріс саласында қызмет ететін адамдар саны аз, бұл дегеніміз өндірістің даму деңгейінің бәсең болуында. Әрине, өндірісте қызмет ететін халық табысы жоғары болғанымен, әлемдік нарықта бәсекеге түсетін өндіріс ЕЭО мүше мемлекеттерінде тапшы. Жалпы, ЕЭО мүше мемлекеттерінің жұмыспен қамту мәселесі әр түрлі, сол себепті мүше мемлекеттердегі жұмыспен қамтуға байланысты мемлекеттік қолдау бағдарламалары талданады.

б) ЕЭО мүше мемлекеттердегі жұмыспен қамтуға қатысты мемлекеттік бағдарламаларға талдау нәтижесі

1-кестеде көрсетілгендей, ЕЭО мүше мемлекеттердің жұмыспен қамтуға байланысты қолданыста бар бағдарламаларына талдау берілген.

Қазақстанда жұмысбастылыққа қатысты «Еңбек» бағдарламасы бойынша тұрғылықты халықты нәтижелі жұмыспен қамтуды кәсіпкерлік арқылы жүзеге асыру мақсат болып табылады. Жалпы кәсіпкерлік орта тапты құрайды. Қазақстанда орта тап үлесі аз, кедей тап үлесі жоғары. Сол себепті, кәсіпкерлікті дамыта отырып, орта тап үлесін арттыру соңғы ҚР Президенті Қ-Ж. Тоқаевтың халыққа арналған үндеуінде айтылған болатын. Кәсіпкерлік дамитын болса, халық жұмыспен қамтылады. Жұмыспен қамтылған халықтың өмір сүру деңгейі жоғарылайды. Мемлекеттік бағдарламада ресми жұмыссыздықты төмендетумен бірге біраз шаралар кәсіпкердіктің дамуына бағытталған. Жаппай халықты, оның ішінде әсіресе жастарды кәсіпкерлікке баулы, оның аясында «Жастар — ел тірегі», «Мәңгілік ел жастары — индустрияға!» («Серпін») жобалар жасалынды. Соңғы ҚР Президентінің үндеуінде техникалық мамандығы бар азаматтарды жұмыспен қамту ерекше орын алсын деп айтылды. ҚР шикізат өнімін көп шығарғанымен, оны өндейтін және дайын өнім шығаратын өндірістің қалыптасуы қажеттігі және ондағы кәсіби мамандардың тапшылығы орын алып отыр. Сол себепті, кәсіби техникалық бағытта мамандарды даярлау басым бағыттардың бірі болып отыр.

2021 жылғы мәліметтерге сай халық саны 145,4 млн адамды қамтитын Ресей Федерациясында жұмыссыздар саны 1,2 млн адам құрайды. 2014 жылы «2014-2024 жылдарға арналған Халықты жұмыспен қамтуға жәрдемдесу» атты жұмыссыздық деңгейін төмендететін, жұмыс орындарын құрауға қатысты мемлекеттік бағдарлама жасалынған. 2022 жылдағы әлемдік экономикалық нарықтағы шиеленіске байланысты өзгерістер енгізілді. Мемлекеттік бағдарламаның бюджеттік қоры 14,7 млрд долларды құрайды. Мемлекеттік бағдарламаның екі басты мақсаты бар, біріншісі — 2030 жылға дейін тіркелетін ресми жұмыссыздық деңгейі 1% жоғары болмау. Мемлекеттік бағдарламаның тиімділігін көрсететін көрсеткіш 2024 жылы тіркелген ресми жұмыссыздық деңгейі екі есе төмен болу керек, яғни ол шамамен 2-3% аралығында. Бірінші мақсатқа жету барысында әртүрлі міндеттер қойылған, ол міндеттерді жүзеге асыру үшін федералдық жобалар жоспарланған, яғни жұмыспен қамтудың бағыттары анықталған. Жұмыспен қамтуды жүзеге асыру «Демография» федералдық жоба, «Цифрлі мемлекеттік басқару» және «РФ цифрлі экономикасы» сияқты федералдық жобалар аясында жүзеге асады. Оның ішінде, мысалы «Демография» федералдық жобада жұмыспен қамту органдарында жұмыссыз деп танылатын 50 жасқа дейінгі азаматтар, мектепке дейінгі жасқа дейін, бірақ жұмыс ету шарты жоқ декреттік демалыста отырған әйел адамдар, 3 жасқа дейін декреттік демалыста отырған әйел адамдарды кәсіби мамандыққа және қосымша мамандыққа оқыту сияқты шаралар жүргізіледі. Ал «Цифрлі экономика» федералдық жоба аясында жұмыспен қамту және жұмысбастылыққа қатысты қызметтерді электронды түрде сапалы жүзеге асыру шаралары кіреді. Яғни, жұмыспен қамтуға қатысты қайта кәсіби мамандыққа оқыту және жұмысқа тұру үшін ұйымдастырылған мемлекеттік

органның қызметін оңтайландыру жұмыстары мемлекеттік бағдарламаның бірінші мақсатын жүзеге асыруды көздейді. Яғни, халық жұмысбастылығының флагмандық орталығын құру көзделеді.

Екіншісі, қауіпсіз еңбек мәдениетін қалыптастыру және еңбек ету барысында қауіпсіздікті қамтамасыз ету шаралардың тиімділігін арттыру. Бағдарлама тиімділігін көрсететін көрсеткіштер ретінде «бір және одан да көп жұмыс күніне еңбекке қабілеттілігінен айрылған және өліммен аяқталған зардап шеккендердің саны» және «өліммен аяқталған өндірістегі жазатайым оқиғалар кезінде зардап шеккендердің саны» алынады. Яғни, 2030 жылға дейін бір және одан да көп жұмыс күніне еңбекке қабілеттілігінен айрылған және өліммен аяқталған зардап шеккендердің санын 892 дейін жеткізу, ал өліммен аяқталған өндірістегі жазатайым оқиғалар кезінде зардап шеккендердің санын 17500 жеткізу. 2018 жылы өліммен аяқталған өндірістегі жазатайым оқиғалар кезінде зардап шеккендердің саны 23,6 мың адам болған және бір және одан да көп жұмыс күніне еңбекке қабілеттілігінен айрылған және өліммен аяқталған зардап шеккендердің саны 1200 адамды құрады.

Қырғызстанда 2021 жылғы санақ бойынша 6,7 млн адам тіркелген, оның 76,5 мың адамы ресми жұмыссыз. 2014 жылы 2020 жылға дейін жоспарланған стратегиялық бағдарламаның аты — «Халықты жұмыспен қамтуға жәрдемдесу және ішкі және сыртқы еңбек көші-қонын реттеу». Бағдарламаның бюджеттік қоры 18,6 млн долларды қамтиды. Бағдарламаның мақсаты — жұмысқа қабілетті тұрғындарды сапалы жұмыс орнымен қамтамасыз ету, еңбек ресурстарын рационалды пайдалану мен шетелде жүрген қандастардың еңбек құқығын қорғау. Қырғызстандағы мемлекеттік бағдарламаның назар аударған басты бағыттарын еңбек ресурстарының сапасы мен бәсекеқабілеттігін арттыру, салалардағы еңбек күшіне деген сұраныс пен ұсынысты зерттеу, болжау, шетелде жұмыс жасағысы келетін азаматтардың құқықтарын қорғау қамтиды. Көрші Орта Азия мемлекеттеріне қарағанда еңбек нарығында жағдай нашар. Барлығымызға мәлім қырғыз азаматтарының шетелде жұмысқа орналасу жағдайлары жиі орын алады. Оған себеп болған мәселе, мемлекеттегі әлеуметтік-экономикалық және саяси жағдайдың құбылмалығы. Яғни, Қырғызстандағы әлеуметтік-экономикалық жағдай дамитын болса, еңбек нарығындағы жағдайдың жақсаруына әкеледі, еңбек миграциясын азайтады. Мемлекеттік бағдарлама аясында келесідей нәтижелерге қол жеткізу көзделеді: ресми жұмыссыздық деңгейін 2%, жалпы жұмыссыздық деңгейін 8% түсіру, еңбек миграция үлесін азайту, жұмыс орындарын қамту және қайта кәсіби даярлықтан өткен мамандардың 70% міндетті жұмыспен қамту.

Беларусьтағы жұмыспен қамтуға қатысты бағдарламаның мақсаты тұрғылықты халық арасында жұмыссыз жүрген азаматтарды жұмыспен қамтуға жәрдемдесу болып табылады. Бұл мақсатқа жету үшін келесідей міндеттер қойылады: әлеуметтік кепіл беру арқылы және мемлекеттік қолдау арқылы шаралар ұйымдастыру, экономикалық активті емес халықты жұмыспен қамтуға ынталандыру, еңбек нарығындағы ұсыныс пен сұраныстың балансын ұстау, еңбек шарттарын тиімділеу және еңбекті қорғау. Яғни, декректте отырған аналарға, мүгедек және денсаулығына байланысты кем адамдарды еңбек қатынастарына араластыру, жұмыспен қамту шараларын ұйымдастыру жұмыстарын жүзеге асырады. Бұдан басқа, аймақтардағы жұмыс орындары бар туралы мәліметтерді бәріне беру платформасын ұйымдастыру.

Арменияда жұмыспен қамтуға байланысты 2019 жылы стратегиялық жоба «Армения, жұмыс жаса!» (Newsarmenia, 2021) қабылданған болатын. Бұл стратегиялық бастаманың мақсаты — Арменияда жұмыссыздықты төмендету және жұмыссыз жүрген халықты жұмыспен қамту. ЕЭО мүше мемлекеттері ішінде Арменияда ең жоғары жұмыссыздық мөлшері. Бұдан басқа, ЕЭО мүше мемлекеттердің еңбек нарығында армяндықтар үлесі жоғары. Яғни мемлекетте орныққан жұмыссыздыққа байланысты, жұмыссыз жүрген халық Ресейде, немесе өзге шетелде жұмыс жасауға мақсат етеді. Жұмыссыздар ішінде үлкен үлесті 15-35 жас аралығындағы азаматтар қамтиды. «Армения, жұмыс жаса» жобасы тұрғылықты халық арасында адами капиталды дамытуға, жұмыспен қамтуды ынталандыруға және олардың көмегімен халықтың өмір сүру деңгейін арттыруға бағытталған. Жұмыспен қамтуды ынталандыруда жұмыс берушілер мен жұмысқа тұрушылар арасында байланысты орнықтыру, жас мамандарды дайындауда жұмыс берушілердің сұранысына байланысты икемдеу көзделеді. Бұл жобаның бағыттарының бірі жас мамандарды қайта әскери даярлаудан өткізіп, әскер қатарына енгізу болып табылады.

1-кесте. ЕЭО мүше мемлекеттердегі жұмыспен қамту көрсеткіштері мен бағдарламалары

ЕЭО мүше мемлекеттер	Халық саны 2021 жыл	Жұмыссыздар саны, 2021 жыл	Жұмыспен қамтудың мемлекеттік бағдарламасы	Мемлекеттік бағдарлама мақсаты	Объем бюджета	Бюджет көлемі, доллар
Ресей Федерациясы	145,4 млн	1,2 млн	"Халықты жұмыспен қамтуға жәрдемдесу" 2014-2024 жылғы бағдарлама (2022 жылғы өзгерістер)	Бағдарламаның негізгі мақсаты – 2030 жылға қарай тіркелетін жұмыссыздық деңгейінің мәнін 1 пайыздан артық асырмау. Бұдан басқа еңбек нарығын тиімді дамытуға ықпал ететін құқықтық, экономикалық және институционалдық жағдайлар жасау	927382719,5 мың рубль	14,7 млрд доллар
Қазақстан Республикасы	19,1 млн	449 мың	Нәтижелі жұмыспен қамтуды және жаппай кәсіпкерлікті дамытудың 2017-2021 жылдарға арналған "Еңбек" мемлекеттік бағдарламасы	Халықты нәтижелі жұмыспен қамтуға жәрдемдесу және азаматтарды кәсіпкерлікке тарту.	593769513 мың тг	1,5 млрд доллар
Белоруссь Республикасы	9,3 млн	8 мың	2021–2025 жылдарға арналған "Еңбек нарығы және жұмыспен қамтуға жәрдемдесу"	Мемлекеттік бағдарламаның мақсаты халықты жұмыспен қамтуға жәрдемдесу саласындағы мемлекеттік саясатты іске асыруды қамтамасыз ету болып табылады. Жұмыссыздықты 2025 жылға қарай 4,2% - ға азайту	215 009 935,9 рубля	0,1 млрд доллар (102 млн)
Қырғыз Республикасы	6,7 млн	76,5 мың	Халықты жұмыспен қамтуға жәрдемдесу және ішкі және сыртқы еңбек көшіқонын реттеудің 2020 жылға дейінгі бағдарламасы	Еңбек ресурстарын неғұрлым толық және ұтымды пайдалануды, шетелде еңбек қызметін жүзеге асыратын Қырғызстан азаматтарының құқықтарын қорғауды ескере отырып, халықты жұмыспен қамтуға жәрдемдесу шараларын жандандыру жолымен халықты нәтижелі жұмыспен қамту үшін жағдайлар жасау, жұмыссыздықты және еңбек нарығындағы сұраныс пен ұсыныстың теңгерімсіздігін төмендету.	1,3 млрд сом	18,6 млн доллар
Армения	2,9 млн	57,9 мың	«Армения, жұмыс жаса!» 2019-2023 стратегиялық бағдарламасы	Бағдарламаның негізгі тіректері Арменияда адам капиталын дамыту, жұмыспен қамтуды ынталандыру және институционалдық реформалар жүргізу болады.	-	-
Ескерту – ЕЭО мүше мемлекеттердің жұмыспен қамтуға байланысты бағдарламалары негізінде авторлармен құрастырылған						

Талдау барысында барлық ЕЭО мүше мемлекеттер қарастырылды. Талдау барысында келесідей тұжырымдар жасалынды:

- Ресей Федерациясында халық саны, жұмыссыздар саны және бағдарлама ауқымы өзге мемлекеттерге қарағанда жоғары;
- Армения Республикасында жұмыспен қамту бағдарламасы әлсіз және жұмыссыздық деңгейі ең жоғары;

- Ресей жұмыссыздықтың алдын алу үшін халық арасындағы әлеуметтік тапты ынталандыру мен еңбек қауіпсіздігіне назар аударса, Қазақстан Республикасында басты назар кәсіпкерлік арқылы жұмыссыздық деңгейін төмендету болып отыр;

- Қызғызстанда жұмыссыздық деңгейін төмендетумен бірге, шетелде жұмыс жасайтын азаматтардың еңбек құқықтарын қорғау маңызды орын алады;

- Мақсатты индикаторларға байланысты жқмыссыздықпен күресудің тиімді саясаты Қазақстан Республикасы мен Ресей Федерациясы ерекшеленеді.

- Армения мен Беларусь мемлекеттерінде жұмыссыздықтың алдын алудағы саясаты жеткіліксіз.

Зерттеу гипотезасы бойынша $Г_1$ расталды. Халық саны жоғары болған сайын жұмыссыздық деңгейі артады. Экономикадағы белсенді халық санының жұмыс істеу саласы арта түседі. Жұмыспен қамтудың сапасын арттыру мақсатында мемлекет тарапынан сан алуан шаралар жүзе асырылады. Мемлекеттік бағдарламаларда сапалы жұмыспен қамтамасыз ету құралдар мен жобалары саны жоғары болады. Яғни, мемлекеттік жұмыспен қамту бағдарламасындағы мақсатты индикаторлар саны жоғары, жоба тиімділігі мен сапасы жақсы деңгейде болады. Ресей халық саны жоғары, жұмыспен қамту бағдарламасы әр алуан жобаларды қамтиды. Жұмыспен қамту бағдарламасының қаржыландыру қоры үлкен. Болашақта бағдарламаның нәтижелігі жоғары болуының ықтималдығы жоғары.

Қорытынды

Зерттеу жұмысында ЕЭО мүшелеріндегі жұмыспен қамту мәселесі талданған. Талдау барысында, Қазақстан Республикасында жұмыссыздық деңгейі жоғары болып анықталып отыр. Ресейде 146 млн адамның 1,2 млн жұмыссыз болса, Қазақстанда 19 млн адамның 450 мыңға жуығы жұмыссыз. Бұдан басқа, салыстырмалы түрде Армения, Беларусь, Қырғызстанмен салыстырсақ та, жұмыссыздар үлесі Қазақстанда жоғары. Мемлекеттік бағдарламалардың бюджеттік қоры мен қамтитын ауқымын қарастыратын болсақ, Ресей мен Қазақстан жұмыспен қамту бағдарламасы тиімді және бюджеттік қоры ауқымды. Сол себепті, ЕЭО мүше мемлекеттерінде жұмыспен қамту бағытында қабылданатын келесідей шараларды ұсынамыз:

- халық арасында жұмысқа орналасуға жәрдемдесу;
- жұмыссыздар үшін кәсіби даярлау, біліктілікті арттыру, қайта даярлау және қоғамдық жұмыстарды ұйымдастыру;
- қоғамдық жұмыстарда істейтін жұмыссыздар еңбегіне ақы төлеу;
- табысы аз азаматтарға жататын жұмыссыздарға атаулы әлеуметтік көмек көрсету;
- жұмыс күшіне сұраныс пен ұсыныс теңгерімділігі жөніндегі шаралар жүргізу;
- халықты әлеуметтік қолдауға мұқтаж нысаналы топтардың жұмыспен қамтылуын ұйымдастыру;
- қосымша жұмыс орындарын құратын шағын және орта кәсіпкерлікті қолдау мен дамыту;
- жұмыспен қамтудың өңірлік мәселелерін шешуде жергілікті атқарушы органдардың рөлі жөніндегі шаралар қабылдау;
- білім беру ұйымдарының түлектерін жұмыспен қамтуға жәрдемдесу және т.б.

Әдебиеттер тізімі

Blattman, C. Generating Employment in Poor and Fragile States: Evidence from Labor Market and Entrepreneurship Programs / C. Blattman, L.R. Ralston *// Sustainability & Economics eJournal*. — 2015. DOI:10.2139/ssrn.2622220.

Chen J. City-level hukou-based labor market discrimination and migrant entrepreneurship in China / J. Chen, M. Hu *// Technological and Economic Development of Economy*. — 2021. — № 27 (5). — P. 1095-1118. DOI:10.3846/TEDE.2021.15006

Pecenco M. Opportunities and Entrepreneurship: Evidence on Advanced Labor Market Experience / M. Pecenco, C. Schmidt-Padilla, H. Taveras. — 2020. — P.124-135.

Stawicka E. Female entrepreneurship in rural areas in the aspect of the labor market / E. Stawicka, M. Parlińska // *22nd International Scientific Conference. "Economic Science for Rural Development 2021" No 55 Sustainable Bioeconomy, Integrated and Sustainable Regional Development, Rural Development and Entrepreneurship, Circular Economy: Climate Change, Environmental Aspect, Cooperation, Supply Chains, Efficienc*. — 2021.

Бизин С.В. Анализ развития регионального рынка труда и проблемы занятости населения / С.В. Бизин // Экономика труда. — 2018. — Т. 5. — № 3. — С. 745–760. doi: 10.18334/et.5.3.39415

Буланов В. Рынок труда: учеб. / В. Буланов, Н. Волгин. — М., 2014. — 680 с.

Гобсон Дж. Проблемы безработицы (Problem of the unemployed) / Дж. Гобсон; пер. с англ. — 2-е изд. —М., 2011. — 149 с.

Кузьмина Е. Зачем нужен рынок труда ЕАЭС? [Электронный ресурс] / Е. Кузьмина. — Режим доступа: https://spbredcross.org/images/pr_grant/EAES.pdf

Құрманбеков А. Рынок труда Казахстана — сдержанный рост [Электронный ресурс] / А. Құрманбеков. — Режим доступа: https://halykfinance.kz/download/files/company-documents/research/labour2019.pdf.

Морозова Н.Н. Поддержка развития малого женского предпринимательства. Для обеспечения эффективной занятости на рынке труда Интернет ресурс [Электронный ресурс] / Н.Н. Морозова. — Режим доступа: https://cyberleninka.ru/article/n/podderzhka-razvitiya-malogo-zhenskogo-predprinimatelstva-dlya-obespecheniya-effektivnoy-zanyatosti-na-rynke-truda1.

Орозонова А. Проблемы рынка труда в странах ЕАЭС / А. Орозонова, Н. Мырзабаева // Журн. междунар. экон. отн. — 2019. DOI: 9. 771. 10.18334/eo.9.2.39780.

Пак Х.С. Страны ЕАЭС: оценка экономической безопасности / Х.С. Пак, Е.В.Ушакова, Т.А. Борисова // Экономика и менеджмент. — 2020. — 26 (5). — С. 366–372.

Работай Армения: власти взялись за разработку очередной стратегии. [Электронный ресурс]. — Режим доступа: https://newsarmenia.am/news/society/rabotay-armeniya-vlasti-vzyalis-za-razrabotku-ocherednoy-strategii-gazeta/?

Рассел Д. Рынок труда / Д. Рассел, Р. Кон. — М: VSD, 2012. — 84 с.

Руденко Г. Формирование рынков труда : учеб. пос. / Г. Руденко, Б. Муртозаев. — М., 2014. — 416 с.

Рынок труда: учеб. и практ. для академического бакалавриата / под ред. Е. Б. Яковлевой. — М., 2016. — 355 с.

Самосейко В. Особенности обеспечения занятости и трудоустройства граждан государств-членов Евразийского экономического союза / В. Самосейко. [Электронный ресурс]. — Режим доступа: https://etalonline.by/document/?regnum=u01502138&q_id=0&ysclid=l7ovoslfqf982138948.

Сардарян А.Р. Современное состояние и проблемы рынка труда в странах ЕАЭС / А.Р. Сардарян, А.А. Петроченко // Изв. Саратов. ун-та. Нов. сер. Сер. Экономика. Управление. Право. — 2018. — Т. 18. — Вып. 1. — С. 19–27. DOI: 10.18500/1994-25402018-18-1-19-27.

Статистика Евразийского экономического союза. Аналитический обзор. [Электронный ресурс]. — Режим доступа:http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/econstat/Documents/labourmarket_2019.pdf

Сутырин В. Страны СНГ будут сближаться с Евразийским союзом для доступа к единому рынку труда [Электронный ресурс]. / В. Сутырин. — Режим доступа: https://eurasia.expert/strany-sng-budut-sblizhatsya-s-evraziyskim-soyuzom-dlya-dostupa-k-edinomu-rynku-truda/?utm_source=yandex.kz&utm_medium=organic&utm_campaign=yandex.kz&utm_referrer=yandex.kz

Шагайда Н. Содействие занятости сельского населения: как скорректировать госпрограмму / Н. Шагайда, А. Потапова // Экономическое развитие России. — 2020. — № 27 (3). — С. 37–40.

Р. Нуранова, С. Ибраимова, Д. Кангалакова, Н. Батталов

Анализ государственной поддержки занятости в государствах-членах ЕАЭС

Аннотация:

Цель: Статья направлена на изучение состояния занятости в государствах-членах ЕАЭС и программ государственной поддержки в данной сфере посредством сравнительного и статистического анализа показателей занятости и действующих программ занятости в России, Казахстане, Кыргызстане, Беларуси и Армении.

Метод: К числу основных методов, используемых в статье, относятся методы логического анализа, синтеза, разработки причинно-следственных понятий, индукции и дедукции.

Результат: В ходе исследования были проанализированы показатели занятости за 2019 год и действующие государственные программы занятости в странах ЕАЭС. Были выявлены схожие цели, задачи и проекты программ занятости государств-членов ЕАЭС. Установлено, что программы занятости в Республике Казахстан и Российской Федерации имеют преимущества перед программами государств Армении, Беларуси, Кыргызстана, а именно имеют больше финансирования и охватывает более обширные направления занятости.

Выводы: Занятость населения представляет собой залог хорошего уровня жизни населения и предупреждение бедности. Занятость экономически активного населения и управление уровнем безработицы среди населения являются одним и приоритетных направлений государственного управления. Для улучшения качества занятости в государствах-членах ЕАЭС рекомендуется ряд мероприятий, связанных с профессиональной подготовкой, повышением квалификации, переподготовкой и общественными работами для безработных, поддержкой и развитием малого и среднего предпринимательства, создающего дополнительные рабочие места.

Ключевые слова: занятость, государства-члены ЕАЭС, безработица, продуктивная занятость, трудоустройство, государственная программа, государственная политика, экономически активное население.

R. Nýranova, S. Ibraımova, D. Kangalakova, N.Battalov

Analysis of state support for employment in the EAEU

Annotation

Object: this article is aimed at studying the state of employment in the EAEU member states and state support programs in this area through comparative and statistical analysis of employment indicators and existing employment programs in Russia, Kazakhstan, Kyrgyzstan, Belarus and Armenia.

Methods: the main methods used in the article include methods of logical analysis, synthesis and development of causal concepts, induction and deduction.

Findings: in the course of the study, employment indicators for 2019 and the current state employment programs in the EAEU countries were analyzed. Similar goals, tasks and projects of employment programs of the EAEU member states were identified. It is established that employment programs in the Republic of Kazakhstan and the Russian Federation have advantages over the programs of the states of Armenia, Belarus, Kyrgyzstan, namely, they have more funding and cover more extensive areas of employment.

Conclusions: employment of the population is a guarantee of a good standard of living of the population and the prevention of poverty. The employment of the economically active population and the management of the unemployment rate among the population is one of the priorities of public administration. To improve the quality of employment in the EAEU member States, a number of measures are recommended related to vocational training, advanced training, retraining and community service for the unemployed, support and development of small and medium-sized businesses that create additional jobs.

Keywords: employment, EAEU member states, unemployment, productive employment, state program, state policy, economically active population

References

Bizin, S. V. (2018). Analiz razvitiia regionalnogo rynka truda i problemy zaniatosti naseleniia [Analysis of the development of the regional labor market and the problems of employment]. *Ekonomika truda — Labor economics*, 5, 3, 745–760. doi: 10.18334/et.5.3.39415 [in Russian].

Blattman, C., & Ralston, L. R. (2015). Generating Employment in Poor and Fragile States: Evidence from Labor Market and Entrepreneurship Programs. *Sustainability & Economics. eJournal*. Retrieved from https://www.edulinks.org/sites/default/files/media/file/Blattman_Employment_Lit_Review.pdf

Bulanov, V., & Volgin, N. (2014). Rynok truda [Labor market][in Russian].

Chen, J., & Hu, M. (2021). City-level hukou-based labor market discrimination and migrant entrepreneurship in China. *Technological and Economic Development of Economy*. Retrieved from https://doi.org/10.3846/tede.2021.15006

Dlia obespecheniia effektivnoi zaniatosti na rynke truda Internet resurs [To ensure effective employment in the labor market online resource]. Retrieved from https://cyberleninka.ru/article/n/podderzhka-razvitiya-malogo-zhenskogo-predprinimatelstva-dlya-obespecheniya-effektivnoy-zanyatosti-na-rynke-truda1econstat/Documents/labourmarket_2019.pdf [in Russian].

Gobson, Dzh. (2011). Problemy bezrabotitsy [Problem of the unemployment]: eng. translate 2-nd ed, 149 [in Russian].

Kurmanbekov, A. Rynok truda Kazakhstana — sderzhannyi rost [Kazakhstan's labor market – restrained growth]. Retrieved from https://halykfinance.kz/download/files/company-documents/research/labour2019.pdf [in Russian].

Kuzmina, E. Zachem nuzhen rynok truda EAES? [Why the EAEU labor market is needed]. Retrieved from https://spbredcross.org/images/pr_grant/EAES.pdf [in Russian].

Morozova, N.N. Podderzhka razvitiia malogo zhenskogo predprinimatelstva [Support for the development of small women's entrepreneurship]. Retrieved from https://cyberleninka.ru/article/n/podderzhka-razvitiya-malogo-zhenskogo-predprinimatelstva-dlya-obespecheniya-effektivnoy-zanyatosti-na-rynke-truda1/viewer [in Russian].

Orozonova, A. & Myrzabaeva, N. (2019). Problemy rynka truda v stranakh EAES [Labor market problems in the EAEU countries]. Zhurnal mezhdunarodnykh ekonomicheskikh otnoshenii [Journal of International Economic Affairs]. DOI: 9. 771. 10.18334/eo.9.2.39780 [in Russian].

Pak, H.S., Ushakova, E.V., & Borisova, T.A. (2020). Strany EAES: otsenka ekonomicheskoi bezopasnosti [The EEC countries: assessment of economic security] *Economics and Management*, 26 (5), 366–372 [in Russian].

Pecenco, M., Schmidt-Padilla, C., & Taveras, H. (2020). Opportunities and Entrepreneurship: Evidence on Advanced Labor Market Experience, 2020, 124-135.

Rabotai Armeniia: vlasti vzialis za razrabotku ocherednoi strategii [Work, Armenia: the authorities have taken up the development of the next strategy]. Retrieved from https://newsarmenia.am/news/society/rabotay-armeniya-vlasti-vzyalis-za-razrabotku-ocherednoy-strategii-gazeta/?[in Russian].

Rassel, D., & Kon, R. (2012). Rynok truda [Labor economics]. Moscow: VSD, 84 [in Russian].

Rudenko, G., & Murtozaev, B. (2014). Formirovanie rynkov truda [Formation of labor markets: tutorial]. Moscow, 416 [in Russian].

Samoseiko, V. Osobennosti obespecheniia zaniatosti i trudoustroistva grazhdan gosudarstv-chlenov Evraziiskogo ekonomicheskogo soiuza [Features of ensuring employment of citizens of the member States of the Eurasian Economic Union]. Retrieved from https://etalonline.by/document/?regnum=u01502138&q_ id=0&ysclid= l7ovoslfqf982138948 [in Russian].

Sardaryan, A. R., & Petrochenko, A. A. (2018). Sovremennoe sostoianie i problemy rynka truda v stranakh EAES [The Current State and Problems of the Labor Market in the EAEC Countries. Izvestiia Saratovskogo universiteta. Novaia seriia. Seriia Ekonomika. Upravlenie. Pravo — News of the Saratov University. New series, Economy Series. Management. Law, 18(1), 19–27. DOI: 10.18500/1994- 2540-2018-18-1-19-27 [in Russian].

Shagajda, N., & Potapova, A. (2020). Sodeistvie zaniatosti selskogo naseleniia: kak skorrektirovat gosprogrammu. [Promoting rural employment: how to adjust the state program]. *Ekonomicheskoe razvitie Rossii* — Economic development of Russia, 27 (3), 37–40 [in Russian].

Statistika Evraziiskogo ekonomicheskogo soiuza. Analiticheskii obzor [Statistics of the Eurasian Economic Union. Analytical review]. Retrieved from http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/ [in Russian].

Stawicka, E., & Parlińska, M. (2021). Female entrepreneurship in rural areas in the aspect of the labor market. *22nd International Scientific Conference. "Economic Science for Rural Development 2021" No 55 Sustainable Bioeconomy, Integrated and Sustainable Regional Development, Rural Development and Entrepreneurship, Circular Economy: Climate Change, Environmental Aspect, Cooperation, Supply Chains, Efficienc*.

Sutyrin, V. Strany SNG budut sblizhatsia s Evraziiskim soiuzom dlia dostupa k edinomu rynku truda [The CIS countries will move closer to the Eurasian Union for access to the single labor market. Retrieved from https://eurasia.expert/strany-sng-budut-sblizhatsya-s-evraziyskim-soyuzom-dlya-dostupa-k-edinomu-rynku-truda/?utm_source=yandex.kz&utm_medium=organic&utm_campaign=yandex.kz& utm_referrer=yandex.kz [in Russian].

DOI 10.31489/2022Ec4/198-208
ВЩШ 10ю31489.2022Ус4.
ОУД Ь12б Ь38
УДК 338ю436Ж338ю28Ж620ю9(574)

А.Т. Омарова[*1], А.К. Мазина[2], М. Течке[3], Г.К. Кабдуллина[4], Г.Н. Сраилова[5]

[1,2] Карагандинский университет имени академика Е.А. Букетова, Караганда, Казахстан;
[3] Ягеллонский университет, Краков, Польша;
[4] Костанайский социально-технический университет, Костанай, Казахстан;
[5] Карагандинский университет Казпотребсоюза, Караганда, Казахстан
[1]ainuraphd@mail.ru, [2]mazina_ainur@mail.ru, [3] maciej.teczke@uj.edu.pl,
[4]asilhan1996@mail.ru, [5] gulnara.srailova@mail.ru

[1]https://orcid.org/0000-0001-9808-4908, [2]https://orcid.org/0000-0001-7788-7357,
[4] https://orcid.org/0000-0002-0215-1502, [5] https://orcid.org/0000-0001-6519-8351

[1]Scopus Author ID: 55982396200, [4]Scopus Author ID: 55428868800, [5]Scopus Author ID: 57217042221
[1] Researcher ID: U-5563-2018, [4] Researcher ID: AEN-3372-2022

Методические основы экономической оценки энергосберегательной оснащенности сельского хозяйства

Аннотация:

Цель: В статье проведен анализ и исследованы особенности применения методических основ экономической оценки энергосберегательной оснащенности сельского хозяйства с помощью эффективных цифровых технологий Республики Казахстан, где в качестве ключевой проблемы выделены методические основы экономической оценки энергосберегательной оснащенности, воспроизводства и использования электроэнергии сельского хозяйства. Объектом исследования выступает сельское хозяйство, как одно из ключевых отраслей экономики Казахстана, обеспечивающей продовольственную и экономическую безопасность, а также воспроизводство и использование энергосберегательной оснащенности.

Методы: Авторами были использованы методы экономико-математического моделирования и прогнозирования, обобщение и группировка статистической информации, сравнительный анализ, необходимый для анализа данных зарубежных стран в области оценки энергосберегательной оснащенности сельского хозяйства, а также междисциплинарный подход.

Результаты: Анализ развития экономической оценки состояния, воспроизводства и использования электроэнергии сельского хозяйства; обоснование необходимости экономической оценки развития сельского хозяйства с помощью доступа к энергии из возобновляемых источников (анализ внедрения ветряной энергетики в сельском хозяйстве); была построена трендовая модель, в процессе чего был выполнен прогноз исследуемых значений на 2022–2024 годы.

Выводы: Устойчивое развитие сельского хозяйства зависит не только от решения классических проблем растениеводства и животноводства, но и от создания экосистемы на базе его обширных цифровых платформ и формирования новых направлений научной и практической деятельности в области методических основ экономической оценки энергосберегательной оснащенности сельского хозяйства.

Ключевые слова: сельское хозяйство, энергосберегательная оснащенность, цифровизация, сельхозпроизводство, электроэнергия, возобновляемые источники энергии, производительность.

Введение

Преобразование энергетической системы означает активный процесс развития политических, рыночных и нормативных условий, создания методов планирования и эксплуатации энергетической системы, а также поощрения инвестиций, инноваций и использования интеллектуальных, эффективных, надежных и экологически чистых технологий, которые используются в отраслях экономики, в том числе и в сельском хозяйстве.

Расширение использования возобновляемых источников энергии стало возможным благодаря технологическим достижениям в этой области. Во-первых, появилась возможность значительно снизить стоимость производства электроэнергии с помощью различных типов ветровых и солнечных электростанций, которые в последнее время эффективно используются для сельского хозяйства Республики Казахстан, одного из приоритетных направлений экономического развития с большим потенциалом и резервами. Продуктивность сельскохозяйственных земель и общее производство сельскохозяйственной продукции (услуг) повышается за счет следующих технологий:

[*]Автор корреспондент. E-mail: *ainuraphd@mail.ru*

- прогнозирование оптимального времени сбора урожая;
- «умное» орошение;
- интеллектуальные системы внесения минеральных удобрений;
- система борьбы с вредителями и сорняками.

Обеспечение доступа к энергии из возобновляемых источников в сельском хозяйстве, цифровизация отраслей являются основным вектором развития страны. Современное сельское хозяйство нацелено на повышение производительности и урожайности. В этой области только высокомеханизированные решения позволяют добиться значительных результатов, на что влияет новая цифровая революция, которая меняет современные методы производства, цепочки поставок и цепочки создания стоимости, вносит свой вклад в этот процесс.

Обзор литературы

Сельскохозяйственные консультационные услуги должны учитывать не только текущие вопросы, но и экономические и социальные проблемы, с которыми сталкиваются сельские районы. Эти задачи, несомненно, включают в себя устойчивую экономическую и энергетическую политику, такую как доступ к энергии из возобновляемых источников и финансовые возможности для удовлетворения энергетических потребностей домохозяйств и фермеров. Поэтому важна консультативная и информационная деятельность в таких областях, как сокращение энергетической бедности и улучшение качества воздуха (Arkadiusz Piwowar, 2021).

По мнению Camaren, Swilling (2011), потребность в энергоэффективной экономике является неотложной, а текущие стратегии ресурсо- и энергоемкого роста, используемые политиками, неустойчивы (Camaren, Swilling, 2011).

Gerrard (2011) утверждает, что существуют два основных способа решения энергетических проблем: энергоэффективность и возобновляемые источники энергии. Gerrard, 2011; Xiaohua, Jianjfeng, 2010; Zhang, 2013 утверждают, что энергоэффективность состоит из следующих компонентов: эффективность технологии, оборудования, эксплуатации и работы (Zhang, Xia, 2010).

В своих исследованиях рассматривают переход развитых стран мира к «низкоуглеродной» экономике и «зеленому» экономическому росту, который приводит к тому, что энергетические показатели активно включаются в систему эколого-экономических оценок на современном этапе развития. Принимая во внимание синергетический подход, необходимый при анализе энергоэффективности, отражающий ее влияние на три основные сферы деятельности: экономическую, социальную и экологическую, имеющие большое значение в сельском хозяйстве (Matraeva, Goryunova et al., 2017).

Актуальность топливно-энергетической проблемы, по мнению многих ученых и аграриев, в том числе (Shirokov, Tikhnenko, 2021), определяет необходимость рационального энергопотребления во всех отраслях экономики, в том числе и в сельском хозяйстве. Для решения проблем систематического управления энергосбережением в сельском хозяйстве и рационализации национальных мер финансовой поддержки энергосберегающих технологий, машин и проектов необходим межсекторальный, комплексный подход. Показано, что этим требованиям отвечает метод энергоэкономической (биоэнергетической) оценки, преимущество которого состоит в том, что его использование позволяет измерить затраты на выращивание растений и содержание животных в единой единице и сравнить их с результатами производства, что особенно важно для национальных стратегий.

Основной результат исследования заключается в том, что лишь немногие страны демонстрируют высокие показатели эффективности. Кроме того, производство электроэнергии на основе возобновляемых источников энергии расширяется по мере роста. Так, например, такие страны, как Германия, Швеция или Австрия, достигают надежной экологической защиты производительности, используют меньше энергии и являются экологически эффективными по сравнению с другими странами, такими как Дания, Бельгия, Швеция или Австрия. Более того, группа восточных стран ЕС достигла более низких показателей эффективности, которые можно отнести к категории ожидаемо, в результате снижения технологического внедрения в основных производственных секторах (Dong Yan, Hongda Liu, Pinbo Yao, 2021).

Экономическая политика и стратегия развития Европейского союза направлены на создание низкоуглеродной экономики, а также ресурсосберегающей экономики. Для реализации этой цели Европейский союз стремится повысить свою эффективность в плане потребления энергии примерно на 20 %, снизить выбросы углекислого газа до 20 % от общего объема потребляемой энергии, а также

производить 20 % своей энергии за счет возобновляемых источников энергии. Эта инициатива получила название «План действий 20–20–20» ЕС (Nugent, Rhinard, 2019).

Основная часть

Сельское хозяйство, один из экономических приоритетов Казахстана, имеет большой потенциал и резервы, а разнообразные климатические условия Казахстана позволяют адаптировать и применять энергосберегающие подходы в растениеводстве и развивать безотходное производство в животноводстве. Применительно к Казахстану можно отметить опыт внедрения ветряной энергетики в сельском хозяйстве, который имеет определенные преимущества (рис. 1, 2) (Information on electricity production by RES facilities for 2018–2021).

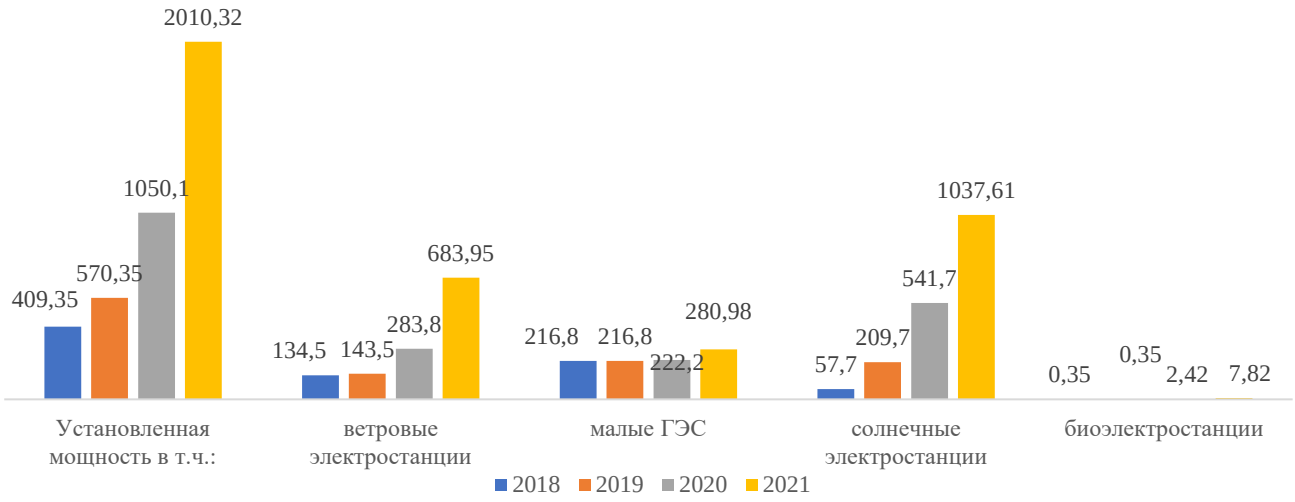


Рисунок 1. Производство электрической энергии объектами ВИЭ за 2018–2021 годы, применяемые в сельском хозяйстве, МВт

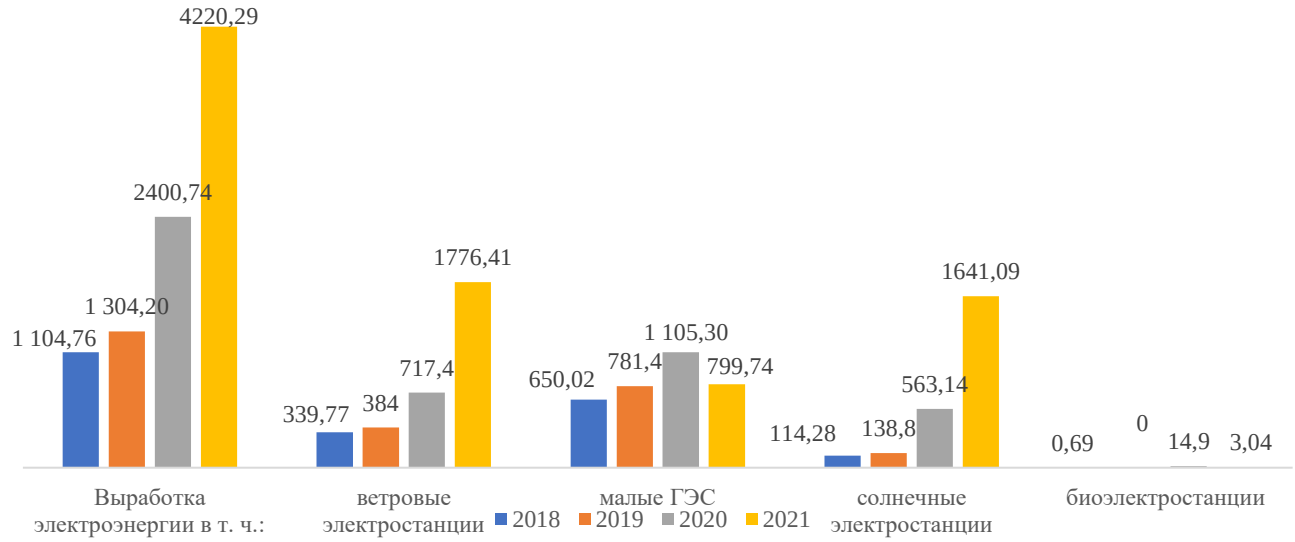


Рисунок 2. Производство электрической энергии объектами ВИЭ за 2018–2021 годы, применяемые в сельском хозяйстве, млн кВт*ч

Примечание. Составлен на основе источника: Information on electricity production by RES facilities for 2018-2021 [Electronic resource] — Mode of access: https://www.gov.kz/.

Увеличение выработки электрической энергии объектами ВИЭ за 2021 год по сравнению с 2020 годом составляет 30 %.

С внедрением цифровизации и на основе этого разработка экотехнологий правительством в 2019 г. была принята Программа развития «зеленой» экономики на 2019–2023 годы с определенным планом действий, где одна из приоритетных областей — сельское хозяйство.

Если сравнивать со странами СНГ, Казахстан имеет некоторые преимущества относительно объектов наземной ветровой энергетики. В динамике эти показатели можно увидеть в таблице 1.

Таблица 1. Зарубежный опыт применения установленной мощности объектов наземной ветровой энергетики в сельском хозяйстве в период с 2010 по 2020 годы, МВт

Год	Азербайджан	Армения	Беларусь	Казахстан	Молдова	РФ	Узбекистан	**Итого**
2010	2	3	2			10		17
2011		3	2			10		15
2012		3	2	2		10		17
2013	3	3	2	4	1	10		23
2014	3	3	3	53	1	10		73
2015	8	3	43	72	1	11		138
2016	16	3	68	98	2	11		198
2017	16	3	83	112	9	11	1	235
2018	66	3	101	121	29	52	1	373
01.20	66	3	109	284	29	102	1	594
Примечание. Составлена на основе источника: Widespread development of renewable energy sources and its impact on the electricity market and grid infrastructure. - 2021. - [Electronic resource]. - Access mode: https://unece.org./								

Так, например, по статистическим данным, с учетом крупных гидроэлектростанций производство электроэнергии в Республике Казахстан за счет ВИЭ на 01.01.2021 г. составило 11 097,0 млн кВт*ч, в том числе 9 993,7 млн кВт*ч электроэнергии произведено гидроэлектростанциями; 707,1 млн кВт*ч — ветровыми электростанциями; 391,2 млн кВт*ч — солнечными электростанциями и 5,0 млн кВт*ч — биогазом (рис. 3) (National report on the transition of the Republic of Kazakhstan to a "green economy" for 2017 –2020).

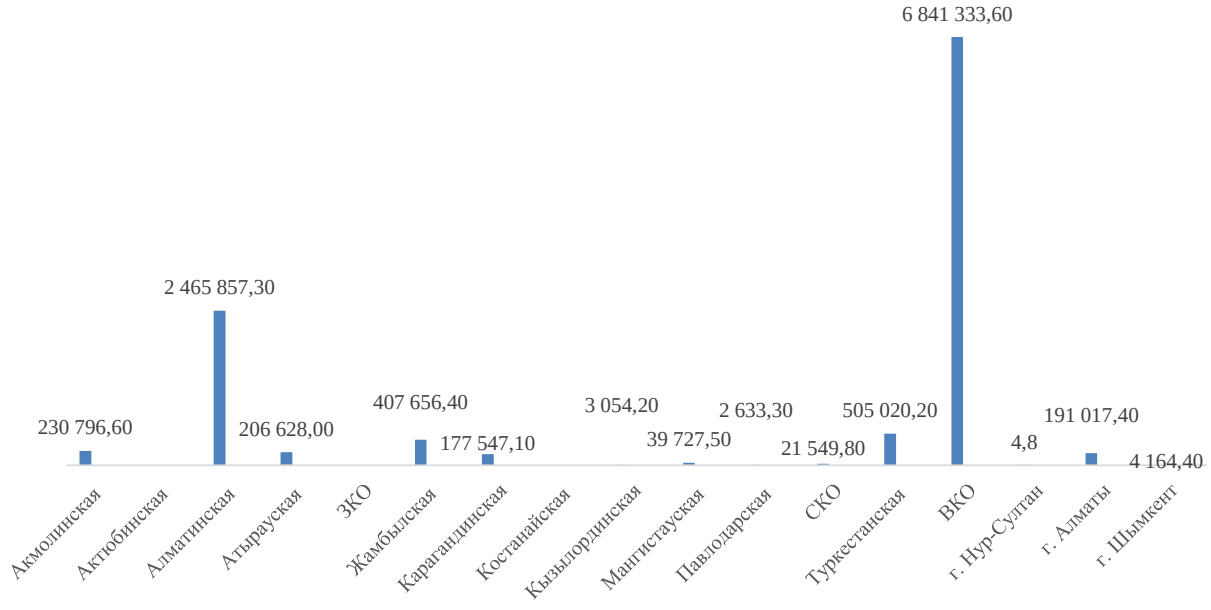


Рисунок 3. Общее производство электроэнергии возобновляемых источников энергии (далее — ВИЭ) в региональном аспекте в 2020 г., тыс. кВт*ч

Примечание. Составлен на основе источника: National report on the transition of the Republic of Kazakhstan to a "green economy" for 2017–2020. [Electronic resource]. — Nur-Sultan, 2020. — 325 с. — Access mode: https://igtipc.org/.

Энергоемкость экономики является особенно важным показателем ее природоемкости. Данный показатель является одним из основных в большинстве систем показателей устойчивости, который

рассчитывается как отношение суммарного потребления топливно-энергетических ресурсов на все производственные и непроизводственные нужды (тонн нефтяного эквивалента) к объему ВВП.

Проводя анализ развития экономической оценки состояния, воспроизводства и использования электроэнергии сельского хозяйства, можно отметить, что потребление электроэнергии в Казахстане не растет относительно быстрыми темпами (рис. 4) (Data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2014–2021.).

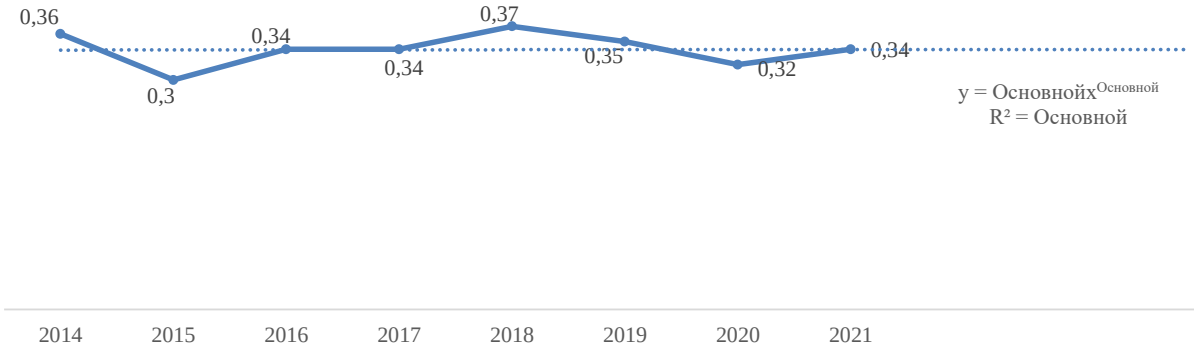


Рисунок 4. Динамика энергоемкости ВВП с 2014 по 2021 гг., на тыс. долл. США в ценах 2015 г.

Примечание. Составлен авторами на основе источника: Data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2014–2021. [Electronic resource]. — Access mode: //www.stat.gov.kz.

Переход к цифровизации, а также инновационным и технологическим изменениям, связанным с переходом к «зеленой» экономике, зависит от добывающей промышленности и экспорта сырьевых товаров, влияя на экономическое развитие Казахстана. Однако большинство секторов экономики являются достаточно энергоемкими и загрязняющими (табл. 2) (Data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2014-2021).

Таблица 2. Топливно-энергетический баланс Республики Казахстан за 2014–2020 годы (в формате Международного энергетического агентства) в сельском хозяйстве

(тысяч тонн нефтяного эквивалента (1000 тнэ)

Поставка и потребление	01.01.15 г.	01.01.16 г.	01.01.17 г.	01.01.18 г.	01.01.19 г.	01.01.20 г.	01.01.21 г.
Сельское хозяйство							
Уголь	147,8	108,7	106,7	108,8	108,0	96	75
Сырая нефть	-	-	-	-	-	0	-
Нефтепродукты	561,1	442,0	461,2	560,1	526,2	499	506
Природный газ	16,7	19,3	23,0	37,4	46,0	55	61
Гидроэнергия	-	-	-	-	-	-	-
Геотерм./солн./т.д	-	-	-	-	-	-	-
Биотопливо/отходы	-	-	-	-	-	-	-
Электричество	64,2	69,7	55,1	64,0	68,4	72	109
Тепло	103,8	82,2	86,1	89,9	901,6	147	79
Всего	**893,6**	**721,9**	**732,2**	**860,1**	**1650,3**	**869**	**830**
Рыболовство							
Уголь	-	-	-	-	0,4	1	-
Сырая нефть	-	-	-	-	-	0	-
Нефтепродукты	-	-	-	-	-	0	-
Природный газ	0,1	0,2	0,2	0,6	0,2	0	-
Гидроэнергия	-	-	-	-	-	-	-
Геотерм./солн./т.д	-	-	-	-	-	-	-
Биотопливо/отходы	-	-	-	-	-	-	-
Электричество	0,8	0,4	0,5	1,0	0,8	1	1
Тепло	0,1	-	0,1	-	0,0	-	-
Всего	**1,0**	**0,6**	**0,8**	**1,6**	**1,4**	**2**	**2**
Примечание. Составлена на основе источника: Data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2014-2021. [Electronic resource]. - Access mode: //www.stat.gov.kz.							

Переход в условиях цифровых технологий за счет внедрения экотехнологий требует эффективной координации между государственными органами, национальными и международными инвесто-

рами и обществом, в целом. Результатом является динамичный и устойчивый экономический рост, способный противостоять неблагоприятным экономическим и экологическим изменениям благодаря совместной реализации государственной политики. Поэтому внедрение технологий в сельскохозяйственный процесс, конечно, должен субсидироваться бизнесом, что позволит эффективнее использовать ресурсы и продвигать новые технологии (рис. 5) (Official resource: [Electronic resource]. — Mode of access: Kapital.kz.).

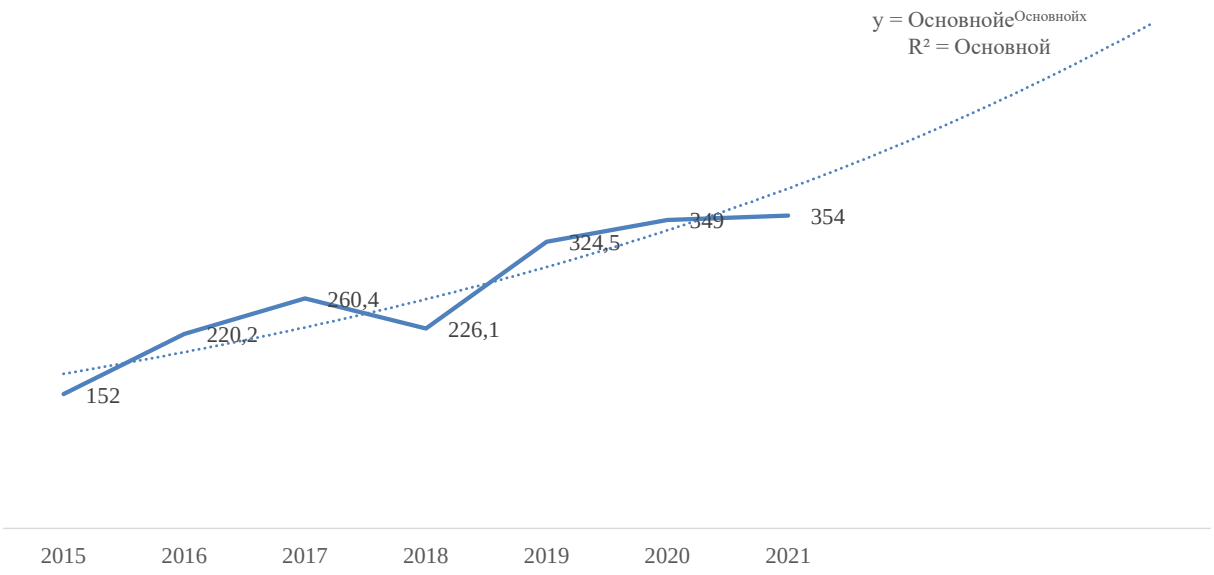


Рисунок 5. Динамика роста субсидирования сельскохозяйственных предприятий за период с 2012 по 2021 гг., млрд тенге

Примечание. Составлен на основе источника: Official resource: [Electronic resource]. — Mode of access: Kapital.kz.

Разработка методики классификации регионов по уровню технологического развития позволила бы разработать и внедрить различные пакеты мер по продвижению технологической и научной модернизации в регионах с разным уровнем технологической оснащенности.

В Казахстане технология переработки сельскохозяйственных отходов находится на ранней стадии:

- сжигание сельскохозяйственных отходов в котлах, работающих на биомассе;
- смешанное сжигание сельскохозяйственных отходов в существующих крупных котлах;
- анаэробное сбраживание отходов растениеводства и животноводства;
- преобразование в биогаз и последующее сжигание биогаза для получения биотепла.

Создание экологически безопасной системы переработки сельскохозяйственных отходов в сочетании с обновленным процессом является прорывом в области энергоэффективности, о чем свидетельствуют данные о потреблении электроэнергии в сельском хозяйстве (рис. 6) (Data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2014-2021.

С помощью методов математического моделирования и прогнозирования построим трендовую модель с таким показателем, как «Конечное потребление электроэнергии сельским/лесным хозяйством» на 2022–2024 гг.

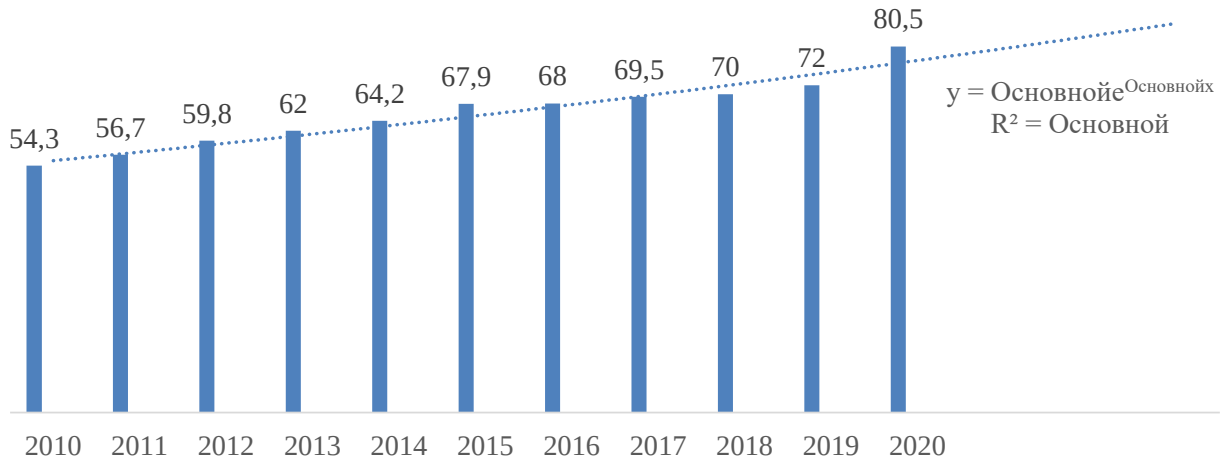


Рисунок 6. Конечное потребление электроэнергии сельским/лесным хозяйством, тнэ

Примечание. Составлен авторами на основе источника: Data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2014-2021. [Electronic resource]. - Access mode: //www.stat.gov.kz.

1. Используем критерий Ирвина для проверки наличия наблюдений во временном ряду (табл. 3).

Таблица 3. Проверка на наличие аномальных наблюдений во временном ряду

Год	Критерии Ирвина	Расчетные формулы
01.01.2011	-	Наблюдаемое значение критерия Ирвина $\lambda_t = \frac{\lvert y_t - y_{t-1}\rvert}{\sigma_y},\ t = \overline{2,11}$ Критическое значение критерия Ирвина $\lambda_{0,05} = 1{,}5$
01.01.2012	0,397	
01.01.2013	0,513	
01.01.2014	0,364	
01.01.2015	0,364	
01.01.2016	0,612	
02.02.2017	0,017	
01.01.2018	0,248	
01.01.2019	0,083	
01.01.2020	0,331	
01.01.2021	1,407	

Поскольку все наблюдения для критерия Ирвина меньше критического значения, существует 95 % вероятность того, что исходный временной ряд не содержит аномальных наблюдений.

2. Используя критерии возрастания и убывания, рассмотрим временной ряд, содержащий компонент тренда (табл. 4).

Таблица 4. Проверка наличия тренда

Общие критерии «восходящей» и «нисходящей» серии. (Для существования тренда достаточно нарушения хотя бы одного неравенства)	Расчетные значения с вероятностью ошибки $0{,}05 < \alpha < 0{,}0975$
$\nu(n) > \left[\frac{2n-1}{3} - 1{,}96\sqrt{\frac{16n-29}{90}}\right]$	1 < 4
$K_{\max} < [K_0(n)]$	10 > 5

3. Аппроксимация исходных данных была выполнена с помощью полинома первой степени:

$$y_t = a_0 + a_1 t + \varepsilon_t$$

Далее была оценена аппроксимация данных с помощью метода наименьших квадратов с получением трендовой модели:

$$y_t = 52{,}722 + 2{,}196t$$

4. Качество модели оценивалось двумя способами: проверкой хорошей подгонки и оценкой ее точности.

Для проверки пригодности модели был исследован набор остатков, то есть разница между рассчитанным моделью уровнем и реально наблюдаемыми значениями. Основными свойствами остаточной составляющей являются равенство математического ожидания нулю, случайность остатков и согласие с правилами нормального распределения. Результаты анализа остаточного ряда для проверки хорошей подгонки модели приведены в таблице 5.

Таблица 5. Проверка адекватности модели

Проверяемое свойство	Используемая статистика		Граница	Вывод
	Наименование, расчетная формула	Полученное значение		
Случайность	Критерий «пиков» (поворотных точек) $p > \left[\frac{2}{3}(n-2) - 1{,}96\sqrt{\frac{16n-29}{90}}\right]$	4 > 3	3	Адекватна
Нормальность	RS-критерий $RS = \frac{e_{\max} - e_{\min}}{S}$	3,52	2,80-3,91	Адекватна
Равенство математического ожидания уровней ряда остатков нулю	t-статистика Стьюдента $t_{набл.} = \frac{\lvert\overline{e}\rvert}{S}\sqrt{n}$	0	2,23	Адекватна

Для оценки точности модели была рассчитана средняя относительная ошибка аппроксимации:

$$E_{отн.} = \frac{1}{n}\sum_{i=1}^{n}\frac{|e_t|}{y_t}\cdot 100\% = 1{,}84\%,$$

значение, которое свидетельствует о достаточном уровне точности модели.

Таким образом, модель является качественной и может быть использована для прогнозирования.

5. Для расчета точечных прогнозов построенной модели были присвоены соответствующие значения переменных. Для построения интервальных прогнозов были определены доверительные интервалы на уровне значимости; результаты точечного и интервального прогнозов на 2022–2024 годы представлены в таблице 6.

Таблица 6. Точечный и интервальный прогнозы конечного потребления электроэнергии сельским /лесным хозяйством на 2022–2024 гг.

Год	Точечный прогноз, тнэ	Интервальный прогноз, тнэ	
		верхняя граница	нижняя граница
2022	81,275	75,953	86,596
2023	83,471	77,918	89,024
2024	85,667	79,864	91,471

Сельскохозяйственные консультации должны учитывать не только текущие вопросы, но и экономические и социальные проблемы, с которыми сталкиваются сельские районы. К ним, несомненно, относятся устойчивая экономическая и энергетическая политика, доступ к энергии из возобновляемых источников и финансовые возможности для удовлетворения энергетических потребностей домохозяйств и фермеров.

Показатели технической оснащенности, энергообеспеченности, энергоемкости, удобрения, сортового и породного состава, трудоемкости, средней грузоподъемности транспортных средств и возрастной структуры позволяют сделать выводы об уровне технического развития местного сельского хозяйства и принять решения о структуре и направлении государственной поддержки технической модернизации хозяйств, если может быть предоставлена первая информация.

Экономическая оценка энергосберегающего оборудования в сельском хозяйстве требует обеспечения, в частности, динамично развивающегося сектора возобновляемых источников энергии:

1) разработка общего плана развития возобновляемых источников энергии, тесно связанного с планом развития агропромышленного энергетического комплекса;

2) введение аукционной системы для проектов ВИЭ с целью снижения стоимости ВИЭ;

3) государственное регулирование проектов ВИЭ;

4) включить в действующее законодательство механизм изменения тарифов на электроэнергию, получаемую из возобновляемых источников энергии, или другие методы компенсации в ответ на тарифы энергопроизводящих организаций;

5) развивать региональные возобновляемые источники энергии (солнечная и ветровая энергия малой мощности в отдаленных сельских районах, не подключенных к сети) и в мегаполисах.

Выводы

Ожидаемые направления развития современного сельского хозяйства связаны с созданием надежной продовольственной базы, развитием цифровой экономики, рациональным использованием природных ресурсов, применением инновационных технологий, технической поддержкой производства. Устойчивое развитие агропромышленного комплекса зависит не только от решения классических проблем растениеводства и животноводства, но и от построения экосистемы на основе обширной цифровой платформы и формирования новых направлений научной и практической деятельности.

Повышение продуктивности сельскохозяйственного производства основано на рациональном размещении культур в системах севооборота, исследовании биоклиматического потенциала полей, агроэкологической оценке земель и агроландшафтов, интенсивном использовании земель в севооборотах, агротехнологиях, таких как системы механической обработки почвы, противоэрозионные и противодефляционные мероприятия. Передовые агропромышленные предприятия успешно решают такие вопросы, как защита и поглотительная способность почвы, снижение объема и интенсивности стока, снижение скорости поверхностного ветра, агротехнологии и химическая борьба с сорняками, восстановление плодородия почвы, повышение урожайности и качества сельскохозяйственных культур для поддержания благоприятных экологических условий.

Список литературы

Arkadiusz, Piwowar (2021). The problem of energy poverty in the activities of agricultural advisory centres in Poland. PLoS ONE 16(10): e0258366. Doi: https://doi.org/10.1371/journal.pone.0258366

Camaren, P., & Swilling, M. (2011). Greening the South African growth path: Transitioning to sustainability. *School of Public Leadership,* Sustainability Institute, Stellenbosch University, Stellenbosch, 2–26.

Gerrard, M. (2011). The law of clean energy, American Bar Association Section of Environment. *Energy and Resources.* Chicago, IL.

Zhang, J., & Xia, X. (2010). Energy audit-From a POET, ICAE, Centre of New Energy Systems, Department of Electrical. Electronic and Computer Engineering, University of Pretoria, Pretoria, 0002, South Africa, 1200–1209.

Zhang, N., Smitha, R., Bulatova, I. & Klemešc, J. J. (2013). "Sustaining high energy efficiency in existing processes with advanced process integration technology". *Applied Energy, 101,* 26–32. Viewed 30 September 2014. DOI https://doi.org/10.1016/j.apenergy.2012.02.037

Matraeva, L. V., Goryunova, N. A., Smirnova, S. N., Babenko, M. I., Erokhin, S. G., Solodukha, P. V. (2017). Methodological Approaches to Estimation of Energy Efficiency within the Framework of the Concept of Green Economy and Sustainable Development. *International Journal of Energy Economics and Policy, 7(4),* 231-239. Retrieved from http: www.econjournals.com

Shirokov, Yu., & Tikhnenko, V. (2021). Analysis of methodological bases of energy-economic assessment of agricultural technologies and projects. *Agricultural Management and Environmental Economics,* ***Vol.*** *273.* Doi: https://doi.org/10.1051/e3sconf/202127308066.

Dong Yan, Hongda Liu & Pinbo Yao. (2021). Assessing Energy Efficiency for Economic and Sustainable Development in the Region of European Union Countries. *Frontiers in environmental science, Vol. 9.* Doi:10.3389/fenvs.2021.779163.

Nugent, N., & Rhinard, M. (2019). The “Political” Roles of the European Commission. *J. Eur. Integration,* 41, 203–220. Doi:10.1080/ 07036337.2019.1572135

Information on electricity production by RES facilities for 2018-2021. *gov.kz.* Retrieved from https://www.gov.kz/

Program development of the green economy in Kyrgyz Republic for 2019-2023. *mineconom.gov.kg.* Retrieved from http://mineconom.gov.kg/froala/uploads/file/8df6cce6ee2693ee40b9568a9d695c9727610028.pdf

Widespread development of renewable energy sources and its impact on the electricity market and grid infrastructure. (2021). *unece.org.* Retrieved from https://unece.org/

Data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for 2014-2021. *stat.gov.kz.* Retrieved from www.stat.gov.kz

Growth dynamics of agricultural subsidies enterprises. Official resource: *Kapital.kz.* Retrieved from https://kapital.kz/

National report on the transition of the Republic of Kazakhstan to a “green economy” for 2017-2020. (2020). Nur-Sultan. *igtipc.org*. Retrieved from https://igtipc.org/.

А.Т. Омарова, А.К. Мазина, М. Течке, Г.К. Кабдуллина, Г.Н. Сраилова

Ауыл шаруашылығының энергия үнемдегішпен жабдықталуын экономикалық бағалаудың әдістемелік негіздері

Аңдатпа

Мақсаты: Әлемдегі ауыл шаруашылығы дәстүрліден жоғары технологиялық салаға айналуда, ол инновациялық және инвестициялық шешімдер мен әзірлемелер үшін жаңа нарықтар құруға қабілетті, еңбек өнімділігі мен энергияны үнемдейтін жабдықты арттыруға ұмтылады. Мақалада Қазақстан Республикасының ауыл шаруашылығында тиімді цифрлық технологияларды енгізу және дамыту ерекшеліктеріне талдау жүргізілген, онда негізгі проблема ретінде ауыл шаруашылығының энергия үнемдегішпен жабдықталуы, электр энергиясын ұдайы өндіру мен пайдалануды экономикалық бағалаудың әдістемелік негіздері анықталған. Зерттеу объектісі ретінде ауыл шаруашылығы алынған, ол азық-түлік және экономикалық қауіпсіздікті, сондай-ақ энергия үнемдегіш құралдарын ұдайы өндіру мен пайдалануды қамтамасыз ететін Қазақстан экономикасының негізгі салаларының бірі.

Әдісі: Авторлар экономикалық-математикалық модельдеу және болжау әдістерін, статистикалық ақпаратты жалпылау мен топтастыруды, ауыл шаруашылығының энергия үнемдегішпен жабдықталуын бағалау саласында шет елдердің деректерін талдау үшін қажетті салыстырмалы талдауды, сондай-ақ пәнаралық тәсілді пайдаланды.

Қорытынды: Ауыл шаруашылығының электр энергиясының жай-күйін, өсімін молайту мен пайдалануды экономикалық бағалауды дамытуды талдау; жаңартылатын көздерден энергияға қол жеткізу арқылы ауыл шаруашылығының дамуын экономикалық бағалау қажеттілігінің негіздемесі (ауыл шаруашылығында жел энергетикасын енгізуді талдау); 2022-2024 жылдарға арналған «Ауыл/орман шаруашылығының электр энергиясын түпкілікті тұтынуы, млн. теңге» көрсеткішінің болжамды мәндерін айқындау үшін трендтік модель жасалды, оның барысында модельдің сапалы екенін және болжау үшін пайдаланылуы мүмкін екенін көрсететін кезеңдер орындалды.

Тұжырымдама: Ауыл шаруашылығының тұрақты дамуы өсімдік шаруашылығы мен мал шаруашылығының классикалық мәселелерін шешуге ғана емес, сонымен қатар оның кең цифрлық платформалары негізінде экожүйені құруға және ауыл шаруашылығының энергия үнемдегішпен жабдықталуын экономикалық бағалаудың әдістемелік негіздері саласындағы ғылыми және практикалық қызметтің жаңа бағыттарын қалыптастыруға байланысты.

Кілт сөздер: ауыл шаруашылығы, энергия үнемдегішпен жабдықталуы, цифрландыру, ауыл шаруашылығы өндірісі, электр энергиясы, жаңартылатын энергия көздері, өнімділік.

A.T. Omarova, A.K. Mazina, M. Teczke, G.K. Kabdullina, G.N. Srailova

Methodological bases of economic assessment of energy-saving equipment of agriculture

Abstract

Object: agriculture in the world is transforming from a traditional to a high-tech industry, which is able to create new markets for innovation and investment decisions and developments, seeking to increase productivity and energy-saving equipment. In the article an analysis and peculiarities of the application of methodological bases of economic evaluation of energy-saving equipment of agriculture were conducted using efficient digital technologies of the Republic of Kazakhstan, where methodological bases of economic evaluation of energy-saving equipment, reproduction and use of electricity of agriculture are highlighted as the key problem. The object of the study is agriculture as one of the key sectors of the economy of Kazakhstan, which provides food and economic security, as well as the reproduction and use of energy-saving equipment.

Methods: the author used methods of economic and mathematical modeling and forecasting, generalization and grouping of statistical information, comparative analysis, necessary for the analysis of foreign countries' data in the field of evaluation of energy-saving equipment of agriculture, as well as an interdisciplinary approach.

Findings: analysis of the development of economic evaluation of the state, reproduction and use of agricultural electricity; justification of the need for economic evaluation of agricultural development through access to energy from renewable sources (analysis of the implementation of wind energy in agriculture); a trend model was built, in the process of which the forecast of the studied values for 2022-2024 years was made.

Conclusions: sustainable development of agriculture depends not only on solving the classical problems of crop and livestock production, but also on creating an ecosystem based on its extensive digital platforms and the formation of new directions of scientific and practical activities in the field of methodological foundations of economic evaluation of energy-saving equipment of agriculture.

Keywords: agriculture, energy-saving equipment, digitalization, agricultural production, electricity, renewable energy sources, productivity, renewable energy sources (RES).

DOI 10.31489/2022Ec4/209-215
JEL R12
УДК 364.222

Г.А. Райханова*[1], Н.Б. Куттыбаева [2], Р.Е. Жапарова[3], Г.Е. Жакина[4], Б.М. Макалакова [5]

[1,2,3,4,5]Карагандинский университет имени академика Е.А. Букетова, Караганда, Казахстан
[1]Gulnurraihanova@mail.ru; [2]nurg_78@mail.ru, [3R]abigaergalievna@mail.ru; [4]zgulnur88@mail.ru
[5] beine_79@mail.ru

[1]ORCID https://orcid.org /0000-0001-5355-4590; [2]https://orcid.org 0000-0001-8250-4111;
[3]https://orcid.org/0000-0003-3814-0028; [4]https://orcid.org/0000-0002-0133-7997;
[5]https://orcid.org/0000-0003-3630-4877

[1]Scopus Author ID: 57222346683

[1]Researcher ID: AAF-6220-2020,

Экономические и социальные последствия безработицы в стране

Аннотация:

Цель: Изучение социально-экономических последствий безработицы в Казахстане.

Методы: В исследовании использовались такие методы, как системный анализ; метод группировки; нормативный метод; метод эколого-экономической оценки и сравнительного анализа; метод материальных балансов; расчетно-аналитический метод и др. В этом исследовании для эмпирического исследования использовалась методика авторегрессионного распределенного лага (ARDL). Материалы для исследования представлены трудами казахстанских, российских и зарубежных ученых.

Результаты: В этом исследовании была предпринята попытка тщательно изучить влияние безработицы на экономику и социальную структуру в период с 2018 по 2021 годы. Темпы роста ВВП — это зависимая переменная, используемая в качестве показателя экономического роста. В настоящем исследовании объясняющими переменными являются безработица, темпы роста населения, уровень инфляции, прямые иностранные инвестиции и государственные расходы. Эмпирические результаты исследования показывают, что уровни безработицы и инфляции имеют отрицательную взаимосвязь с экономическим ростом и статистически значимы. Темпы прироста населения оказывают положительное и статистически значимое влияние на экономический рост и социальную структуру. Между переменными существует краткосрочная коинтеграция. Из результатов следует, что правительству следует принять адекватные меры для создания возможностей трудоустройства для ускорения экономического роста и сокращения безработицы в стране.

Выводы: Экономические тенденции, связанные с современными вызовами увеличения безработицы показали последствия ее влияния на экономику и социальную структуру. Выявлены основные причины, по которым существующие программы по уменьшению безработицы не удовлетворяют потребностей населения. Предлагаемые исследования и экспериментальные результаты могут быть использованы государственными организациями в целях уменьшения последствий безработицу на экономику в Республике Казахстан. Исследование состоит из введения, обоснования методов и материалов, обзора литературы, результатов исследования, заключения и списка использованной литературы.

Ключевые слова: безработица, стагнация, качество жизни, уровень доходности, платежеспособность, социальное положение.

Введение

Безработица является одной из основных проблем, особенно для развивающихся стран. Рост уровня безработицы влияет на экономическое благополучие и развитие государства. Тем не менее, есть достаточно вредных моментов, которые это может нанести жизни сообщества и развитию местного сообщества. Каждое государство сталкивается с проблемой безработицы, поскольку безработица приводит к проблемам бедности, снижению качества жизни, ухудшению социальных, политических и экономических условий.

Проблема социальных и экономических последствий безработицы берет свое начало непосредственно с проблемы безработицы. Однако дать четкое определение безработицы очень сложно, но необходимость очень высока, так как анализ именно этой категории позволяет выявить содержание и формы ее последствий. Анализ этой зависимости обусловлен, прежде всего, наличием причинно-следственных связей между безработицей и ее последствиями. Следовательно, определяя категорию

* Автор-корреспондент. E-mail:*Gulnurraihanova@mail.ru*

безработицы, ее сущность и формы, можно определить основу взаимосвязей элементов и категорий как следствие безработицы, которая является ключом к изучению.

Литературный обзор

Социальные последствия безработицы начинаются с финансовых трудностей, бедности, большого количества долгов, бездомности, семейных проблем, стигматизации, преступности, растущей социальной изоляции, считают Элисон Макклелланд и Фиона Макдональд (Alison McClelland et al., 1998).

Многие безработные, безработица не только влияют на платежеспособность, успешность человека, но и, при социальном рассмотрении, способствуют ухудшению здоровья, недоступности образования, снижению индекса человеческого развития и неспособности найти свое место в обществе (White, 1991).

Безработица анализируется в специальной литературе по разным направлениям, формируются мнения различных ученых, являющихся предметом широкой полемики (Rădulescu et al., 2018). Со временем безработице были даны различные определения, учитывающие степень научного знания и возможности его измерения (Profiroiu et al., 2020). Несмотря на такое разнообразие в определении понятия безработицы, можно определить общие элементы, которые более или менее пропорциональны во всех мнениях (Bodislav et al., 2020).

Безработица рассматривается как негативный элемент экономического развития, который в той или иной степени затрагивает все страны (Bran et al., 2018), особенно в слаборазвитых и находящихся на стадии перехода к рыночной экономике (Negescu Oancea et al., 2020).

Существуют разные подходы к оценке безработицы и разные методы ее определения (Androniceanu et al., 2017). Стоит отметить, что если мы обратимся к условиям рынка труда, безработица может быть определена как предложение труда, превышающее уровень спроса на рабочую силу, в то время как безработные могут считаться относительно перегруженными безработными, фактически, избыток рабочей силы по сравнению с количеством рабочих вызывает множество проблем (Jianu et al., 2019).

Безработица — неблагоприятное состояние доступного активного населения, которое не может найти работу из-за нерегулируемых отношений между экономическим развитием как источником спроса на труд и эволюцией населения как источника предложения труда (Carra et al., 2016).

В современных условиях безработица рассматривается как дисбаланс национального рынка труда, дисбаланс между глобальным спросом и глобальным предложением труда (Rădulescu et al., 2018). Этот дисбаланс указывает на избыточность предложения рабочей силы рабочей силе с различными уровнями и значениями развития в разных странах и на разных этапах (Bran et al., 2018). Первоначально государства были временными, чтобы их экономическое положение было стабильным, но не исключали полного и окончательного существования оптимального статуса занятости (Sarbu et al., 2021).

Стратегия и политика занятости должны начинаться с постановки некоторых фундаментальных целей: экономического роста за счет создания новых производственных единиц и, следовательно, новых рабочих мест, особенно в ключевых секторах экономики; стремительный рост научно-инновационных и образовательных рабочих мест, повышенное внимание к кадрам в этих секторах (заработная плата, материальная база, документация, отношения с другими странами — отношения, внешней торговли и т.д.); стимулирование технического прогресса предприятий путем доведения до уровня (близкого) конкурентоспособности в других странах; внесение больших изменений в условия труда и систему работы для формирования устойчивой мотивации участников тендера; формирование и поддержание нового класса управления, способного вести конкурентоспособный бизнес в суровых условиях глобализированной экономики; меры, направленные на создание и укрепление среднего класса, способного конкурировать с крупными предприятиями, в частности с иностранными компаниями, работающими в государствах; важным источником создания новых рабочих мест является обеспечение стабильности экономики государства через развитие сельского хозяйства и доступность безработной рабочей силы во всех регионах. В результате проведения литературного обзора, по мнению многих ученых, если в регионах, регионах сельское хозяйство развивается на высоком уровне, то вместе с проблемами безработицы решаются социальные, экономические проблемы.

Методы

Теория автоматического регулирования социально-экономических процессов; прагматический подход; мониторинг как средство уменьшения безработицы в стране; системный анализ; факторный анализ; методы социологических исследований. Метод кейс-исследования был выбран в качестве методологии для проведения смешанного анализа, который позволяет учитывать влияние безработицы на экономические и социальные индикаторы. Выбор методов определяется целями и задачами исследования, спецификой безработицы в стране и характером изучаемых проблем. Используемые методы позволяют провести проблемно-ситуационный анализ влияния безработицы на экономическое и социальное положение в стране с целью формирования моделей и обоснования эффективных решений, улучшающих процесс уменьшения и последствий безработицы.

Результаты и обсуждение

Безработица — это явление, которое нельзя остановить, но которое с помощью принимаемых экономических мер необходимо контролировать. Это явление имело противоречивое развитие, и в отдельные периоды последних лет можно говорить о росте. В конце января 2017 г. уровень безработицы в стране составил 4,92 %, что на 0,25 п.п. выше, чем в декабре 2016 г.

Уровень безработицы мужчин (4,5 %) увеличился в декабре 2017 г. на 0,8 п.п. по сравнению с предыдущим месяцем, а уровень безработицы среди женщин (4,4 %) увеличился на 0,5 п.п. Сравнивая показатели каждого года, можно отметить, что безработица, в целом, характеризуется как снижение на уровне страны, так и округа. Рынок труда в Румынии характеризовался постоянным уровнем в течение 2017 г. с небольшим ростом в декабре, в среднем на 4,5 %.

Уровень безработицы в Казахстане не изменился, составив по итогам 2021 г. 4,9%. Увеличилось лишь общее количество безработных, которых стало больше на 839 человек.

При этом в возрастной структуре безработного населения основные изменения в сторону роста произошли среди лиц предпенсионного возраста (55–64 лет), численность которых выросла с 54,9 тыс. до 59,4 тыс., а также среднего возраста (29–34 лет) — с 119 тыс. человек до 122,8 тыс.

В то же самое время заметно сократилось количество безработных в группах молодежи в возрасте от 15 до 28 лет и лиц 35–44 лет (рис. 1).

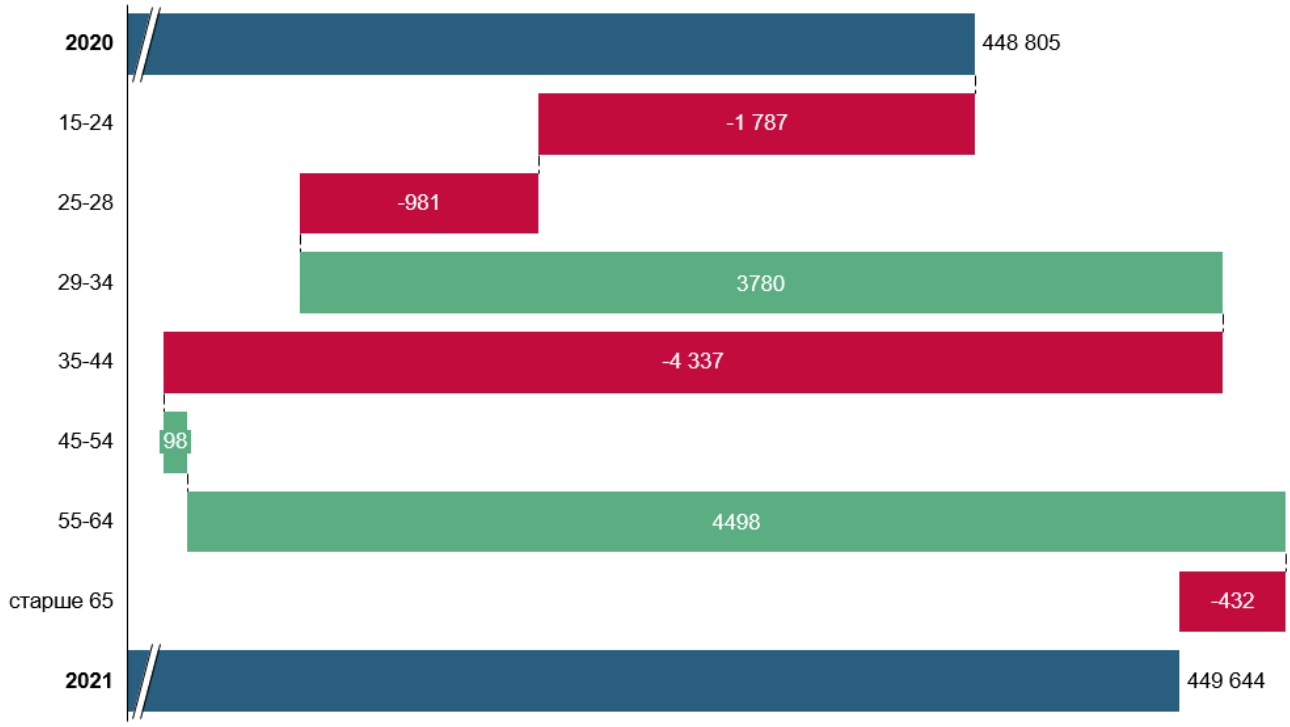


Рисунок 1. Изменение численности безработных в разрезе возраста, чел.

Примечание. Составлен авторами на основе материалов БНС АСПиР РК.

Между тем в относительном выражении показатель молодёжной безработицы в 2021 г. остался на прежнем уровне (3,8 %). Тем не менее сокращение количества не работающих молодых казахстанцев 15–28 лет вместе с уменьшением числа лиц этого же возраста, которые не учатся, повлияло на снижение доли молодёжи NEET по стране с 7,1 % в 2020 г. до 6,9 % в 2021 г. В абсолютном выражении численность молодёжи NEET за год снизилась на 12,1 тыс. чел., составив 234,5 тыс. чел. При этом более половины (53 %) численности молодёжи NEET сконцентрировано на юге республики.

В территориальном разрезе больше всего безработных в количественном выражении в 2021 г. зафиксировано в густонаселенных южных регионах — г. Алматы (12 % от общей численности безработных по стране), Алматинской (11 %) и Туркестанской (9 %) областях, а меньше всего в Северо-Казахстанской области (3 %).

Тем временем наибольший уровень безработицы (выше республиканского уровня) подтверждается в г. Алматы (5,2 %), Туркестанской области (5,1 %), а также наблюдается в г. Шымкент (5 %). В то время как в регионы с уровнем безработицы ниже республиканского значения входят Карагандинская область (4, 5%), г. Астана (4,6 %), Актюбинская, Алматинская, ВКО, Костанайская и Павлодарская (все по 4,8 %) области (рис. 2).

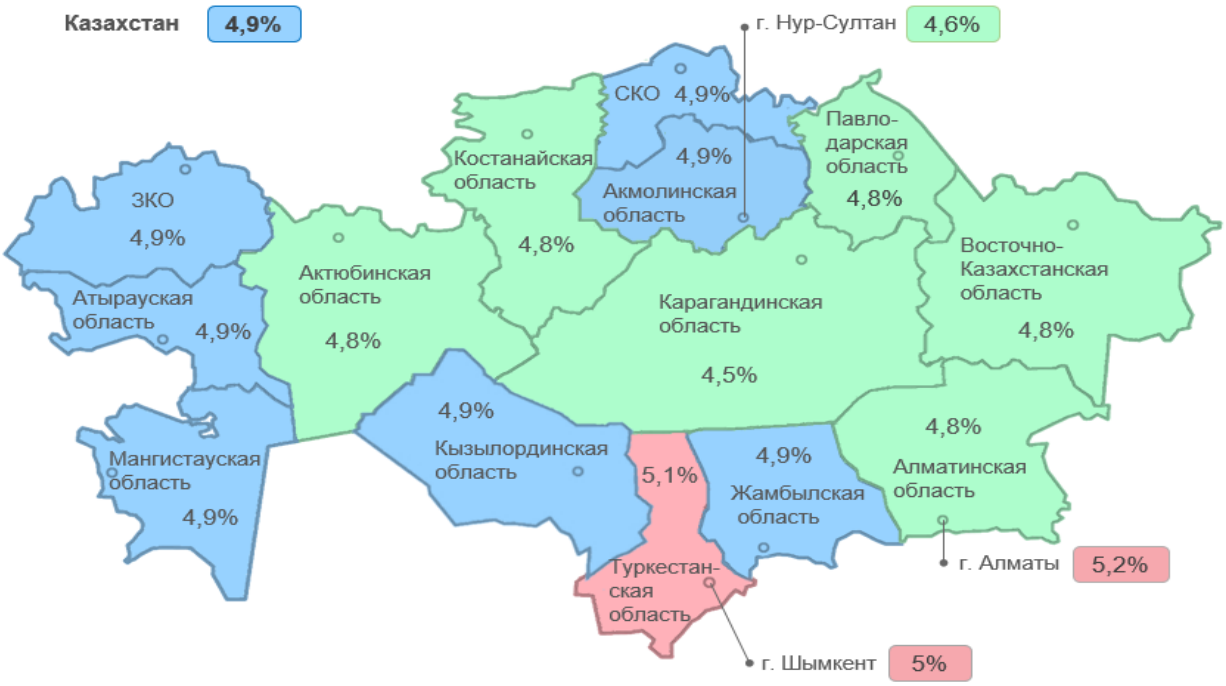


Рисунок 2. Уровень безработицы по регионам РК

Примечание. Составлен авторами на основе материалов БНС АСПиР РК.

Говоря об уровне образования безработного населения, то в этой структуре как среди мужчин, так и женщин преобладают лица, имеющие среднее специальное образование. К тому же за год их стало больше на 5 тыс. чел. и 13 тыс. чел., соответственно (рис. 3).

Помимо этого, в общем количестве безработных женщин также присутствует большая доля лиц, имеющих высшее образование (38 %). Безработные мужчины с высшим уровнем образования составляют лишь треть от общей численности безработных-мужчин.

В свою очередь, безработных мужчин и женщин со школьным образованием за год стало меньше на 6 тыс. (в обоих группах). Что, с одной стороны, повысило качество общего уровня навыков безработных граждан, но с другой — указывает на вопросы подготовки кадров, в частности, со средним специальным образованием (доля которых увеличилась).

Также интересна динамика продолжительности поиска работы безработными. Согласно статистическим данным, доля ищущих работу менее 1 месяца значительно уменьшилась — с 27 % в 2019 г. до 18 % в 2021 г. Вместе с тем за 3 года увеличилась доля безработных, ищущих работу от 30 до 90 дней (рис. 15). Что, прежде всего, может быть связано с карантином во время пандемии, когда люди столкнулись с ограничениями в работе, в том числе приостановлением деятельности предприятий в среднем на 1–3 месяца.

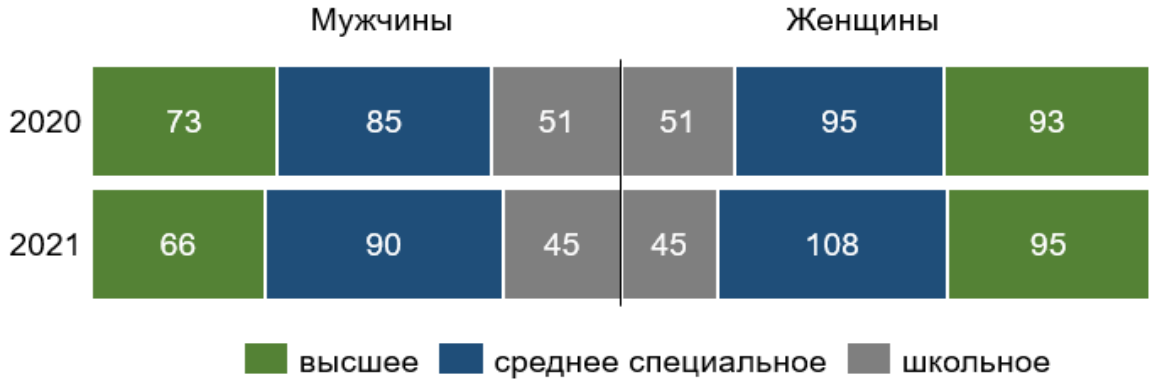


Рисунок 3. Уровень безработицы по регионам РК

Примечание. Составлен авторами на основе использованной литературы.

Наряду с этим уровень зарегистрированной безработицы по республике на конец 2021 г. составил 1,7% или 153,1 тыс. чел., обратившихся в органы занятости. В свою очередь, наибольший уровень зарегистрированной безработицы зафиксирован в Кызылординской, Жамбылской (обе по 3,7 %), Западно-Казахстанской (3,6 %) и Туркестанской (2,8 %) областях. Тогда как в оставшихся 13 регионах страны уровень зарегистрированной безработицы не превышает 2,5 %, или составляет двукратную разницу с официальной статистикой. При этом наименьшая доля зарегистрированных безработных наблюдалась в Алматинской, Акмолинской (обе по 0,9 %), Карагандинской (0,8 %) областях и г. Астане (0,3 %) (рис. 4).

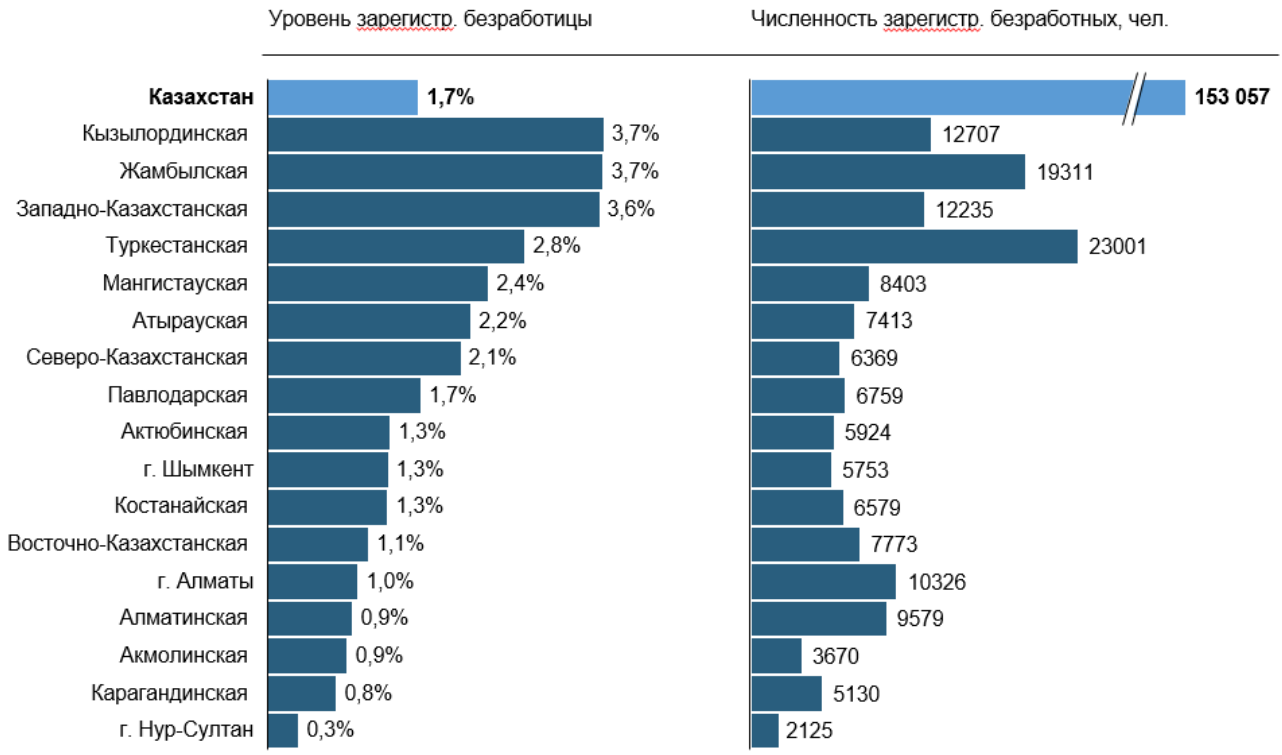


Рисунок 4. Зарегистрированная безработица по регионам в конце 2021 года

Примечание. Составлен авторами на основе использованной литературы.

Заметная разница между уровнем зарегистрированной безработицы и общим уровнем безработицы по стране говорит нам о том, что по-прежнему есть часть населения, которая, ввиду разных факторов, не состоит на учете (не зарегистрирована) в качестве безработных.

Выводы

Таким образом, одним из первоочередных условий для уменьшения безработицы в Республике Казахстан к эффективному и устойчивому развитию экономики является достижение оптимального уровня безработицы и сбалансированности ее областей. Наиболее важными предпосылками для этого являются потенциальная возможность экономики и социальной структуры Казахстана разработать программы для сбалансированности безработицы. Кроме того, обеспечение стратегически системных программ уменьшения безработицы приведут к понижению последствий влияния на экономику, при этом учитывается низкий уровень развития программ по социоэкономическим последствиям безработицы во многих областях страны и неравномерность ее появления, а также сокращение финансирования программ отдельных областей по безработице. Формирование оптимальных условий для изменения безработицы областей страны должно относиться к приоритетным векторам государственной экономической политики, которые реализуются в рамках обеспечения ресурсных возможностей конкретной области Казахстана.

Список литературы

McClelland, A. & Macdonald, F. (1998). The social consequences of unemployment.

Androniceanu, A., Burlacu, S., Drăgulănescu, I. V., & Nicolae, E. E. (2017). New trends of businesses digitalization in Romania and the behavior young consumers. In BASIQ International Conference: New Trends in Sustainable Business and Consumption, Graz, Vol. 31, 27-35).

Bodislav, D. A., Buzoianu, O. A. C., Burlacu, S., & Rădulescu, C. V. (2020). Analysis of companies in Romania from the perspective of risk perception and the management needs thereof. *Economic Convergence in European Union*, 341.

Bran, F., Alpopi, C., & Burlacu, S. (2018). Territorial Development-Disparities between the Developed and the least Developed Areas of Romania. *LUMEN Proceedings*, *6*(1), 146-155.

Burlacu, S., Gavrilă, A., Popescu, I. M., Gombos, S. P., & Vasilache, P. C. (2020). Theories and Models of Functional Zoning in Urban Space. *Revista de Management Comparat International*, 21(1), 44-53.

Carra, C., Burlacu, S., & Faggianelli, D. (2016). Violence within organizations in the health and medico-social sectors, comparative analysis france-romania. *Administratie si Management Public*, (27), 123.

Jianu, I., Dobre, I., Bodislav, D. A., Radulescu, C. V., & Burlacu, S. (2019). The implications of institutional specificities on the income inequalities drivers in european union. *Economic Computation and Economic Cybernetics Studies and Research*, *53*(2), 59-76.

Negescu, M. D.; Burlacu, S; Mitriţă, M; & Buzoianu, O. C. A. Managerial Analysis of Factoring at the International Level *Challenges of the Contemporary Society*. Proceedings; Cluj-Napoca Vol. 13, Iss. 1: 99-102. Cluj-Napoca: Babes Bolyai University. (2020)

Profiroiu, C. M., Bodislav, D. A., Burlacu, S., & Rădulescu, C. V. (2020). Challenges of Sustainable Urban Development in the Context of Population Growth. *European Journal of Sustainable Development*, 9(3), 51-51.

Radulescu, C. V.; Ladaru, G.-R.; Burlacu, S.; Constantin, F.; Ioanăş, C.; & Petre, I. L. (2021) Impact of the COVID-19 Pandemic on the Romanian Labor Market. *Sustainability 2021*, 13, 271. https://doi.org/10.3390/su13010271

Rădulescu, C. V., Bodislav, D. A., & Burlacu, S. (2018). Demographic explosion and it governance in public institutions. *Managerial Challenges of the Contemporary Society. Proceedings*, *11*(1), 18.

Rădulescu, C. V., Dobrea, R. C., & Burlacu, S. (2018) The business management of distress situations. The 12th international management conference "Management Perspectives in the Digital Era" Novembre 1st-2nd, 2018, BUCHAREST, ROMANIA, 1, 741-747

Sarbu, R., Alpopi, C., Burlacu, S., & Diaconu, S. (2021). Sustainable urban development in the context of globalization and the health crisis caused by the covid-19 pandemic. *Les Ulis: EDP Sciences.* doi:http://dx.doi.org/10.1051/shsconf/20219201043

Г.А. Райханова, Н.Б. Куттыбаева, Р.Е. Жапарова , Г.Е. Жакина, Б. М. Макалакова

Мемлекеттегі жұмыссыздықтың экономикалық және әлеуметтік салдары

Аңдатпа:

Мақсаты: Қазақстандағы жұмыссыздықтың әлеуметтік-экономикалық салдарын зерттеу.

Әдісі: Зерттеуде жүйелік талдау; топтастыру әдісі; нормативтік әдіс; экологиялық-экономикалық бағалау және салыстырмалы талдау әдісі; материалдық баланс әдісі; есептеу-аналитикалық әдіс және т.б. сияқты әдістер қолданылды. Осы зерттеуде эмпирикалық зерттеу үшін авторегрессиялық бөлінген лаг (ARDL) әдісі пайдаланылды. Зерттеуге арналған материалдар қазақстандық, ресейлік және шетелдік ғалымдардың еңбектерімен ұсынылған.

Қорытынды: Зерттеуде 2018-2021 жылдар аралығында жұмыссыздықтың экономика мен әлеуметтік құрылымға әсерін мұқият зерттеуге тырысқан. ЖІӨ өсу қарқыны — бұл экономикалық өсудің көрсеткіші ретінде қолданылатын тәуелді айнымалы. Осы зерттеуде түсіндіретін айнымалылар жұмыссыздық, халықтың өсу қарқыны, инфляция деңгейі, тікелей шетелдік инвестициялар және мемлекеттік шығындар болып табылады. Зерттеудің эмпирикалық нәтижелері жұмыссыздық пен инфляция деңгейінің экономикалық өсумен теріс байланысы бар және статистикалық маңызды екенін көрсетеді. Халық санының өсу қарқыны экономикалық өсу мен әлеуметтік құрылымға оң және статистикалық маңызды әсер етеді. Айнымалылар арасында қысқа мерзімді коинтеграция бар. Нәтижелерден Үкімет экономикалық өсуді жеделдету және елдегі жұмыссыздықты азайту үшін жұмысқа орналасу мүмкіндіктерін құру үшін тиісті шаралар қабылдауы керек.

Тұжырымдама: Жұмыссыздықты арттырудың қазіргі заманғы сын-қатерлерімен байланысты экономикалық тенденциялар оның экономика мен әлеуметтік құрылымға әсер етуінің салдарын көрсетті. Жұмыссыздықты азайту жөніндегі қолданыстағы бағдарламалардың халықтың қажеттіліктерін қанағаттандырмауының негізгі себептері анықталды. Ұсынылған зерттеулер мен эксперименттік нәтижелерді мемлекеттік ұйымдар Қазақстан Республикасындағы экономикаға жұмыссыздықтың салдарын азайту мақсатында пайдалана алады. Зерттеу кіріспе, әдістер мен материалдарды негіздеу, әдебиеттерге шолу, зерттеу нәтижелері, қорытынды және пайдаланылған әдебиеттер тізімінен тұрады.

Кілт сөздер: жұмыссыздық, тоқырау, өмір сапасы, кірістілік деңгейі, төлем қабілеттілігі, әлеуметтік жағдай.

G.A., Raikhanova, N.B. Kuttybaeva, R.E. Zhaparova, G.E. Zhakina, B.M. Makalakova

Economic and social consequences of unemployment in the government

Abstract

Object: to study the socio-economic consequences of unemployment in Kazakhstan.

Methods: the study used such methods as system analysis, grouping method, normative method, method of ecological and economic assessment and comparative analysis, method of material balances, calculation and analytical method, etc. In this study, the autoregressive distributed Lag (ARDL) technique was used for empirical research. The materials for the study are presented by the works of Kazakhstani, Russian and foreign scientists.

Findings: in this study, an attempt was made to thoroughly study the impact of unemployment on the economy and social structure in the period from 2018 to 2021. The GDP growth rate is a dependent variable used as an indicator of economic growth. In this study, the explanatory variables are unemployment, population growth, inflation, foreign direct investment and government spending. The empirical results of the study show that the levels of unemployment and inflation have a negative relationship with economic growth and are statistically significant. Population growth rates have a positive and statistically significant impact on economic growth and social structure. There is a short-term cointegration between variables. The results suggest that the Government should take adequate measures to create employment opportunities to accelerate economic growth and reduce unemployment in the country.

Conclusions: economic trends related to the modern challenges of increasing unemployment have shown the consequences of its impact on the economy and social structure. The main reasons why the existing programs to reduce unemployment do not meet the needs of the population are identified. The proposed research and experimental results can be used by state organizations in order to reduce the effects of unemployment on the economy in the Republic of Kazakhstan. The study consists of an introduction, justification of methods and materials, literature review, research results, conclusion and list of references.

Keywords: unemployment, stagnation, quality of life, level of profitability, solvency, social status.

DOI 10.31489/2022Ec4/216-226
JEL code: M31
УДК 339.138
ГРНТИ 69.01.14

М.Р. Смыкова[1], Э.Б. Оразгалиева[*2], Н.П. Сохатская [3], К.Р. Баданова [4]

[1, 2 ,3]Алматы Менеджмент Университет, Алматы, Казахстан;
[4]Казахский университет путей сообщения, Алматы, Казахстан
[1]mraisovna@mail.ru ,[2]elmaira.orazgaliyeva@gmail.com, [3]s.natali54@mail.ru, [4]kaniskhan-2011@mail.ru

[1]https://orcid.org/0000–0003–2373–4165, [2]https://orcid.org/0000–0001–7030–7102 ,
[3]https://orcid.org/0000-0002-9708-2756

Методы оценки качества сервисных услуг в медицинских учреждениях

Аннотация:

Цель: В статье на основании анализа теоретических подходов к методикам оценки сервисных услуг определено применение одного из наиболее обоснованного и комплексного подхода метода квалиметрии, который был адаптирован к условиям и специфики деятельности медицинских учреждений.

Методы: Кабинетные исследования теоретических материалов на основании обзора теоретических источников, маркетинговые исследования в форме экспертной оценки.

Результаты: Проведенный анализ теоретических источников позволил определить, какие методы оценки качественных параметров являются наиболее приемлемыми и эффективными в сфере медицинских услуг. Представлена адаптированная модель оценки качества сервисных услуг в сфере медицины на основании проведенной экспертной оценки.

Выводы: Учитывая результаты исследования, можно сделать вывод, что представленная методика квалиметрии для оценки качественных характеристик медицинских услуг позволит более глубоко и точечно определить слабые стороны в процессе сервиса и оценить показатели уровня удовлетворенности потребителей медицинским сервисом.

Ключевые слова: качество, методы, метод квалиметрии, медицинские услуги, сервис, качественные параметры.

Введение

В процессе предоставления сервисных услуг в сфере медицины оценка качества имеет специфический характер и дифференцируется в зависимости от типа медицинского учреждения. Медицинская деятельность является одной из самых жестко регулируемых со стороны государства видов деятельности, поэтому большое внимание с точки зрения качества целесообразно уделять именно сервисным услугам. Особенностью оценки качества услуг в медицине является то, что с одной стороны, оценивается качество лечения,а с другой — качество сервисных услуг и их доступность (Michael Marmot, Jessica J Allen, 2014).

Единого подхода к методике оценки качества медицинских услуг нет, так как у каждой формы есть свои особенности и определенные требования.

Обзор литературы

Вопросы качества медицинских услуг являются актуальными и формируют не только степень доверия и признания медицинского учреждения пациентами и экспертами, но и его имиджевую составляющую, в конечном итоге способствуют повышению спроса и популярности. В целом, важно не только понимание того, какие параметры и факторы, влияют на качество медицинских услуг, но и то, как можно их оценивать, какие методические подходы являются наиболее эффективными и объективными. В этой связи проведен анализ мнений классической школы по методикам оценки качества сервисных услуг, выбраны наиболее приемлемые для медицинских учреждений, таких как медицинские центры.

Сравнение моделей по оценке качества услуг представлено в таблице 1.

[*] Автор-корреспондент. E-mail: *elmaira.orazgaliyeva@gmail.com*

Таблица 1. Модели оценки качества услуг

Модель оценки качеством услуг	Автор, год	Возможности по применению в сфере медицины
Модель «gap»	1980-е А. Парасураман, В. Зейтамль и Л. Берри	Данная модель учитывает ожидания клиентов. Применение данной модели предполагает использования опроса ожиданий потребителей до оказания услуг и их реального исполнения, что дает возможность увидеть расхождения, выявить зоны, которые не удовлетворены медицинским учреждением и в каких случаях возникает когнитивный диссонанс пациентов
SERVQUAL	1980-е А. Парасураман, В. Зейтамль и Л. Берри	При использовании метода SERVQUAL можно сформировать и структурировать перечень основных показателей по качеству услуг. Секционная анкета по параметрам качества поможет полностью выявить восприятия и ожидания пациентов, просчитать степень удовлетворенности пациентов
Модель нейтральных зон	1980-е Е.Р. Кедотт и Н. Терджен	Позволяет дифференцировать зоны по степени значимости у потребителей, что дает возможность акцент сделать на те параметры качества, которые наиболее значимы с точки зрения пациентов. Структурирование зон позволяет разработать карту качества услуг по каждому пациенту
Модель Кано	Конец XX в., Н. Кано	Модель Кано обеспечивает понимание того, какие качественные параметры или потребительские свойства являются необходимыми, обратного действия, привлекательные и не оказывающие влияние на мнение пациента. Методика построена на основе специализированного опроса, позволяющего понять, как нужно моделировать услугу для того, чтобы повысить степень удовлетворенности и лояльность клиентов
Метод квалиметрии	Начало XX в., П. Бриджмен	Метод квалиметрии позволяет оценить качественные параметры по двум аспектам: с одной стороны, учесть значимость качественных характеристик, с другой — оценить уровень оценки данного показателя. Комбинированное использование показателей в медицине особенно актуально при оценки качественных параметром сервисных услуг

Примечание. Составлена авторами на основании источников (П.В. Бриджмен, 1934).

В 1980-е гг. авторами А. Парасураман, В. Зейтамль и Л. Берри был разработан метод оценки качества с применением модели «gap». Данная методика оценки качества услуг используется для выявления несоответствия предоставляемого качества сервисных услуг ожиданиям потребителей. Для того, чтобы качество соответствовало потребительским предпочтениям целесообразно периодически проводить мониторинг и исследование возникающих разрывов, которые особенно важны в сфере медицине, в связи с тем, что уровень удовлетворенности потребителей является основным оценочным показателем сервиса (A.A. Parasuraman, 1985).

По данной методике выделяют пять основных разрывов, а именно разрыв между ожиданиями пациентов и их восприятием самой компанией; между восприятием компанией ожиданий пациентов и трансформацией этого восприятия в спецификации качества услуг; между спецификациями качества услуг и качеством предоставляемых услуг; между предоставляемыми услугами и внешней информацией; между ожиданиями пациентов и их восприятием предоставляемых услуг (С.Я. Гродзенский, 2017).

В сфере медицины в настоящее время активно используется для оценки качества услуг модель SERVQUAL. Методика оценки качества SERVQUAL помогает структурировать основные показатели качества сервиса и делит на такие параметры, как надежность, отзывчивость, гарантия, эмпатия (А.О. Богданова, А.Ю. Меньщикова, 2016). Данная методика позволяет оценить сервис и определить пути улучшения качества услуг, однако в этой модели не уделяется внимание тому, какие показатели не влияют на восприятия качества со стороны пациентов. Поэтому была сформирована новая методика с использованием нейтральных зон.

Модель нейтральных зон определяет восприятие клиента, потребителя относительно показателей качественных параметров предоставленных услуг. Эта модель эффективнее всего обеспечивает дифференциацию зон с учетом значимости их для пациентов и позволяет определить, какие параметры качества не влияют на потребителя, а какие оказывают значительное влияние. Авторы модели определили впервые, что при оценке качества услуг могут быть сформированы нейтральные зоны, которые не влияют на удовлетворённость потребителей (Swapna Bhargavi Gantasala, Prabhakar Venugopal Gantasala, Krishna Naik Chanda Naik Gari, 2012). В результате авторами были выявлены элементы обслуживания, которые могут положительно или негативно повлиять на удовлетворенность потребителей. В соответствие с данной моделью все элементы обслуживания разделены на четыре группы: критические, нейтральные, приносящие удовлетворение, приносящие разочарование.

В целом, авторами было отмечено, что существует некая зона, в пределах которой пациент придерживается нейтрального мнения по показателям качества услуг. Если качество предоставления услуг выходит за рамки этой нейтральной зоны, а именно за пределы ожиданий клиента, только тогда у пациента возникает удовлетворенность либо, наоборот, неудовлетворенность качеством услуги (Ю.И. Ребрин, 2013).

Данная методика позволяет выявить нейтральные, негативные и позитивные зоны, однако не дает возможность сформировать конкурентные качественные параметры в сфере услуг.

В связи с чем была сформирована новая методика оценки качества услуг и удовлетворённости клиентов ученым Н. Кано, который предложил более полный вариант эффективного способа оценки качества, основанный на наилучшем удовлетворении потребностей клиентов (А.Ю. Курочкина, 2017).

Данная методика оценки нацелена на определение того, какие потребности клиента требуют максимального удовлетворения, и на удовлетворение каких требований клиенты не обращают внимание. Эта модель помогает выявить направление, в котором компания должна двигаться и развиваться, чтобы повысить удовлетворенность клиентов. Согласно Н. Кано, существуют три элемента качества: основное качество — обязательные характеристики услуги, то есть то качество, которое непременно должно быть у услуги; ожидаемое качество — качество, отвечающее требованиям клиентов (то есть, чем выше ожидаемое качество услуги, тем выше удовлетворенность клиентов); привлекательное качество — качество услуги, превышающее требования и ожидания клиентов.

Метод Кано можно использовать в сфере медицины, так как позволяет понять сильные и слабые стороны в предоставлении сервисных услуг и смоделировать услуг в соответствии с ожиданиями и требованиями пациентов. Адаптируя данный метод оценки к сервисным услугам в медицине, можно отметить следующие специфические особенности:

- для разного типа медицинских учреждений, с различными функциональными специализациями создается специальный перечень положительных и отрицательных вопросов;
- применение модели Кано не в полном объеме позволит управлять качеством услуги, так как процесс обслуживания многофункциональный и требуется более системный и комплексный подход.

Методы

В качестве методов исследования использованы кабинетные исследования в форме обзора теоретических источников основоположников методов оценка качества услуг. Анализ теоретических источников производился с помощью методов ранжирования и группировки. Для формирования параметров качественных характеристик в сфере медицинских услуг использовался метод экспертной оценки, который позволил дифференцировать показатели по степени значимости.

Результаты и обсуждения

При формировании методических подходов к оценке качества сервисных услуг в медицинских учреждениях важно определить и структурировать параметры качественных характеристик, которые включают в себя две группы. Первая группа — параметры нематериальных свойств, вторая — параметры материальных свойств. В каждой группе можно выделить соответственно основные оценочные показатели (рис. 1).

Рисунок 1. Качественные параметры медицинских услуг (Н.В. Горошко, Е.К. Емельянова, 2019).

Для данного этапа важно определить последовательность процесса и какие качественные параметры значимы и измеримы. С этой целью рассмотрим процесс обслуживания гостей и выявим значимые качественные параметры и возможные варианты отклонений. Одновременно выявляются контролируемые процессы для понимания того, как их можно корректировать и совершенствовать. Впоследствии формируются первоначальные стандартные требования к обслуживанию клиентов, которые положительно влияют на процесс качества предоставляемых услуг.

Представленные на рисунке 1 качественные параметры частично зависят от принятых в медицине стандартов. Однако важное значение уделяется качеству сервисных услуг, оценку которых можно производить с применением инструментов маркетингового анализа.

Для первого блока параметров нематериальных свойств можно оценивать деятельность по следующим показателям:

1. Оценка дизайна здания, холла, зоны ожидания, медицинских кабинетов, уровень их оснащённости.

2. Оценка уровня инновации и цифровизации медицинских услуг, а также насколько внедренная система удобна и доступна в использовании для всех пациентов.

3. Исследование уровня узнаваемости медицинского учреждения и доверия к ней со стороны потребителей, признание и, как следствие, высокий уровень востребованности врачей.

Для второго блока качественных параметров материального свойства в медицинских учреждениях в меньшей степени оказывает влияние качество сервиса, а в большей — акцент делается на соблюдение стандартов, профессионализм врачей. Рассмотрим основные направления оценки качественных материальных параметров:

1. Соблюдение государственный и утвержденных медицинским учреждениям стандартов предоставления медицинских услуг. Профессионализм врачей оценивается через призму его функциональных обязанностей и результатов лечения.

2. Безопасность предоставляемых медицинских услуг — это наиболее сложный параметр, и объективная оценка может быть дана посредством экспертной комиссии, что не дает возможность учитывать его при формировании методических подходов к оценке сервисных услуг в медицине.

3. Эргономические показатели в медицинских учреждениях могут характеризоваться разносторонними показателями. От того, насколько точно и в полном объеме они учтены при формировании качественных показателей, зависит полноценность выбранной методики. Оценка, в основном,

направлена на удобство записи пациента, его приема и обслуживания, условий при ожидании, минимизации очереди и т.д.

4. Экологические параметры в большей степени нацелены на выборе лекарственных препаратов врачами, а также по возможности создании экологически чистой атмосферы.

Существенный вклад при формировании процесса обслуживания пациента и повышения качества уделяется перечню дополнительных услуг, которые повышают потребительскую ценность сервисных услуг в медицинских учреждениях.

В теоретической полемике принято выделять три уровня сервисных услуг в медицинской деятельности, которые оказывают непосредственное влияние на качество услуг. В целом, их можно представить схематично, показать их взаимосвязь (рис. 2).

Как видно из представленных данных, оценка сервиса должна осуществляться по трем направлениям:

- первое направление — создание сервисного окружения, которое включает условия обслуживания, комфортный способ ожидания, атмосферу, освещение, уровень санитарно-гигиенических стандартов, возможности цифрового сервиса до получения медицинских услуг и после;
- второе — предоставление основных сервисных услуг, обслуживание пациентов медицинскими сотрудниками и отношение к нему на этапе предоставления услуг;
- третье направление — любые услуги, которые не являются обязательными, но повышают качество обслуживания пациентов, усиливают полезность и удобство предоставления услуг.

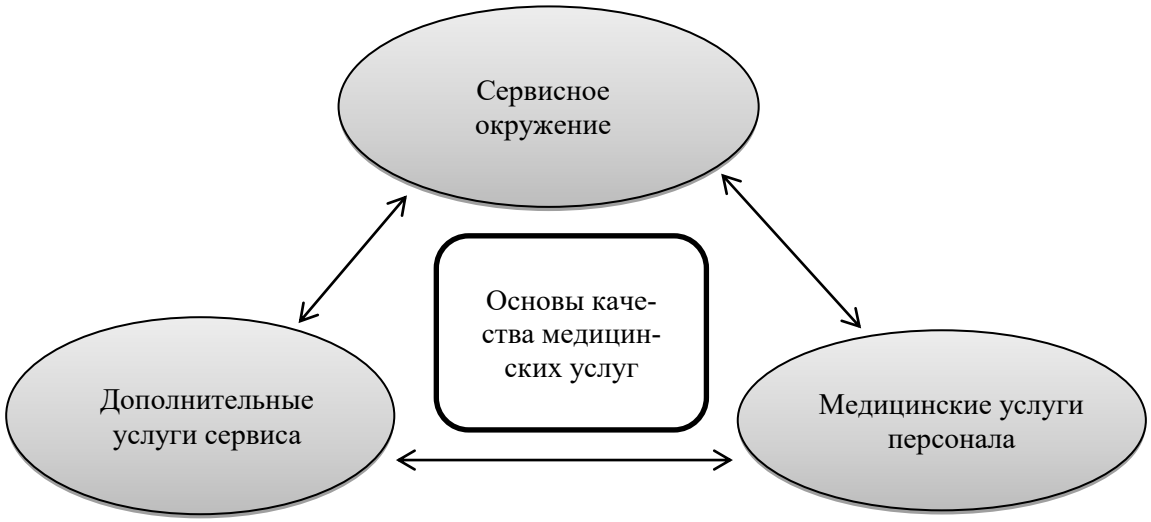


Рисунок 2. Основы качества медицинских услуг (Б.П. Дьяконов, 2005)

Среди дополнительных услуг, которые могут быть представлены в медицинских учреждениях, их можно разделить на следующие группы:

1. Предоставление услуг питания и напитков.
2. Предоставление услуг «второго медицинского мнения», которые обеспечивают повышение качества медицинского сервиса (Н.В. Горошко, Е.К. Емельянова, 2019.).

Услуги «второго медицинского мнения» призваны дополнительно проводить диагностику с помощью зарубежных врачей на основании данных обследования, и пациентам предоставляется интерпретация данных, уточнение диагноза. Предлагаемая услуга повышает качество сервиса и медицинского обслуживания пациентов.

В целом, все предложенные мероприятия и рекомендации носят интегрированный характер, и сбой одного из параметров, в целом, может отрицательно отразиться на качестве предоставляемых услуг.

Интегрированная система оценки качества с использованием метода квалиметрии позволит сформировать методический подход, который учитывает разносторонние показатели с учетом трех блоков качества сервисных услуг. Метод квалиметрии для анализа качественных характеристик

предусматривает ранжирование показателей в зависимости от степени значимости и в то же время учет реальных показателей (Б.П. Дьяконов, 2005).

Данный подход актуален именно в медицинских учреждениях, так как учитывается не только реальная оценка качества предоставляемых услуг, но и значимость каждой характеристики. Методологическая основа в указанном методе базируется на том, что все качественные характеристики в медицине разделены на три блока: качество сервисного окружения, качество сервиса обслуживания пациентов и качество дополнительного сервиса. Показатели качества сервисного окружения включают перечень характеристик, которые можно оценить с помощью опроса пациентов. К таким характеристикам можно отнести следующие показатели: условия ожидания пациентов; доступный способ записи к врачам; соблюдение чистоты и санитарных норм; уровень развития и качество цифрового сервиса; атмосфера в медицинском учреждении (освещение, кондиционирование, поддержание приемлемого уровня температуры и влажности); материальное окружение — дизайн интерьера и экстерьера медицинского учреждения, современное медицинское оборудование.

Второй блок — показатели обслуживания параметров учитывают следующие качественные параметры культуры обслуживания: доброжелательность и радушие; обходительность; заботливость, тактичность; мастерство; внимательность, точность, четкость; умение пользоваться улыбкой; эрудированность; сдержанность; приветливость, вежливость.

Третий блок — дополнительный блок, который включает следующие характеристики: услуги питания, услуги консультанта, информационно-консультационные услуги, послепродажное сопровождение пациента.

Рассмотрим поэтапно процесс оценки качества с помощью данной модели:

1. Первоначально определяется показатель качества сервисных услуг в медицине, который основан на интегральном методе, то есть как произведение веса качественных характеристик на оценку показателей пациентами услуг по всем блокам в реальном исполнении предоставления дополнительных услуг, оформление интерьера и экстерьера.

2. С помощью формулы 1 рассчитываются величины единичных показателей для анализируемой сервисных услуг и для базовой модели (обобщенный показатель качества услуги).

$$ПК = \sum_{i=1}^{n} m_i q_i \qquad (1)$$

где q_i — комплексный показатель i-го свойства качественных характеристик; m_i — коэффициент весомости комплексного показателя.

При разработке методики оценки показателя качества сервисных услуг в медицинских услугах целесообразно решить следующие вопросы:

- определить весомость комплексных показателей;
- установить номенклатуру единичных показателей в составе комплексных показателей;
- определить критерии оценки единичных показателей.

Для оценки окончательного показателя, оценивающего качество услуг, необходимо определить вес или значимость каждого показателя.

Для определения весомости показателей была проведена экспертная оценка. В качестве экспертов были представители менеджмента медицинских учреждений. Коэффициенты весомости распределены от 1 до 3. Показатель *3* означает наиболее высокий уровень значимости качества; *2* – средний уровень значимости; значение показателя *1* — низкий уровень значимости с точки зрения потребителей. Для расшифровки параметров, используемых для оценки качественных параметров, разработана модель показателей и критерии их оценки, которые представлены в таблице 2.

Таблица 2. Параметры оценки качественных характеристик сервисных услуг медицинских учреждений с применением метода квалиметрии

Комплексный показатель	Перечень качественных показателей по блокам	Уровни значимости
1. Качество сервисного окружения	1.1 Легкость записи на прием	3
	1.2 Условия ожидания пациентов	2
	1.3 Качество цифрового сервиса	3
	1.4 Соблюдение чистоты и санитарных норм	3
	1.5 Атмосфера в медицинском учреждении	2
	1.6 Дизайн интерьера и экстерьера	1
	1.7Современное медицинское оборудование.	2
2. Качество обслуживания	2.1 Доброжелательность и радушие	2
	2.2 Обходительность, заботливость, тактичность	3
	2.3 Мастерство, профессионализм	3
	2.4 Внимательность	3
	2.5 Сдержанность	1
	2.6 Приветливость, вежливость	2
	2.7 Точность, четкость	3
3. Качество дополнительных услуг	3.1Услуги питания	2
	Информационно-консультационные услуги	3
	Послепродажное сопровождение пациента	2
Примечание. Составлена авторами на основе проведенных исследований.		

Показатели послепродажного сопровождения пациента имеют свои особенности в сфере медицины, так как для пациента часто важна связь как с медицинским учреждением, так и с их персоналом уже после проведенного обслуживания.

Рассмотрим механизм реализации методики и особенностей их результативности. В целом, данный механизм представлен на рисунке 3.

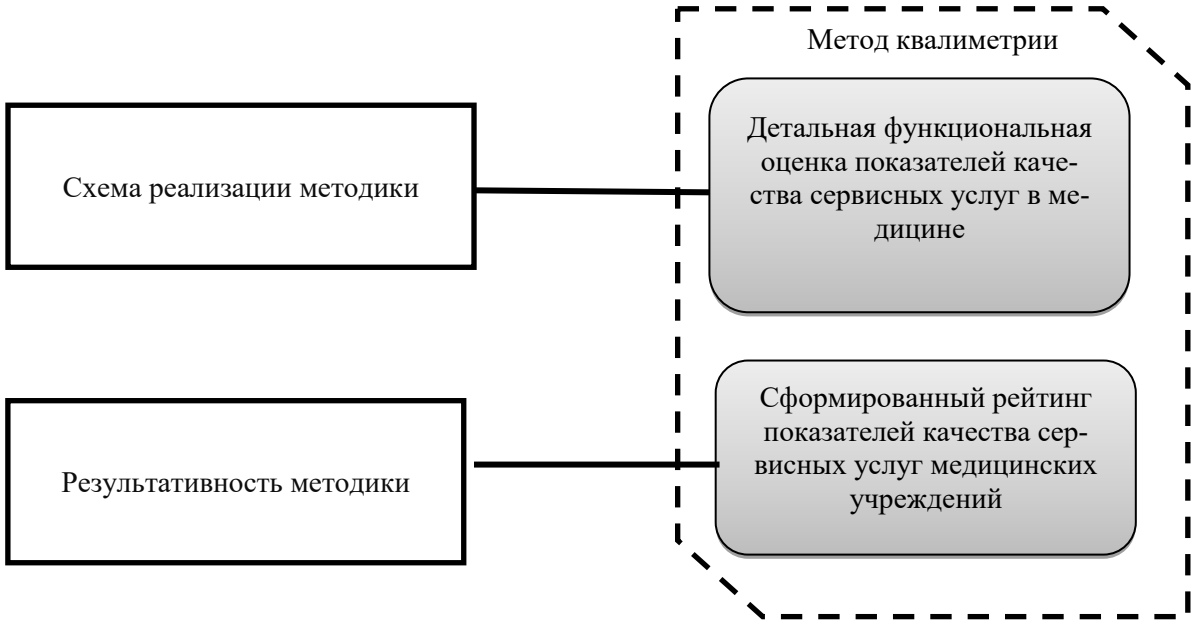


Рисунок 3. Особенности применения метода квалиметрии в медицинских учреждениях

Примечание. Составлен авторами на основе проведенных исследований.

Представленная методика обеспечивает в большей степени оценку функциональных показателей качества с применением разнообразных методов (Д.В. Овсянко, 2010). Результирующим итоговым показателем оценки качества сервисного обслуживания является показатель степени удовлетворенности пациентов, который включает все параметры. Данная методика позволяет выявить слабые места в

сервисной деятельности медицинских учреждений и определить пути совершенствования показателей качества.

При оценке степени удовлетворенности определяется уровень удовлетворенности по следующим уровням: *очень доволен, доволен, отчасти удовлетворен, отчасти не удовлетворен, не доволен, крайне недоволен.* В целом, схема оценки и управления качеством сервисных услуг медицинских учреждений представлена на рисунке 4.

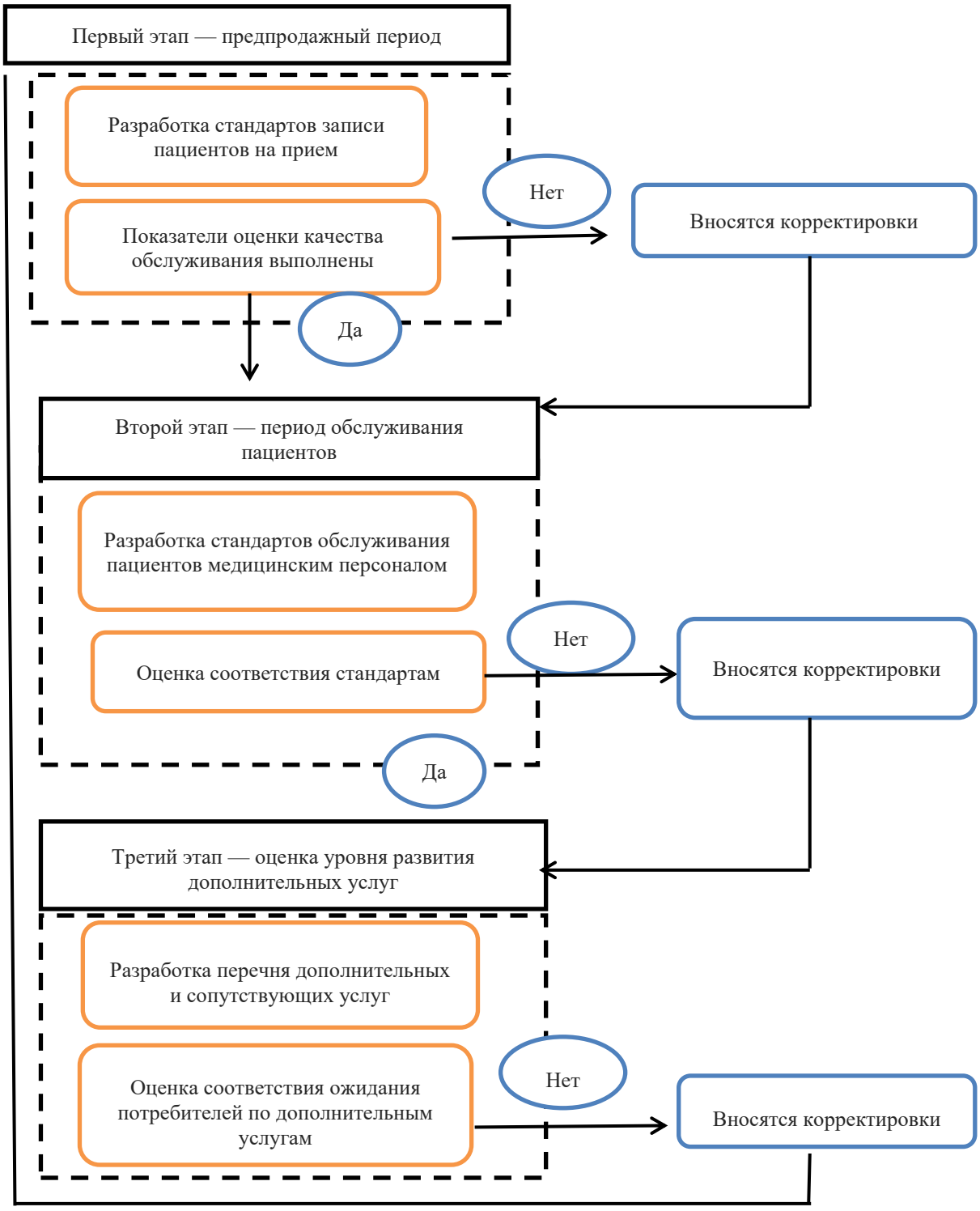


Рисунок 4. Схема процесса оценки качества сервисных услуг в медицинских учреждениях

Примечание. Составлен автором (Е.В. Песенникова, О.В. Гриднев, С.С. Кучиц, 2017).

Как видно из представленной схемы, процесс оценки должен производиться поэтапно, при этом можно определить с использованием метода квалиметрии на каждом этапе нужно либо вводить корректировки в случае их не соответствия, или если все соответствует ожиданиям и требованиям потребителей менять ничего не надо (Е.В. Песенникова, О.В. Гриднев, С.С. Кучиц, 2017).

Таким образом, предложенная адаптированная модель обеспечит не только развернутый анализ качественных параметров сервисных услуг, но и релевантную систему их оценки.

Заключение

Разнообразие методов оценка качества услуг позволяет, на основе их анализа, понять какие методы имеют преимущества и недостатки. В то же время сфера медицины имеет свои специфические особенности и более чувствительна к вопросам сервиса. Обзор литературы по основным методам оценка качества сервисных услуг выявил, что наиболее привлекательными и адаптивными к сфере медицины являются методы SERVQUAL, *gap,* метод квалиметрии. Каждый метод обладает своими особенностями, в рамках данного исследования рассмотрен и адаптирован к сфере медицинских услуг метод квалиметрии оценки качества.

Проведенный анализ данного метода позволил с учетом особенностей медицинских услуг определить основные блоки и показатели качественных характеристик в каждом блоке. На основании проведенного исследования определены с помощью экспертной оценки уровни значимости каждого показателя качественных характеристик с учетом специфики медицинского сервиса.

Представленная методика оценки качества сервисных услуг адаптирована к деятельности медицинских учреждений, учтены этапы предоставления услуг и их особенности, сформированы основные направления исследования и процесс оценки для последующей корректировки бизнес-процессов.

Использованием метода квалиметрии при оценке качества медицинских услуг целесообразно для повышения показателей степени удовлетворённости пациентов и, в целом, на имидже медицинского учреждения.

Статья подготовлена при финансировании Комитета науки Министерства науки и высшего образования Республики Казахстан в рамках выполнения проекта по теме AP13268946 «Качество цифровых услуг медицинских учреждений в Казахстане в условиях пандемии: методология оценки и механизмы совершенствования».

Список литературы

Michael Marmot. Allen Social determinants of health equity / Marmot Michael, J. Jessica // Am J Public Health. — 2014 Sep; 104 Suppl 4 (Suppl 4).

Parasuraman A. A Conceptual Model of Service Quality and Its Implications for Future Research / A. Parasuraman, Valarie A. Zeithaml, Leonard L. Berry // Journal of Marketing. — 1985. — Vol. 49 (4). — P. 41–50.

Swapna Bhargavi. «SERVQUAL in RETAILING» / Swapna Bhargavi Gantasala, Prabhakar Venugopal Gantasala, Krishna Naik Chanda Naik Gari. LAP LAMBERT Academic Publishing, 2012. — 324 p.

Богданова А. О. Сравнительный анализ моделей RATER и SERVQUAL / А. О. Богданова, А. Ю. Менщикова // Экономика и социум. — №6–1 (25). — 2016. — С. 285–287.

Бриджмен П. В. Анализ размерностей / П. В. Бриджмен; пер. со второго англ. изд. под ред. акад. С. И. Вавилова. — Л.–М.: ОНТИ. Гос. технико-теорет. изд., 1934. — 120 с.

Горошко Н. В. Сервис «второе медицинское мнение» на рынке регионального медицинского туризма / Н. В. Горошко, Е. К. Емельянова // Электрон.науч.-метод. журн. Омск. ГАУ. — 2019. — № 4 (19). — Октябрь–декабрь.

Гродзенский С. Я. Управление качеством / С. Я. Гродзенский. — М.: Проспект, 2017. — 226 с.

Дьяконов Б. П. Интеграция менеджмента качества со стратегическим менеджментом с использованием управления проектами / Б. П. Дьяконов // От менеджмента качества к качеству менеджмента и бизнеса: материалы Междунар. науч.-практ. конф. (г. Санкт-Петербург, 4–6 октября 2005 г.). — СПб., 2005. — С. 134.

Курочкина А. Ю. Управление качеством услуг / А. Ю. Курочкина. — М.: Юрайт, 2017.

Овсянко Д. В. Направления применения компонентов менеджмента качества в стратегическом управлении компаниями / Д. В. Овсянко // Научный доклад. — № 9 (R). — 2010. — СПб.: ВШМ СПбГУ, 2010. — С. 8.

Песенникова Е. В. Медицинские услуги или медицинская помощь — актуальный вопрос для государственных учреждений здравоохранения / Е. В. Песенникова, О. В. Гриднев, С. С. Кучиц // Research'n Practical Medicine Journal. — 2017. — № 4(4). — С. 156–164. https://doi.org/10.17709/2409-2231-2017-4-4-17

Ребрин Ю. И. Управление качеством:учеб. пос. / Ю. И. Ребрин. — Таганрог: ТРТУ, 2013. — 358 с.

М.Р. Смыкова, Э.Б. Оразгалиева, Н.П. Сохатская, К.Р. Баданова

Медициналық мекемелердегі сервистік қызметтердің сапасын бағалау әдістері

Аңдатпа

Мақсаты: Мақалада сервистік қызметтерді бағалау әдістеріне теориялық тәсілдерді талдау негізінде медициналық мекемелер қызметінің шарттары мен ерекшеліктеріне бейімделген квалиметрия әдісінің неғұрлым негізделген және кешенді тәсілдерінің бірін қолдану анықталған.

Әдісі: Теориялық дереккөздерді шолу негізінде кабинеттік зерттеу, сараптамалық бағалау түріндегі маркетингтік зерттеулер жүргізілді.

Қорытынды: Теориялық дереккөздерге жүргізілген талдау сапалы параметрлерді бағалаудың қандай әдістері медициналық қызметтер саласында ең қолайлы және тиімді екенін анықтауға мүмкіндік берді. Жүргізілген сараптамалық бағалау негізінде медицина саласындағы сервистік қызметтердің сапасын бағалаудың бейімделген моделі ұсынылды.

Тұжырымдама: Зерттеу нәтижелерін ескере отырып, медициналық қызметтердің сапалық сипаттамаларын бағалау үшін ұсынылған квалиметрия әдістемесі қызмет көрсету процесінің әлсіз жақтарын тереңірек және дәл анықтауға және тұтынушылардың медициналық қызметке қанағаттану деңгейінің көрсеткіштерін бағалауға мүмкіндік береді деген қорытынды жасауға болады.

Кілт сөздер: сапа, әдістер, квалиметрия әдісі, медициналық қызметтер, қызмет көрсету, сапа параметрлері.

M.R. Smykova, E.B. Orazgaliyeva, N.P. Sokhatskaya, K.R. Badanova

Methods of assessing the quality of services in medical institutions

Abstract

Object: In the article, based on the analysis of theoretical approaches to the methods of evaluating services, the application of one of the most reasonable and comprehensive approach of the method of qualimetry, which was adapted to the conditions and specifics of the activities of medical institutions, is determined.

Method: Desk research of theoretical materials based on a review of theoretical sources, marketing research in the form of expert evaluation.

Findings: The analysis of theoretical sources made it possible to determine which methods of assessing qualitative parameters are the most acceptable and effective in the field of medical services. An adapted model for assessing the quality of services in the field of medicine is presented on the basis of an expert assessment.

Conclusions: Taking into account the results of the study, it can be concluded that the presented method of qualimetry for assessing the quality characteristics of medical services will allow to define more deeply and precisely the weaknesses in the service process and assess the indicators of consumer satisfaction with medical services.

Key words*:* quality, methods, qualimetry method, medical services, service, quality parameters.

References

Bogdanova, A. O., & Menshchikova, A. Yu. (2016). Sravnitelnyi analiz modelei RATER i SERVQUAL [Comparative analysis of RATER and SERVQUAL models]. *Ekonomika i sotsium — Economy and society, 6-1 (25),* 285–287 [in Russian].

Bridgman, P. V. (1934). Analiz razmernostei [Analysis of dimensions]. (Transl. S. I. Vavilov). Leningrad–Moscow: ONTI. Gosudarstvennoe tekhniko-teoreticheskoe izdanie [in Russian].

Dyakonov, B. P. (2005). Integratsiia menedzhmenta kachestva so strategicheskim menedzhmentom s ispolzovaniem upravleniia proektami [Integration of quality management with strategic management using project management]. *Ot menedzhmenta kachestva k kachestvu menedzhmenta i biznesa: materialy Mezhdunarodnoi. nauchno-prakticheskoi. konferentsii (Sankt-Peterburg, 4–6 oktiabria 2005 goda) — From quality management to the quality of management and business: materials of the international scientific-practical conference* [in Russian].

Goroshko, N. V., & Emelyanova, E. K. (2019). Servis «vtoroe meditsinskoe mnenie» na rynke regionalnogo meditsinskogo turizma [Service "second medical opinion" in the market of regional medical tourism]. *Elektronnyi nauchno-metodicheskii zhurnal Omskogo GAU — Electronic scientific and methodological journal of Omsk State Agrarian University, 4 (19),* October–December [in Russian].

Grodzensky, S. Ya. (2017). Upravlenie kachestvom [Quality management]. Moscow: Prospekt [in Russian].

Kurochkina, A. Yu. (2017). Upravlenie kachestvom uslug [Service quality management]. Moscow: Yurait [in Russian].

Michael Marmot, Jessica J. (2014). Allen Social determinants of health equity. *Am J Public Health.* 2014 Sep; 104 Suppl 4 (Suppl 4).

Ovsyanko, D. V. (2010). Napravleniia primeneniia komponentov menedzhmenta kachestva v strategicheskom upravlenii kompaniiami [Directions for the application of quality management components in the strategic management of companies]. *Nauchnyi doklad — Scientific report No. 9 (R).* Saint Petersburg: VShM SPbGU [in Russian].

Parasuraman, A., Valarie A. Zeithaml, & Leonard L. Berry (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing, Vol. 49 (4)*, 41–50.

Pesennikova, E. V., Gridnev, O. V., & Kuchits, S. S. (2017). Meditsinskie uslugi, ili meditsinskaia pomoshch, — aktualnyi vopros dlia gosudarstvennykh uchrezhdenii zdravookhraneniia [Medical services or medical care - an urgent issue for public health institutions]. *Research'n Practical Medicine Journal, 4(4)*, 156–164, https://doi.org/10.17709/2409-2231-2017-4-4-17

Rebrin, Yu. I. (2013). Upravlenie kachestvom [Quality Management]. Taganrog: TRTU [in Russian].

Swapna Bhargavi Gantasala, Prabhakar Venugopal Gantasala, Krishna Naik Chanda Naik Gari«SERVQUAL in RETAILING». (2012). LAP LAMBERT Academic Publishing.

DOI 10.31489/2022Ec4/227-234
JEL: F22, J11, J21
УДК 314.331

Е.С. Сыздыкбеков*

Карагандинский университет Казпотребсоюза, Караганда, Казахстан
syzdykbekov.yer@mail.ru

http://orcid.org/0000–0003–1686–7138

Внешняя трудовая миграция как фактор развития рынка труда в Республике Казахстан

Аннотация:

Цель: Определить влияние внешней трудовой миграции на развитие национального рынка труда в Республике Казахстан.

Методы: В исследовании использованы методы статистического анализа, сопоставительного анализа и построения графиков.

Результаты: Результаты исследования сводятся к основным выводам:

1. Процессы внешней трудовой миграции в Республике Казахстан имеют свои характерные особенности, связанные как с политическими и экономическими преобразованиями в стране, так и с её историческим развитием.

2. Влияние внешней трудовой миграции на развитие национальной экономики определяется сбалансированностью рынка труда и представляет собой фактор экономической безопасности государства.

3. Негативные последствия эмиграции экономически активного населения, квалифицированных кадров для национальной экономики обусловливают необходимость государственного регулирования миграционных процессов, а также разработки новых концептуальных подходов к изучению проблемы внешней трудовой миграции для нейтрализации её негативные последствия для социально-экономического развития.

Выводы: В ходе исследования выявлено наличие отрицательных последствий устойчивого оттока экономически активного населения, квалифицированных кадров, молодых людей с высшим образованием для социально-экономического развития страны. Процессы экономической трансформации в Казахстане, сопровождающиеся тяжелым финансовым положением, требуют вмешательства государства, в том числе путём стимулирования реэмиграции экономически активного населения, квалифицированных специалистов на основе зарубежного опыта.

Ключевые слова: национальный рынок труда, внешняя трудовая миграция, национальная экономика, эмиграция, денежные переводы, государственное регулирование, экономическое развитие.

Введение

В настоящее время Казахстан является страной, открытой для международного сотрудничества и международной миграции. Однако так было не всегда. Длительный период существования Казахстана в рамках закрытой политической и экономической системы в составе Советского Союза определил специфику миграционных процессов после обретения независимости. Переход от командно-административной системы к рыночной экономике, социально-экономические трудности переходного периода, постепенная либерализация взглядов на трудовую миграцию усилили массовый отток людей из Казахстана в другие страны. Это обстоятельство обозначило одну из актуальных проблем качества и достаточности человеческого капитала на национальном рынке труда.

Миграционные процессы в независимом Казахстане во многом обусловлены историческим развитием, определившим его современное состояние, в том числе сырьевой направленностью экономики, многонациональностью и малочисленностью населения относительно огромной территории. Будет не совсем правильно оценивать миграционные тенденции в Казахстане, исходя только из сложившихся закономерностей и мировых тенденций.

Соотношение факторов влияния, причин и последствий внешней трудовой миграции, а также ее структуры и основных направлений представляет собой причинно-следственную связь. Изучение взаимосвязи может способствовать разработке эффективных механизмов и инструментов регулирования миграционных процессов, направленных на удовлетворение потребностей рынка труда.

Научной проблемой данного исследования является определение роли и влияния внешней трудовой миграции на национальную экономику, социально-экономическое развитие. Для достижения поставленной цели сформулирована следующая гипотеза: эмиграция экономически активного насе-

* Автор-корреспондент. E-mail: s*yzdykbekov.yer@mail.ru*

ления, квалифицированных кадров оказывает негативное влияние на национальный рынок труда, приводит к уменьшению возможностей для социально-экономического развития. Для выявления влияния внешней трудовой миграции на национальный рынок труда необходимо исследовать факторы, причины и объемы эмиграции.

Литературный обзор

Основные проблемы в понимании миграционных процессов, а также в оценках влияния внешней трудовой миграции на рынок труда заключаются в многоаспектной сущности этого явления. Неоднозначность трактовок понятия «трудовая миграция» затрудняет её изучение.

В рамках различных отраслей знания создано множество теорий и концептуальных подходов, позволяющих на современном этапе развития научной мысли всесторонне анализировать миграционный процесс (Хорнунг, 2014). Большая роль отводится социологическим исследованиям миграции, специфика которых заключается в том, что социология рассматривает миграцию как социальный процесс и изучает те изменения, к которым она приводит в обществах эмиграции и иммиграции на макро-, мезо- и микроуровнях (Лерас-Муней, Аллисон, 2015).

Значительный интерес для исследования представляет теория «притяжения–выталкивания» Э. Ли, согласно которой миграция представляет собой баланс притягивающих и отталкивающих факторов в точке отправления и в точке прибытия, выстроенный под влиянием вмешивающихся обстоятельств (Ли, 1966). Другой социолог Д. Массей в теории «миграционных сетей» обосновал их влияние на миграционную мотивацию людей (Массей, 1990). Миграционные сети рассматриваются им как сложившиеся отношения в странах выезда и въезда на основе родства, знакомства и братства. Миграционные сети, как социальный капитал, предоставляют дополнительные возможности для миграции и являются третьим миграционным ресурсом, наряду с материальным и человеческим капиталом. Эта теория объясняет денежные переводы трудовых мигрантов как глобальный фактор увеличения масштабов миграционных потоков. Изучение особенностей социального взаимодействия мигрантов, в том числе с местным населением стран-реципиентов, стало возможным благодаря развитию теории социального действия, структурного и поведенческого подходов (Фассио, 2019).

В рамках этих подходов изучается поведение индивидов, которые ощущают на себе влияние среды и под этим воздействием формируют новые модели поведения (Hunt, 2011). Сегодня всё больше исследователей подчеркивают необходимость трансляционных исследований и использование междисциплинарного подхода к изучению миграционных процессов (Секуэйра, 2017).

Важной основой для изучения особенностей трудовой миграции становится «синтетическая» теория миграции, которая представляет собой комплексную интерактивную модель и сочетает в себе теоретические положения классических социально-миграционных теорий (Уард, 2017). По мнению автора, факторы динамики и объемы миграции обусловлены уровнем развития страны, а также фазами миграционного цикла, в котором она находится. Международная миграция происходит в ходе социальных, экономических и политических трансформаций. Данная теория позволяет объяснить миграцию как процесс, характеризующийся ограниченным жизненным циклом, несмотря на сильные тенденции к самосохранению и укреплению, а социальные сети становятся определяющей детерминантой миграции.

В центре исследования внешней трудовой миграции находится определение её профессионально-квалификационного состава. По мнению ряда ученых, трудовые мигранты в большинстве случаев являются неквалифицированными или низкоквалифицированными работниками, поскольку именно на такую работу в странах-реципиентах существует наибольший спрос (Коултер, 2018). Миграция высококвалифицированных кадров также является предметом исследования учёных (Бурзински, 2018). Еще одним видом трудовой миграции является миграция бизнесменов-инвесторов, которые вкладывают деньги в существующие или создают новые предприятия в странах, не являющихся их местом постоянного проживания (Андерсон, 2017).

Ряд ученых рассматривает трудовую миграцию в качестве перемещения населения в пространстве с последующим отраслевым, территориальным, профессиональным и социальным перераспределением (Бурзински, 2018). Есть также исследователи, которые не привязывают такое движение населения с конкретными историческими, социально-экономическими и другими обстоятельствами, определяя трудовую миграцию как любое пространственное перемещение. Авторы этих работ, описывая движение как трудовую миграцию, освобождаются от конкретных исторических, социально-экономических и иных интерпретаций миграции (Лонг, 2016).

По мнению других ученых, трудовая миграция является вполне объективным процессом движения кадров. Такой процесс неразрывно связан как с развитием производительных сил, так и с устанавливаемыми производственными отношениями (Голдштейн, 2016).

Учитывая ряд общих тенденций в миграционных процессах и подходах государств, необходимо обратить внимание на ряд работ российских авторов, выводы которых также представляют интерес. В частности, политический аспект миграционных проблем рассматривается в работе В.С. Малахова и М.Е. Саймона, согласно которым миграционная политика государства базируется на столкновении двух подходов к управлению миграцией населения: либерального и консервативного (Малахов, Симон, 2018). Либеральный подход исходит из того, что общество является самоорганизующимся элементом системы, а государство лишь поддерживает эту самоорганизацию, стимулируя желаемые тенденции. Согласно консервативному подходу, миграционные процессы нуждаются в строгом контроле и ограничениях со стороны государства для обеспечения их стабильности.

В целом, анализ литературы, посвященной трудовой миграции, свидетельствует о том, что, с одной стороны, накоплен значительный объём исследований, с другой — имеются определенные исследовательские пробелы.

Методы

Методологической основой исследования служит междисциплинарный подход в изучении роли внешней трудовой миграции как фактора развития национальной экономики, поскольку природа трудовой миграции требует всестороннего изучения её взаимосвязей и закономерностей, а также влияния миграционных процессов на экономическую безопасность и стратегическую состоятельность страны. При изучении внешней трудовой миграции в Казахстане, выявлении её роли и влияния на рынок труда использовался метод статистического анализа, с помощью которого были проанализированы объёмы частных денежных переводов в Казахстан из-за рубежа, а также миграционные потоки экономически активного населения. Для этого использовались официальные данные государственных органов, а также данные, опубликованные в документах международных организаций, информационных бюллетенях, размещенных на официальных сайтах. С помощью метода сопоставительного анализа и построения графиков были проанализированы изменения миграционного поведения населения в соответствии с изменениями на рынке труда.

Результаты и обсуждение

В настоящее время эмиграция в Казахстане приобретает всё более угрожающие масштабы, что непосредственно влияет как на демографическое развитие, структуру занятости и национальный рынок труда, так и на социально-экономическое развитие страны, в целом. Экономический спад вызывает рост числа безработных, в том числе среди квалифицированных кадров, что приводит к оттоку отдельных категорий граждан, выезжающих за рубеж в поиске хорошо оплачиваемой работы (Садовская, 2016). Наблюдающаяся уже три десятилетия тенденция внешней трудовой миграции обусловлена экономической политикой государства.

Внешняя трудовая миграция оказывает непосредственное влияние на национальный рынок труда. Влияние внешней трудовой миграции на сбалансированность национального рынка труда представлено в виде общей модели рынка труда, где спрос и предложение рассмотрены как функции заработной платы.

В случае если на национальном рынке труда наблюдается дефицит рабочей силы, тогда он может быть сбалансирован за счет трудовых иммигрантов. Это позволяет многим предприятиям не увеличивать заработную плату (рис. 1).

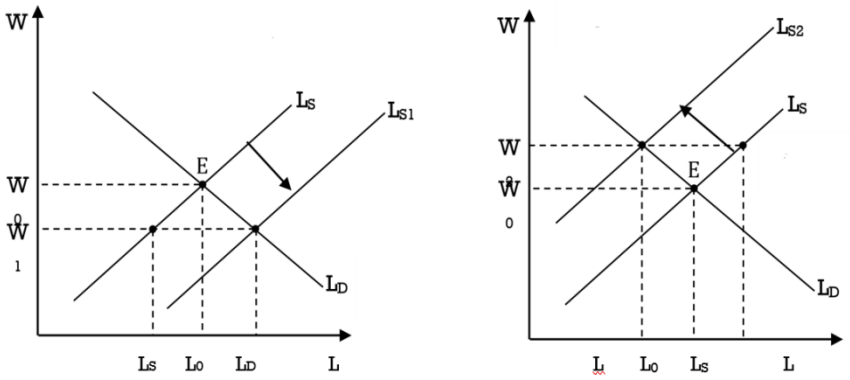


Рисунок 1. Влияние иммиграции на национальный рынок труда, где *W* — стоимость труда; *Ls* — предложение труда до иммиграции; *Ls1, Ls2* — предложение труда после иммиграции; L_D — спрос на труд

Примечание. Составлен автором.

Дефицит рабочей силы, как правило, вызван нехваткой работников соответствующей квалификации, а также несоответствием номинальной заработной платы, выплачиваемой работодателями, росту уровня жизни населения в данной стране.

В случае если на национальном рынке труда образуется избыток рабочей силы, тогда быстро растет безработица. Причиной безработицы, как правило, становится превышение фактической заработной платы над равновесной. Это явление в производстве вызывает нехватку рабочих мест. В этих условиях внешняя трудовая миграция может сбалансировать рынок труда за счет эмиграции рабочей силы. В поисках работы соответствующей квалификации и желаемой заработной платы специалисты могут найти её уже на рынках труда за рубежом, либо искать себя в другой сфере деятельности.

С учетом места в системе международных экономических отношений, а также, исходя из национальных интересов, необходимо действовать в направлении смягчения противоречивых проявлений международного движения рабочей силы как на макро-, так и на микроуровне, что оказывает влияние на рынок труда.

По данным Всемирного банка (data.worldbank.org), потоки денежных переводов в мире достигли в 2019 г. 7700 млрд долларов. В 2019 г. Казахстан вошел в Топ–10 стран по количеству трудовых переводов (см. табл.).

Таблица.Объемы частных денежных переводов из-за рубежа в Казахстан в 2014–2019 гг., в млрд долларов США

Индикаторы	Год					
	2014	2015	2016	2017	2018	2019
По каналам поступления переводов						
1. Через корреспондентские счета банков	3290	2872	2962	3264	3292	3298
2. Через международные платежные системы	2121	1845	2137	2818	3241	4092
3. Неофициальные каналы	832	717	791	982	1052	1172
По источникам формирования переводов						
1. Оплата труда (без учета налогов и расходов в стране пре-	3033	2873	3366	4037	4623	5661
2. Частные переводы, в том числе:	3161	2531	2494	3012	2911	2890
– денежные переводы работающих за границей более года	2162	1644	1573	1895	1762	1542
– другие частные переводы	1022	868	935	1114	1161	1362
Всего	6169	5381	5873	7025	7538	8544
Объём денежных переводов в процентах от ВВП	3.5	4.7	4.1	4.2	4.2	4.8
Примечание. Составлена автором на основе источника (unece.org).						

Такая ситуация свидетельствует о негативных сторонах внешней трудовой миграции. Казахстан покидает экономически активное население, люди с высшим образованием, молодые квалифициро-

ванные кадры. Как следствие, уменьшаются возможности для их развития, замедляются темпы научно-технического прогресса, снижается конкурентоспособность на рынке труда, а государственный бюджет сокращается в результате сокращения числа потенциальных налогоплательщиков.

Неблагоприятный инвестиционный климат в стране приводит к тому, что отсутствует процесс накопления стоимости, который сопровождается увеличением производительности привлекательных факторов производства, в том числе труда. Большинство производств в реальном секторе экономики оснащено устаревшим трудоемким оборудованием, отсутствует (в значительной степени) внедрение новой техники и новых технологий. Рабочие места имеют низкую производительность, что не дает оснований для повышения уровня оплаты труда.

Другая часть занятых (по оценкам МОТ, около 30 %) вынуждена работать в теневом секторе экономики. Причиной этого является низкий уровень экономической свободы ведения бизнеса (Казахстан занимал 112-е место из 189 стран мира в 2016 г. по индексу легкости ведения бизнеса). Чрезмерная налоговая нагрузка и коррупция в государственных органах не способствуют выходу из тени значительного числа предпринимателей (работодателей). Занятые в теневом секторе получают относительно высокий уровень заработной платы, при этом не платят налоги в бюджет. Таким образом, теряется значительная доля доходов в государственный бюджет. Помимо всего перечисленного выше, огромную роль играет нецелевое и неэффективное использование бюджетных средств.

Совокупность перечисленных выше факторов толкает здоровое, активное, энергичное население к внешней трудовой миграции. В условиях глобализации миграционная активность населения значительно возрастает и приводит к активизации эмиграции из страны. Так, к примеру, по данным Государственной службы статистики Республики Казахстан, уровень миграции казахстанских ученых был относительно низким в период 1991–2008 гг., вплоть до мирового экономического кризиса 2008 г., а ее значительный рост наблюдался в 2012 и 2019 гг., по совокупному анализу международной миграции, только к 2004 г. количество уехавших казахстанских ученых превысило количество приехавших в наше государство (stat.gov.kz).

Следует отметить, что в миграционных практиках молодежь характеризуется большей интенсивностью по сравнению с миграцией населения, в целом. По статистике, именно молодые казахстанцы в возрасте от 15 до 34 лет составляют значительную долю мигрантов. В частности, в 2018 г. первое место среди всех возрастных групп по количеству прибывших и выбывших по всем потокам (внутрирегиональной, межрегиональной и межгосударственной миграции) заняли лица в возрасте 15–19 лет (109028 прибывших и 104966 выбывших). При этом в 2019 г. произошло существенное снижение доли мигрантов — более чем на 50 % по каждой категории. Что касается возрастного распределения, то лидером по количеству прибывших и выбывших уже стала молодежь в возрасте 20–24 лет (42294 прибывших и 40307 выбывших) (stat.gov.kz). Количество трудовых мигрантов остается очень большим, и в этом контексте нельзя обойти стороной вопрос выявления причин, побуждающих людей к смене места жительства или работы.

Ещё одной проблемой для Казахстана является тот факт, что трудовые иммигранты не получают поддержки в обеспечении нормальных условий жизни. Правительство сталкивается не столько с вопросом о том, принимать ли мигрантов, сколько с тем, как управлять миграцией, чтобы это отвечало национальным интересам. Поэтому обеспечение национальных интересов и, в то же время, прав мигрантов является обязательной задачей государства.

Таким образом, чрезмерный отток экономически активного населения, обладающего интеллектуальным и трудовым потенциалом в купе с притоком в большей массе неквалифицированных рабочих-иммигрантов, к тому же необеспеченных нормальными условиями труда, приводит к дисбалансу рынка труда и грозит социальными конфликтами. Для снижения этих последствий встает вопрос о необходимости стимулирования реэмиграции, эффективного распределения трудовых ресурсов в соответствии с экономической целесообразностью и учитывая интересы местных сообществ. Одновременно это поможет смягчить демографическую ситуацию, повысить миграционный потенциал с точки зрения развития государства и будет способствовать устойчивому развитию.

Выводы

В ходе исследования выявлено наличие отрицательных последствий устойчивого оттока экономически активного населения, квалифицированных кадров, молодых людей с высшим образованием для социально-экономического развития страны. Об этом свидетельствует увеличение объемов частных денежных переводов в Казахстан из-за рубежа. Как следствие уменьшаются возможности для

развития, замедляются темпы научно-технического прогресса, снижается конкурентоспособность на рынке труда, а государственный бюджет сокращается в результате уменьшения числа потенциальных налогоплательщиков. Процессы экономической трансформации в Казахстане, сопровождающиеся тяжелым финансовым положением, требуют вмешательства государства, в том числе путём стимулирования реэмиграции экономически активного населения, квалифицированных специалистов на основе зарубежного опыта.

Эмиграция экономически активного населения, квалифицированных кадров, молодых специалистов с высшим образованием, обладающих высоким интеллектуальным и трудовым потенциалом, а также иммиграция ннквалифицированных рабочих оказывает негативное влияние как на национальный рынок труда, так и на конфликтогенность в регионах страны, приводит к уменьшению возможностей для социально-экономического развития общества. Нейтрализация негативных последствий внешней трудовой миграции видится как в государственном регулировании этого процесса, стимулировании реэмиграции и привлечении квалифицированных специалистов, так и в создании, в купе с работодателями, на местах приемлемых условий для трудовой деятельности в стране.

Список литературы

Anderson B. Who counts as migrants? Definitions and their consequences / B. Anderson, S. Blinder // Migration Observatory Briefing, COMPAS. — 2017. University of Oxford, UK. https://migrationobservatory.ox.ac.uk/wp-content/uploads/2016/04/Briefing-Who_Counts_Migrant.pdf

Burzynski M. Time, space, and skills in designing migration policy / M. Burzynski // Journal of Demographic Economics. — 2018. — (4). — P. 355–417. Retrieved from https://doi.org/10.1017/dem.2018.5

Coulter S. Skill formation, immigration and European intergration: The politics of the UK growth model / S. Coutler // *New Political Economy*. — 2018. — 2. — P. 208–222. Retrieved from https: //doi.org/10.1080/ 13563467. 2017. 1370446

Cuadros A. Migration and FDI: The role of job skills / A. Cuadros, J. Martin-Montaner, J. Paniagua // International Review of Economics & Finance. — 2019. — 59. — P. 318–332. https://doi.org/10.1016/j.iref.2018.09.007

Fassio C. Skilled migration and innovation in European industries / C. Fassio, F. Montobbio, A. Venturini // Research Policy. — 2019. — 3. — P. 706–718. Retrieved from https://doi.org/10.1016/j.respol.2018.11.002

Goldstein J.R. From Patrick to John F.: Ethnic Names and Occupational Success in the Last Era of Mass Migration / J. R. Goldstein, G. Stecklov // American Sociological Review. — 2016. — 1. — P. 85–106.

Hornung E. Immigration and the Diffusion of Technology: The Huguenot Diaspora in Kazakhstan / E. Hornung // American Economic Review. — 2014. — 1. — P. 84–122.

Hunt J. Which Immigrants Are Most Innovative and Entrepreneurial? Distinctions By Entry Visa / J. Hunt // Journal of Labor Economic. — 2011. — 3. — P. 17–57.

International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families Adopted by General Assembly resolution 45/158 of 18 December 1990. Retrieved from https://www.ohchr.org/EN/ProfessionalInterest/Pages/CMW.aspx

Lee E. A Theory of Migration / E. Lee // *Demography*. — 1966. — 1. — P. 47–57. Retrieved from https://www.jstor.org/stable/2060063

Lleras-Muney A. Did the Americanization Movement Succeed? An Evaluation of the Effect of English-Only and Compulsory Schooling Laws on Immigrants / A. Lleras-Muney, A. Shertzer // American Economic Journal: Economic Policy. — 2015. — 3. — P. 58–90.

Long J. Refugees from Dust and Shrinking Land: Tracking the Dust Bowl Migrants / J. Long, H. Siu // The Journal of Economic History. — 2018. — 4. — P. 1001–1033.

Massey D. S. Social Structure, Household Strategies and the Cumulative Causation of Migration / D.S. Massey // Population Index. — 1990. — 56. — P. 3–26.

Migration Remittances. — Retrieved from https: //www.worldbank.org/en/topic/migrationremittancesdiasporaissues/brief/ migration-remittances-data

Naumann E. Attitude towards highly skilled and low-skilled immigration in Europe: A survey experiment in 15 European countries / E. Naumann, L. F. Stoetzer, G. Pietrantuono // European Journal of Political Research. — 2018. — 4. — P. 1009–1030. Retrieved from https://doi.org/10.1111/1475–6765.12264

Sequeira S. Migrants and the Making of America: The Short- and Long-Run Effects of Immigration during the Age of Mass Migration / S. Sequeira, N. Nunn, N. Qian // National Bureau of Economic Research Working Paper23289. — 2017.

Ward Z. Birds of Passage: Return Migration, Self-selection and Immigration Quotas / Z. Ward // Explorations in Economic History. — 2017. — 64. — P. 37–52.

World Population Policies 2019: International Migration Policies and Programmes. Retrieved from https://www.un.org/en/development/desa/population/theme/policy/wpp2019.asp

Данные Комитета по статистике Министерства национальной экономики Республики Казахстан. — [Электронный ресурс]. — Режим доступа: http://stat.gov.kz/

Садовская Е. Ю. Международная миграция в Казахстане в период суверенитета / Е. Ю. Садовская // Казахстан Спектр: науч. журн. — 2016. — № 1. — С. 7–42.

Е.С. Сыздықбеков

Сыртқы еңбек көші-қоны Қазақстан Республикасындағы еңбек нарығының даму факторы ретінде

Аңдатпа

Мақсаты: Қазақстан Республикасындағы ұлттық еңбек нарығын дамытудағы сыртқы еңбек көші-қонының әсерін анықтау.

Әдісі: Зерттеуде статистикалық талдау әдісі, салыстырмалы талдау әдісі және графиктік әдіс қолданылды.

Қорытынды: Зерттеу нәтижелері негізгі қорытындыларда көрініс табады:

1. Қазақстан Республикасындағы сыртқы еңбек көші-қон процестерінің елдегі саяси және экономикалық қайта құрулармен, оның тарихи дамуымен байланысты өзіне тән белгілері бар.

2. Сыртқы еңбек көші-қонының ұлттық экономиканың дамуына әсері еңбек нарығының тепе-теңдігімен анықталады және мемлекеттің экономикалық қауіпсіздігінің факторы болып табылады.

3. Экономикалық белсенді халықтың, ұлттық экономика үшін білікті кадрлардың эмиграциясының жағымсыз салдары көші-қон процестерін мемлекеттік реттеуді, сондай-ақ оның әлеуметтік-экономикалық дамуы үшін жағымсыз салдарын бейтараптандыруға сыртқы еңбек салдарын зерделеудің жаңа тұжырымдамалық тәсілдерін әзірлеуді қажет етеді.

Қорытынды. Зерттеу нәтижесінде елдің әлеуметтік-экономикалық дамуы үшін экономикалық белсенді халықтың, білікті кадрлардың, жоғары білімі бар жастардың тұрақты кетуінің жағымсыз салдары бар екені анықталды. Қиын қаржылық жағдаймен қатар жүретін Қазақстандағы экономикалық қайта құру процестері мемлекеттің араласуын талап етеді, оның ішінде экономикалық белсенді халықтың, шетелдік тәжірибе негізінде білікті мамандардың қоныс аударуын ынталандыру арқылы.

Кілт сөздер: ұлттық еңбек нарығы, сыртқы еңбек көші-қоны, ұлттық экономика, эмиграция, ақша аударымдары, мемлекеттік реттеу, экономикалық даму.

Y.S. Syzdykbekov

External labor migration as a factor in the development of the labor market in the Republic of Kazakhstan

Abstract

Object: To determine the impact of external labor migration in the development of the national labor market in the Republic of Kazakhstan.

Methods: The method of statistical analysis, the method of comparative analysis, and the method of building graphs.

Findings: The results of the research are reduced to the main conclusions:

1. The processes of external labor migration in the Republic of Kazakhstan have their own characteristic features associated with both political and economic transformations in the country, and with its historical development.

2. The impact of external labor migration on the development of the national economy is determined by the balance of the labor market and is a factor in the economic security of the state.

3. The negative consequences of the emigration of the economically active population, qualified personnel for the national economy necessitate state regulation of migration processes, as well as the development of new conceptual approaches to studying the problem of external labor migration to neutralize its negative consequences for socio-economic development.

Conclusions: The study revealed the presence of negative consequences of a steady outflow of the economically active population, qualified personnel, and young people with higher education for the socio-economic development of the country. The processes of economic transformation in Kazakhstan, accompanied by a difficult financial situation, require state intervention, including by stimulating the remigration of the economically active population, qualified specialists based on foreign experience.

Keywords*:* national labor market, external labor migration, national economy, emigration, money transfers, state regulation, economic development.

References

Anderson, B., & Blinder, S. (2017). Who counts as migrants? Definitions and their consequences. *Migration Observatory Briefing, COMPAS*. University of Oxford, UK. Retrieved from https://migrationobservatory.ox.ac.uk/wp-content/uploads/2016/04/Briefing-Who_Counts_Migrant.pdf

Burzynski, M. (2018). Time, space, and skills in designing migration policy. *Journal of Demographic Economics, (4),* 355–417. https://doi.org/10.1017/dem.2018.5

Coulter, S. (2018). Skillformation, immigration and European intergration: The politics of the UK growth model. *New Political Economy, 2*, 208–222. https://doi.org/10.1080/13563467.2017.1370446

Cuadros, A., Martin-Montaner, J., & Paniagua, J. (2019). Migration and FDI: The role of job skills. *International Review of Economics & Finance, 59*, 318–332. Retrieved from https://doi.org/10.1016/j.iref.2018.09.007

Dannye Komiteta po statistike Ministerstva natsionalnoi ekonomiki Respubliki Kazakhstan [Data of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan]. Retrieved from http://stat.gov.kz/ [in Russian].

Fassio, C., Montobbio, F., & Venturini, A. (2019). Skilled migration and innovation in European industries. *Research Policy, 3*, 706–718. https://doi.org/10.1016/j.respol.2018.11.002

Goldstein, J. R., & Stecklov, G. (2016). From Patrick to John F.: Ethnic Names and Occupational Success in the Last Era of Mass Migration. *American Sociological Review, 1*, 85–106.

Hornung, E. (2014). Immigration and the Diffusion of Technology: The Huguenot Diaspora in Kazakhstan. *American Economic Review, 1*, 84–122

Hunt, J. (2011). Which Immigrants Are Most Innovative and Entrepreneurial? Distinctions By Entry Visa. *Journal of Labor Economic, 3*, 17–57.

International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families Adopted by General Assembly resolution 45/158 of 18 December 1990. https://www.ohchr.org/EN/ProfessionalInterest/Pages/CMW.aspx

Lee, E. (1966). A Theory of Migration. *Demography, 1*, 47–57. https://www.jstor.org/stable/2060063

Lleras-Muney, A., & Shertzer, A. (2015). Did the Americanization Movement Succeed? An Evaluation of the Effect of English-Only and Compulsory Schooling Laws on Immigrants. *American Economic Journal: Economic Policy, 3*, 58–90.

Long, J., & Siu, H. (2018). Refugees from Dust and Shrinking Land: Tracking the Dust Bowl Migrants. *The Journal of Economic History, 4*, 1001–1033.

Massey, D.S. (1990). Social Structure, Household Strategies and the Cumulative Causation of Migration. *Population Index, 56*, 3–26

Migration Remittances. Retrieved from https: //www.worldbank.org/en/topic/migrationremittancesdiasporaissues /brief/migration-remittances-data

Naumann, E., Stoetzer, L. F., & Pietrantuono, G. (2018). Attitude towards highly skilled and low-skilled immigration in Europe: A survey experiment in 15 European countries. *European Journal of Political Research, 4*, 1009–1030. https://doi.org/10.1111/1475–6765.12264

Sadovskaya, E. Yu. (2016). Mezhdunarodnaia migratsiia v Kazakhstane v period sovereniteta [International migration in Kazakhstan during the period of sovereignty]. *Kazakhstan Spektr: nauchnyi zhurnal — Kazakhstan Spectrum. Scientific Journal, 1*, 7–42 [in Russian].

Sequeira, S., Nunn, N., & Qian, N. (2017). Migrants and the Making of America: The Short- and Long-Run Effects of Immigration during the Age of Mass Migration. *National Bureau of Economic Research Working Paper 23289*.

Ward, Z. (2017). Birds of Passage: Return Migration, Self-selection and Immigration Quotas. *Explorations in Economic History, 64*, 37–52.

World Population Policies 2019: International Migration Policies and Programmes. https://www.un.org/en/development/desa/population/theme/policy/wpp2019.asp

DOI 10.31489/2022Ec4/235-241
JEL J11
УДК 314.7

Э.Ж. Сыздыкова[1*], А.Н. Ламбекова[2], Д.К. Абилов[3], Д.А. Ситенко[4], Г.И. Абаева[5]

[1,2,3,4]Карагандинский университет имени академика Е.А. Букетова, Караганда, Казахстан;
[5]Костанайский региональный университет им. А. Байтурсынова, Костанай, Казахстан
[1]elmira5as@mail.ru , [2]aygerim.lambekova@mail.ru,
[3]adk1976@mail.ru, [4]daesha@list.ru

[1]https://orcid.org/0000-0001-6273-9968, [2]https://orcid.org/0000-0001-6818-3665,
[3]https://orcid.org/0000-0002-0485-4869
[4]https://orcid.org/0000-0001–6979–2577

[1]Scopus Author ID: 57201672842, [2]Scopus Author ID: 57204244683,
[4]Scopus Author ID: 41262688700

Влияние внутренней миграции молодежи на создание валовой добавленной стоимости и на индикатор рынка труда в Республике Казахстан

Аннотация:

Цель: Выявление влияния внутренней молодежной миграции на валовую добавленную стоимость и на индикатор рынка труда регионов Республики Казахстан.

Методы: В работе использован статистические методы анализа, в том числе корреляционно-регрессионный метод.

Результаты: Исследуя особенности миграционных процессов в Республике Казахстан, было выявлено влияние числа мигрировавших на рост (снижение) валовой добавленной стоимости в соответствующем регионе страны и количество рабочей силы. Авторами были выдвинуты гипотезы о наличии и направлении взаимосвязи между показателем «Валовая добавленная стоимость региона» и такими факторами, как «Численность прибывших», «Численность выбывших», а также влияние данных показателей на «Численность рабочей силы» в городах Астана и Алматы как имеющих положительное сальдо миграции. Для доказательства или опровержения данных гипотез был проведен корреляционно-регрессионный анализ.

Данный анализ подтвердил обе гипотезы: миграционные процессы молодежи отрицательно влияют на формирование валовой добавленной стоимости города Астана и положительно влияют на формирование валовой добавленной стоимости города Алматы. Сила влияния различается в зависимости от возраста мигрантов. Влияние молодежной миграции на рабочую силу также отличается в зависимости от возраста молодежи. В городе Астане отрицательное влияние на рабочую силу города происходит при миграции молодежи в возрасте 14–18 лет и 19–23 лет. Положительное влияние оказывает прибывшая молодежь в возрасте 24–28 лет. В городе Алматы положительно влияет на рабочую силу города миграция молодежи всех возрастов. Но при этом прибывшая молодежь возраста 19–23 лет имеет совсем незначительное влияние.

Выводы: Политику внутренней молодежной миграции в Республике Казахстан необходимо проводить с учетом особенностей регионов и возрастов мигрирующей молодежи страны.

***Ключевые слова*:** миграция, молодежная миграция, валовая добавленная стоимость, рынок труда, индикаторы рынка труда.

Введение

Экономика страны зависит от функционирования ряда явлений и процессов, действующих не только извне, но и изнутри. В первую очередь, это касается трудовой сферы, в том числе наличия и движения трудовых ресурсов и производства ими валовой добавленной стоимости. Трудовые ресурсы формируются также из мигрировавшего населения. Республика Казахстан очень активна в плане внешней миграции. При этом население Казахстана отличается не меньшей активностью внутри страны. Например, в 2021 г. 709 543 человек мигрировали в пределах Казахстана. Внутренняя миграция в Республике Казахстан выглядит неоднозначно. Возникающие диспропорции различаются в каждом конкретном регионе. Поэтому для проведения эффективной политики в сфере миграции необходимо проанализировать сложившиеся ситуации на региональном уровне.

Миграция может влиять не только на количество и качество рабочей силы, но и выработку валовой добавленной стоимости в регионе и, в целом, в Казахстане.

* Автор-корреспондент. E-mail: *elmira5as@mail.ru*

Актуальность исследуемой темы заключается в том, что добавленная стоимость является одним из конкурентных преимуществ страны, фактором создания которой являются трудовые ресурсы, которые, в свою очередь, включают мигранты, среди которого выделяют молодежь. Огромный потенциал заложен в мигрировавшей молодежи, так как она вливается в трудовые ресурсы региона и имеет также отсроченный эффект от участия в создании валового продукта в регионе уже как профессионал.

Таким образом, представляет интерес зависимость одного из основных показателей функционирования национальной экономики — валовой добавленной стоимости регионов от мигрировавшей молодежи, а также влияние молодежной миграции на рынок труда данных регионов.

В данном исследовании проведен корреляционно-регрессионный анализ статистических данных, цель которого заключается в математическом выражении и описании зависимости валовой добавленной стоимости региона от фактора, который ее может создавать — численности мигрировавшей молодежи, а также ее влияние на такой индикатор рынка труда, как рабочая сила.

Основными задачами исследования являются выявление влияния прибывшего числа молодежи на валовую добавленную стоимость в регионах и на рынок труда.

Обзор литературы

В существующих мировых исследованиях широко рассматриваются вопросы международной миграции молодежи. В таких исследованиях поднимаются вопросы старения населения, где проблемы с привлечением молодежи к местным рынкам труда, а также поднимаются аспекты потери молодежи в следствие эмиграции. Ученые выявили особенности международной молодежной миграции: выявлены объемы молодежи в общей численности мигрантов, их рост в развитых странах (Findlay et al., 2021).

Автор (Shehu Abdulganiyu Salau, 2020) выявил причины миграции сельской молодежи: плохие дороги, поиск белых воротничков и трудоемкий характер ведения сельского хозяйства.

А автор (Francis Leo Collins, 2018) определил, что миграция молодых людей связана с надеждами на образование и лучшее жительство, улучшение жизненных шансов, знакомство с разными новыми местами, накопить социальный и культурный капитал, возможность самореализоваться.

Оценки автора (Ilya Kashnitsky, 2020) показывают, что до 70 % молодежи покидают регионы по окончании школы и зачастую не возвращаются на периферию.

Есть исследования, которые рассматривают миграционные процессы молодежи с точки зрения биографического аспекта, и утверждается, что миграция — это культурный феномен (Caitríona Ni Laoire, 2000).

Зарубежные авторы сходятся во мнении о том, что молодежная миграция имеет важное социальное и экономическое значение для любой страны и региона. Кроме того, они считают, что данное явление надо поставить в центр повестки дня, так как это основа накопления человеческого капитала для будущих поколений. Молодые мигранты стремятся жить своей динамичной и открытой жизнью на международном уровне. Авторы представляют результаты, определяющие критические факторы, и предлагают адекватную политику миграции (Alessio Emanuele Biondo, 2012).

Миграция молодежи из малых городов значительна, что, в основном, связано с образовательной миграцией в города. Миграция молодежи происходит не по их спонтанному решению; их отношение к отъезду формируется задолго до выпуска учеников из школ. Помимо этого, города назначения часто выбираются с учетом планов дальнейшей миграции семьи. Выбор города иммиграции определяется престижем вуза и доступностью выбранного направления обучения. Однако решающую роль играют перспективы получения постоянного места жительства в городе, куда молодых людей направили на учебу. Уровень возвратной миграции считается низким (Nikita Mkrtchyan, 2017).

Denis Mokrensky считает, что за счет использования своих конкурентных преимуществ могли бы стать перспективы экономического развития регионов в ближайшем будущем. С этой целью им изучены теоретические положения, имеющие значение для объяснения миграционной привлекательности территорий, проанализирована динамика миграционного прироста (Denis Mokrensky, 2020).

Briana Nichols,Karla Umana, Tamara Britton, Lisette Farias изучают социальные и политические проблемы, которые вызывают молодежную миграцию (Briana Nichols, Karla Umana, Tamara Britton, Lisette Farias, 2017).

Методы

Для проведения данного исследования были использованы методы: статистическое наблюдение, сводка и группировка материалов статистического наблюдения, абсолютные и относительные статистические величины, вариационные ряды, выборка, корреляционный и регрессионный анализ, ряды динамики.

Выводы

Рассмотрев данные о внутренней молодежной миграции, мы пришли к выводу о том, что сальдо молодежной миграции в период с 2016 года по 2021 год положительно в городах Астана, Алматы. В областях Казахстана сальдо молодежной миграции в данный период отрицательно.

В связи с этим рассмотрим влияние на выработку валовой добавленной стоимости и на такой индикатор рынка труда, как рабочая сила, в соответствующих регионах в период с 2016 года по 2021 год прибывших молодых людей в города, имеющие положительное сальдо молодежной миграции.

Число прибывших, число выбывших и сальдо молодежной миграции в городе Астана показано в таблице 1.

Таблица 1. Сальдо молодежной миграции в городе Астана, чел.

Годы	Прибывшие	Выбывшие	Сальдо миграции
2016	54645	16439	+38206
2017	42638	26728	+15910
2018	32565	24459	+8106
2019	46452	34139	+12313
2020	35679	26603	+9076
2021	45626	31402	+14224

Примечание. Составлена авторами на основе данных Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан.

Численность прибывших в город Астану составляла за исследуемый период порядка 14 % от числа всех прибывших по внутренней миграции. Численность выбывших из города Астаны составляла за исследуемый период порядка 9 % от числа всех выбывших по внутренней миграции. На протяжении данного периода сальдо миграции сохранялось положительным.

Число прибывших, число выбывших и сальдо молодежной миграции в городе Алматы показано в таблице 2.

Таблица 2. Сальдо молодежной миграции в городе Алматы, чел.

Годы	Прибывшие	Выбывшие	Сальдо миграции
2016	33891	17054	+16837
2017	35414	20415	+14999
2018	30659	17312	+13347
2019	38648	22704	+15944
2020	34871	20077	+14794
2021	39060	25157	+13903

Примечание. Составлена авторами на основе данных Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан.

Численность прибывших в город Алматы составляла за исследуемый период порядка 12 % от числа всех прибывших по внутренней миграции. Численность выбывших из города Астаны составляла за исследуемый период порядка 7 % от числа всех выбывших по внутренней миграции. На протяжении данного периода сальдо миграции сохранялось положительным.

В таблице 3 представлена информация о валовой добавленной стоимости и числе прибывшей молодежи в городе Астане.

Таблица 3. Валовая добавленная стоимость и число прибывшей молодежи в городе Астане

Годы	Валовая добавленная стоимость, тенге	Прибыло молодежи, человек			
		всего	в возрасте		
			14–18 лет	19–23 лет	24–28 лет
2016	4 865 315,40	54645	14411	21503	18731
2017	5 775 621,10	42638	7950	16263	18425
2018	6 705 993,30	32565	6300	11121	15144
2019	7 834 828,50	46452	9085	15516	21851
2020	7 975 283,10	35679	6087	12020	17572
2021	8 417 637,60	45626	9109	15106	21411
Примечание. Составлена авторами на основе данных Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан.					

Наибольший удельный вес составляют прибывшие в Астану в возрасте 24–28 лет (44,5 %). Наименьший удельный вес составляют прибывшие в возрасте 14–18 лет (20,0 %). Прибывшие в возрасте 19–23 лет составляют 35,5%.

В таблице 4 представлен коэффициент корреляции влияния прибывшей молодежи на валовую добавленную стоимость Астаны.

Таблица 4. Коэффициент корреляции влияния числа прибывших на показатель валовой добавленной стоимости в городе Астана

	Коэффициент корреляции влияния числа прибывших на показатель валовой добавленной стоимости			
	всего	в возрасте		
		14–18 лет	19–23 лет	24–28 лет
Город Астана	-0,39371	-0,57375	-0,64175	0,387403
Примечание. Составлена авторами на основе данных Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан.				

Проанализировав влияние прибывшей молодежи на валовую добавленную стоимость Астаны, авторы пришли к выводу о том, что наибольшее влияние имеет количество прибывших в возрасте 19–23 лет (коэффициент корреляции составляет -0,64175). Таким образом, увеличение числа прибывшей молодежи в город Астану в возрасте 14–18 лет и 19–23 лет вызывает уменьшение валовой добавленной стоимости. Прибывшая молодежь в возрасте 24–28 лет имеет незначительное положительное влияние.

В таблице 5 представлена информация о валовой добавленной стоимости и числе прибывшей молодежи в город Алматы.

Таблица 5. Валовая добавленная стоимость и число прибывшей молодежи в город Алматы

Годы	Валовая добавленная стоимость, тенге	Прибыло молодежи, человек			
		всего	в возрасте		
			14–18 лет	19–23 лет	24–28 лет
2016	10 601 347,80	33891	7594	12091	14206
2017	11 893 225,90	35414	6430	12095	16864
2018	12 132 649,70	30659	6194	9792	14673
2019	13 546 958,40	38648	8698	12220	17730
2020	13 459 802,60	34871	7117	11338	16416
2021	14 930 584,60	39060	8833	12644	17583
Примечание. Составлена авторами на основе данных Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан.					

Наибольший удельный вес составляют прибывшие в Алматы в возрасте 24-28 лет (45,9%). Наименьший удельный вес составляют прибывшие в возрасте 14-18 лет (21,1%). Прибывшие в возрасте 19-23 лет составляют 33,0%.

В таблице 6 представлен коэффициент корреляции влияние прибывшей молодежи на валовую добавленную стоимость Алматы.

Таблица 6. Коэффициент корреляции влияния числа прибывших на показатель валовой добавленной стоимости в городе Алматы

	Коэффициент корреляции влияния числа прибывших на показатель валовой добавленной стоимости			
	всего	в возрасте		
		14–18 лет	19–23 лет	24–28 лет
Город Алматы	0,685201	0,601415	0,283813	0,798418
Примечание. Составлена авторами на основе данных Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан.				

Проанализировав влияние прибывшей молодежи на валовую добавленную стоимость Алматы, авторы пришли к выводу о том, что наибольшее влияние имеет количество прибывших в возрасте 24–28 лет (коэффициент корреляции составляет 0,798418). Таким образом, увеличение числа прибывшей молодежи в город Алматы в возрасте 14–18 лет и 24–28 лет вызывает увеличение валовой добавленной стоимости. Прибывшая молодежь в возрасте 19–23 лет имеет незначительное положительное влияние.

При изучении влияния численности мигрировавшей молодежи внутри страны рассмотрим ее влияние на такой индикатор рынка труда, как рабочая сила. Рабочая сила городов Астаны и Алматы показана в таблице 7.

Таблица 7. Рабочая сила в городах Астана и Алматы, тыс. чел.

Город	2016	2017	2018	2019	2020	2021
Астана	488,7	521,5	531,4	578,9	590,5	608,4
Алматы	916,3	939,2	961,7	986,6	1 011,50	1 036,3
Примечание. Составлена авторами на основе данных Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан.						

За изучаемый период прирост рабочей силы в городе Астане происходил в среднем на 5 % ежегодно, в городе Алматы — в среднем на 2,5 % ежегодно.

В таблице 8 представлен коэффициент корреляции влияния числа прибывших на показатель рабочей силы в городе Астане.

Таблица 8. Коэффициент корреляции влияния числа прибывших на показатель рабочей силы в городе Астане

Город	Коэффициент корреляции влияния числа прибывших на показатель рабочей силы			
	всего	в возрасте		
		14–18 лет	19–23 лет	24–28 лет
Астана	-0,29892	-0,50839	-0,54771	0,471767
Примечание. Составлена авторами на основе данных Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан.				

Как видно из таблицы 8 в городе Астане отрицательно влияет на рабочую силу города миграция молодежи в возрасте 14-18 лет и 19-23 лет. Положительное влияние оказывает прибывшая молодежь возраста 24-28 лет.

В таблице 9 представлен коэффициент корреляции влияния числа прибывших на показатель рабочей силы в городе Алматы.

Таблица 9. Коэффициент корреляции влияния числа прибывших на показатель рабочей силы в городе Алматы

Город	Коэффициент корреляции влияния числа прибывших на показатель рабочей силы			
	всего	в возрасте		
		14–18 лет	19–23 лет	24–28 лет
Алматы	0,559139	0,525381	0,169109	0,669752
Примечание. Составлена авторами на основе данных Бюро национальной статистики Агентства по стратегическому планированию и реформам Республики Казахстан.				

Как видно из таблицы 6, в городе Алматы положительно влияет на рабочую силу города миграция молодежи всех возрастов. Но прибывшая молодежь возраста 19–23 лет имеет совсем незначительное влияние.

Выводы

Таким образом, города Астана и Алматы, несмотря на то, что имеют положительное сальдо молодежной миграции по сравнению с другими регионами в период с 2016 по 2021 годы получают разное влияние числа мигрирующей молодежи в рамках внутренней миграции на показатель валовой добавленной стоимости. В городе Астане взаимосвязь между данными показателями отрицательная, а в городе Алматы положительная. При этом незначительно влияние прибывшей молодежи в возрасте 24–28 лет в городе Астане, а в городе Алматы незначительно влияние прибывшей молодежи в возрасте 19–23 лет.

При анализе влияния мигрировавшей молодежи выявлено, что в городе Астане отрицательное влияние на рабочую силу города происходит при миграции молодежи в возрасте 14–18 лет и 19–23 лет. Положительное влияние оказывает прибывшая молодежь возраста 24–28 лет. В городе Алматы положительно влияет на рабочую силу города миграция молодежи всех возрастов. Но при этом прибывшая молодежь возраста 19–23 лет имеет совсем незначительное влияние.

Список литературы

Findlay, A. M., Short, D., & Stockdale, A. (2000). The labour-market impact of migration to rural areas. *Applied Geography*, *20*(4), 333-348.

Salau, S. A., Nofiu, N. B., & Ayanda, I. F. (2020). An assessment of youth migration and food security among farming households in Kwara state, Nigeria. *Journal of Agribusiness and Rural Development*, *4*.

Collins, F. L. (2018). Keeping bodies moving: Hope, disruption and the possibilities of youth migration. *Journal of Intercultural Studies*, *39*(6), 626-641.

Kashnitsky, I. (2020). Russian periphery is dying in movement: a cohort assessment of internal youth migration in Central Russia. *GeoJournal*, *85*(1), 173-185.

Ní Laoire, C. (2000). Conceptualising Irish rural youth migration: a biographical approach. *International journal of population geography*, *6*(3), 229-243.

Biondo, A. E. (2012). Youth migration: study, job and life perspective. *International Journal of Education Economics and Development*, *3*(2), 127-148.

Mkrtchyan, N. V. (2017). The youth migration from small towns in Russia. *Monitoring of Public Opinion: Economic and Social Changes*, *1*(137), 225-242.

Mokrensky, D. N. (2020). Migrationally attractive municipalities in the regions of the Central Federal District (excluding regional centers). *Population and Economics*, *4*(1), 51-59.

Nichols, B., Umana, K., Britton, T., Farias, L., Lavalley, R., & Hall-Clifford, R. (2017). Transnational information politics and the "child migration crisis": Guatemalan NGOs respond to youth migration. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, *28*(5), 1962-1987.

Э.Ж. Сыздыкова, А.Н. Ламбекова, Д.К. Абилов, Д.А. Ситенко, Г.И. Абаева

Жастардың ішкі көші-қонының жалпы қосылған құнды құруға және Қазақстан Республикасындағы еңбек нарығының индикаторына әсері

Аңдатпа

Мақсаты: Жастардың ішкі көші-қонының жалпы қосылған құнға және Қазақстан Республикасы аймақтарының еңбек нарығының көрсеткішіне әсерін анықтау.

Әдісі: Жұмыста талдаудың статистикалық әдістері, сонымен қатар корреляциялық-регрессиялық әдіс қолданылды.

Қорытынды: Қазақстан Республикасындағы көші-қон процестерінің ерекшеліктерін зерттей отырып, елдің тиісті аймағындағы жалпы қосылған құнның өсуіне (төмендеуіне) және жұмыс күшінің санына көшіп келушілер санының әсері анықталды. Авторлар «Аймақтың жалпы қосылған құны» көрсеткіші мен «Келу саны», «Кеткендер саны» сияқты факторлар арасындағы байланыстың болуы мен бағыты, сондай-ақ осы көрсеткіштердің оң көші-қон сальдосы бар Астана және Алматы қалаларындағы «жұмыс күшінің санына» әсері туралы гипотезалар ұсынған. Осы гипотезаларды дәлелдеу немесе теріске шығару үшін корреляциялық-регрессиялық талдау жүргізілген.

Бұл талдау екі гипотезаны да растады: жастардың көші-қон процестері Астана қаласының жалпы қосылған құнының қалыптасуына теріс әсер етеді және Алматы қаласының жалпы қосылған құнының қалыптасуына оң әсер етеді. Әсер ету күші мигранттардың жасына байланысты өзгереді. Жастар көші-қонының жұмыс күшіне әсері де жастардың жас ерекшеліктеріне байланысты ерекшеленеді. Астана қаласында 14-18 және 19-23 жас аралығындағы жастардың көші-қоны қаланың жұмыс күшіне кері әсер етуде. 24-28 жас аралығындағы жастар

оң әсер етеді. Алматы қаласында барлық жастағы жастардың көші-қоны қаланың жұмыс күшіне оң әсерін тигізуде. Бірақ сонымен бірге келген 19-23 жас аралығындағы жастардың ықпалы өте аз.

Қорытынды: Қазақстан Республикасындағы жастардың ішкі көші-қоны саясаты аймақтардың ерекшеліктерін және еліміздің көшіп-қонып жүрген жастарының жас ерекшеліктерін ескере отырып, жүзеге асырылуға тиіс.

Кілт сөздер: көші-қон, жастар көші-қоны, жалпы қосылған құн, еңбек нарығы, еңбек нарығының көрсеткіштері.

E.Zh. Syzdykova, A.N. Lambekova, D.K. Abilov, D.A. Sitenko, G.I. Abayeva

The impact of internal youth migration on the creation of gross added value and labor market indicator in the Republic of Kazakhstan

Abstract

Object: identification of the impact of internal youth migration on gross added value and on the labor market indicator of the regions of the Republic of Kazakhstan.

Methods: the following paper uses statistical methods of analysis, including a correlation and regression method.

Findings: exploring the features of migration processes in the Republic of Kazakhstan, the influence of the number of migrants on the growth (decrease) of gross value added in the corresponding region of the country and the number of labor force was revealed. The authors put forward hypotheses about the presence and direction of the relationship between the indicator “Gross added value of the region” and such factors as “Number of arrivals”, “Number of departures”, as well as the impact of these indicators on the “Number of labor force” in the cities of Astana and Almaty as having positive migration balance. Correlation-regression analysis was carried out to prove or refute these hypotheses.

This analysis confirmed both hypotheses: youth migration negatively affects the formation of the gross added value of the city of Astana and positively affects the formation of the gross added value of the city of Almaty. The strength of influence differs depending on the age of migrants. The impact of youth migration on the labor force also differs depending on the age of the youth. In the city of Astana, a negative impact on the city's labor force occurs with the migration of young people aged 14-18 and 19-23 years. Young people aged 24-28 have a positive impact. In the city of Almaty, youth migration of all ages has a positive impact on the city's workforce. But at the same time, young people aged 19-23 who arrived have very little influence.

Conclusions: The policy of internal youth migration in the Republic of Kazakhstan must be carried out taking into account the characteristics of the regions and the ages of the migrating youth of the country.

Keywords: migration, youth migration, gross added value, labor market, labor market indicators.

2022 жылғы
«Қарағанды университетінің хабаршысы» журналында
жарияланған мақалалардың көрсеткіші. «Экономика» сериясы.

Указатель статей, опубликованных в журнале
«Вестник Карагандинского университета. Серия «Экономика»
в 2022 году

Index of articles published in
«Bulletin of the Karaganda University. "Economy" Series»
in 2022