METHODOLOGY OF A COMPREHENSIVE ANALYSIS OF THE SELF-EMPLOYMENT MARKET

BAITENIZOV D.T.[1]
PhD, Associate Professor

ABDREISSOVA D.ZH.*[1]
[1]M.Kozybayev North Kazakhstan University, Petropavlovsk, Republic of Kazakhstan

ABSTRACT. Currently self-employment in Kazakhstan remains an underexplored segment of the labor market. The author of this article proposes a methodological approach to assessing the self-employment market in the Republic of Kazakhstan, which involves nine stages. The work consistently reveals the content of each of the stages. This methodological approach includes evidence that the formation and development of intellectual and innovative self-employment in Kazakhstan will create an additional impetus to the economic development of the Republic of Kazakhstan. This evidence is based on a study of the impact of intellectual and innovative activities on economic development. The article clearly and step by step reveals the steps to test research hypotheses using modern statistical information processing packages based on quantitative economic and mathematical methods and the available official data of the Government of the Republic of Kazakhstan. Thus, In the process of research, the author substantiates the proposed sequence of stages of analysis and a set of assessment indicators, the use of quantitative research methods.

KEYWORDS: self-employment market, methodological approach, indicators, innovative potential, model, quantitative method, forecast

ӨЗІН-ӨЗІ ЖҰМЫСПЕН ҚАМТУ НАРЫҒЫН КЕШЕНДІ ТАЛДАУ ӘДІСНАМАСЫ

БАЙТЕНИЗОВ Д.Т.[1]
PhD, доцент

АБДРЕИСОВА Д.Ж.*[1]
[1]М.Қозыбаев атындағы Солтүстік Қазақстан университеті, Петропавл қ.,
Қазақстан Республикасы

АҢДАТПА. Бүгінгі таңда Қазақстанның өзін-өзі жұмыспен қамту нарығы жеткілікті зерттелмеген сала болып отыр. Мақалада тоғыз кезеңді қамтитын Қазақстан Республикасының өзін-өзі жұмыспен қамту нарығын бағалаудың әдіснамалық тәсілі ұсынылған. Жұмыста әр кезеңнің мазмұнын дәйекті түрде ашады. Бұл әдістемелік тәсіл Қазақстанда интеллектуалды және инновациялық өзін-өзі жұмыспен қамтуының қалыптасуы мен дамуы Қазақстан Республикасының экономикалық дамуына қосымша серпін беретіндігінің дәлелдерін қосады. Бұл мәліметтер интеллектуалды-инновациялық қызметтің экономикалық дамуға әсерін зерттеуге негізделген. Мақалада сандық экономикалық және математикалық әдістері мен Қазақстан Республикасы Үкіметінің ресми деректері негізінде статистикалық ақпаратты өңдеудің заманауи пакеттерін қолдана отырып, зерттеу гипо-

тезаларын тексеру кезеңдері нақты және кезең-кезең ашылады. Осылайша, зерттеу барысында автор ұсынылған талдау кезеңдерінің кезектілігі мен бағалау көрсеткіштерінің жиынтығын, зерттеудің сандық әдістерін қолдануды негіздейді.

ТҮЙІН СӨЗДЕР: өзін-өзі жұмыспен қамту нарығы, әдіснамалық тәсіл, көрсеткіштер, инновациялық әлеует, үлгі, сандық әдіс, болжам

МЕТОДИКА КОМПЛЕКСНОГО АНАЛИЗА РЫНКА САМОЗАНЯТОСТИ

БАЙТЕНИЗОВ Д.Т.[1]
PhD, доцент

АБДРЕИСОВА Д.Ж.*[1]
[1]Северо-Казахстанский университет имени М. Козыбаева, г. Петропавловск, Республика Казахстан

АННОТАЦИЯ. В настоящее время самозанятость в Казахстане остается малоизученным сегментом рынка труда. Автор статьи предлагает методический подход к оценке рынка самозанятости в Республике Казахстан, который включает девять этапов. В работе последовательно раскрывается содержание каждого из этапов. Этот методический подход включает доказательства того, что формирование и развитие интеллектуальной и инновационной самозанятости в Казахстане придаст дополнительный импульс экономическому развитию Республики Казахстан. Эти данные основаны на исследовании влияния интеллектуальной и инновационной деятельности на экономическое развитие. В статье четко и поэтапно раскрываются этапы проверки гипотез исследования с использованием современных пакетов статистической обработки информации, основанных на количественных экономико-математических методах и имеющихся официальных данных Правительства Республики Казахстан. Таким образом, в процессе исследования автор обосновывает предложенную последовательность этапов анализа и набор оценочных показателей, использование количественных методов исследования.

КЛЮЧЕВЫЕ СЛОВА: рынок самозанятости, методический подход, показатели, инновационный потенциал, модель, количественный метод, прогноз

INTRODUCTION. All over the world there is a category of people who earn their living independently and do not depend on a specific employer. Self-employed or independent workers have a significant impact on their countries' economies. The labor market is in permanent change; in recent years it has transformed significantly. This is due to the development of digitalization globally, including in Kazakhstan. We are seeing this in the post-Covid period; the consequences of remote work during the period of coronavirus infection are noticeable, when society appreciated the possibility of working outside the usual office.

Digitalization processes have intensified, and self-employment has not lost its relevance, in which freelancing now plays a prominent role. We understand that the self-employment market, as part of the labor market, needs to be assessed and analyzed.

On the one hand, the self-employment market is represented by traditional self-employment, for example, cake baking, minor repairs, taxis, etc. On the other hand, intellectual and innovative self-employment is freelancing, which includes programming, design, development of projects of varying complexity, etc.

At the same time, in Kazakhstan, official statistics number more than 2 million self-employed people in the republic, which is a real economic phenomenon that needs to be comprehensively studied using certain methodological approaches, and subsequently the authorities must make management decisions aimed at effectively using the potential of the self-employed Kazakhstanis.

Nowadays there is no clear methodology for assessing the self-employment market to obtain a general understanding of this research subject.

One of the proofs of this is the lack of a unified approach in defining self-employment, which influenced the low level of development of methodological approaches to assessing the self-employment market. It should be noted that the developed methodological approach to assessing the self-employment market is the novelty of this study.

MATERIAL AND METHODS OF RESEARCH. The proposed methodology for assessing the self-employment market in Kazakhstan includes the study of the theory of the self-employment market, factors for the development of self-employment, analysis of the self-employment market and intellectual and innovative activities in the self-employment market of the Republic of Kazakhstan, the development of measures for the development of the self-employment market in the Republic of Kazakhstan and involves several stages.

LITERATURE REVIEW. The regulation of the labor market is reflected in the works of M. Friedman, F. Hayek, K. Marx, A. Marshall, A. Smith and others.

First mentioned the term "self-employment" Pogge O.C. Foreign researchers of self-employment: Bogenhold D., Buchler S.Ya., Kirchhoff B.A., Maloney V.F., Pink D.Kh. and others.

Russian scientists who studied the creative, innovative and flexible facets of the labor market and self-employment: A.V. Shevchuk, D.O. Strebkov, R. Kapelyushnikov.

Kazakh scientists involved in the study of self-employment R.A. Baizholova, R.T. Dulambaeva, R.B. Sartov, G.K. Ilyashova, M.A. Kusainov.

The scientific community of Kazakhstan lacks a comprehensive methodology for assessing the self-employment market.

The opposite conclusions of scientists regarding the relationship within the self-employment market: studies of the relationship between unemployment and self-employment (Pfeiffer&Pohlmeier, 1994; Reize, 2004). A positive correlation is shown in (Hamilton, 1986; Parker, 1996; Scheutze, 2000), but in (Blanchflower, 2000; Parker &Robson, 2004) the correlation is negative, and in (Acs et al., 1994) it is statistically insignificant.

The results of studies of the dependence of self-employment on the level of economic development of the country (GDP, GDP per capita, etc.) are ambiguous. Positive correlation - in studies (Evans &Leighton, 1989; Robson, 1998), negative - in studies (Robson, 2007; Pietrobelli et al., 2004).

Conclusion: the need to develop a methodology for assessing the self-employment market.

RESULTS AND THEIR DISCUSSION. At the first stage, it is necessary to study the theoretical foundations of the self-employment market, present the author's vision of the concept of self-employment, determine the scientific categorical apparatus of the self-employment market, and build a model of the self-employment market. In addition, it is necessary to identify and systematize the factors of development of the self-employment market. At the second stage of the study, the participation of the state in the formation of the self-employment market in Kazakhstan is determined. The presence of state programs to stimulate the development of the self-employment market is one of the key parameters for assessing the role of the state in the formation and development of the self-employment market in the republic. Here it is also necessary to highlight the main stages of the formation of the self-employment market in the Republic of Kazakhstan (RK), identify problems in the course of the implementation

of government programs and determine the potential for development. At the third stage, a set of indicators is determined with the help of which it is possible to evaluate the factors influencing the development of the self-employment market. This analysis presents absolute and relative indicators, quantitative and qualitative, generalizing and particular indicators:

1. Indicators characterizing the regions of Kazakhstan in relation to the self-employment market.

2. Dynamics of the Gross Domestic Product (GDP) of the RK.

3. Industry specialization of the RK.

4. The share of the service sector in industrial production.

5. Unemployment rate, unemployment delta.

6. Availability of electronic labor exchanges for the self-employed, the number of coworking centers.

7. The level of perception of corruption in the republic relative to other countries of the world.

8. Level of self-employed taxation.

9. Income level.

10. Perception of the income level of the self-employed population.

11. Gross enrollment in higher education in the RK.

12. Total costs for information and communication technologies, indicators of the use of information and communication technologies in organizations, indicators of the Global competitiveness index by the factor level of technological development.

13. Share of domestic expenditure on R&D from GDP.

To obtain and calculate the relevant indicators, should be used the official data of the Committee on Statistics of the Ministry of National Economy of the RK. At the fourth stage, it is advisable to systematize the factors of formation and development of the self-employment market in the RK. The purpose of this stage is to systematically combine all indicators that reflect the assessment of factors in the formation and development of the self-employment market in the RK. The fifth stage involves a comprehensive analysis and assessment of the current state of the self-employment market. It should reflect the number of self-employed in absolute and relative terms, the state of the infrastructure for the implementation of independent human activities, a portrait of a self-employed citizen in the RK. Important indicators for assessing the current state of the self-employment market are:

- work of the state apparatus aimed at the development of self-employment;

- level of education of self-employed in Kazakhstan;

- ratio of the self-employed by age groups in the total number;

- share of self-employed women in the total volume of self-employment in the RK;

- presence of trade union associations of self-employed in Kazakhstan;

- perception of self-employment as a professional activity in Kazakhstani society.

A comprehensive assessment of the self-employment market includes determining the volume of the self-employment market, which is determined by the indicators of the number of self-employed in the RK and the demand for their services. If we determine the number of self-employed using the official statistics of the Committee on Statistics of the Ministry of National Economy of the RK, then the amount of demand for their services will be determined by the amount of money earned by all groups of self-employed, reflected in the official statistical information. Thus:

$$D = ((Y_1 - X_1)/2 + X_1) * m_1 + ((Y_2 - X_2)/2 + X_2) * m_2 + \ldots + ((Y_n - X_n)/2 + X_n) * m_n \quad (1)$$

where D – demand for self-employed services;

X – the value of the lower boundary of the income interval for each group of self-employed RK;

Y – the value of the upper boundary of the

income interval for each group of self-employed RK;

m – the number of self-employed in each group of self-employed by income level in the Republic of Kazakhstan;

n – sequence number of the group.

The share of the contribution to the Gross Domestic Product of the self-employed who belong to the rural population is determined in a similar way:

$$V = \frac{\left(\frac{Y1-X1}{2}+X1\right) \cdot m1 + \left(\frac{Y2-X2}{2}+X2\right)}{GDP} * \quad (2)$$

where V – contribution of self-employed living in rural areas to the national economy of the RK;

X – the value of the lower boundary of the income interval of each group of self-employed, belonging to the rural population, of the RK;

Y – the value of the upper limit of the income interval of each group related to the rural population of the RK;

M – the number of self-employed in each group of self-employed, belonging to the rural population, by income level in the RK;

n – sequence number of the group;

At the sixth stage, the intellectual and innovative potential, the climate, as well as the self-employment capital in Kazakhstan are determined for the development of the intellectual and innovative segment of the self-employment market in the republic, which will subsequently lead to economic growth in the RK. At this stage, it is necessary to highlight a potential intellectual and innovative segment in the self-employment market of Kazakhstan. Then one should study the possibility of forming an intellectual and innovative climate, aimed at its development, in order to obtain intellectual and innovative capital. In our research, we assume that the formation and development of intellectual and innovative self-employment in Kazakhstan will create an additional impetus to the economic development of the republic.

In the scientific literature there is already information that the speed of transition to new socio-economic relations and the effectiveness of the innovation economy are determined mainly by the intensity of dispersion of innovation processes, the formation of an appropriate institutional environment and the accumulation of intellectual capital at the regional level [1; 2].

However, few studies take into account the "delayed effect" or "time lag effect" of innovation on the economic development of countries and regions. Currently, there is also no clear definition of intellectual and innovative activity. We consider regional intellectual and innovative activity as an appropriate and important part of the research.

We understand and define this activity in the context of the study of regional intellectual and innovative ecosystems, characterized as a set of interrelated research, educational, sociocultural, technological, financial, economic and organizational structures, in which interaction is focused on the creation, exchange, transformation and implementation of new knowledge in various forms of new technologies, products and services. Such structures include, in particular, coworking centers and other educational, entrepreneurial and non-profit organizations in the region.

In our research, we identify the key components of regional intellectual and innovative activity: regional intellectual and innovative potential; regional intellectual and innovative climate; regional intellectual and innovative capital. Using the example of the Siberian regions of Russia, we proved [3] that there is a stable relationship between the economic development of regions and their intellectual and innovative development. However, a "delayed" economic effect of intellectual and innovative activity is possible due to the lag from the moment of creation to the moment of introducing a new technology, product or service. The "delayed effect" is clearly manifested in the influence of the innovation climate and intellectual capital on GRP per capita.

The highest values of are found on the 7th and 8th lags for the climate and the 5th, 6th

and 7th lags for capital. These results can be interpreted as follows: changes in the innovation climate lead to noticeable changes in the economy on average from 7 to 8 years later, and capital accumulation stimulates the economic development of the region on average in 5-7 years. This conclusion is fully explained from the point of view of our view of regional intellectual and innovative development [3], since we consider the climate as an environment for the transformation of potential into intellectual and innovative capital.

Thus, the development of intellectual and innovative potential, climate and subsequent capital leads in the medium term to economic progress, and the self-employed and self-employment as a phenomenon can be fully integrated into this process due to the enormous human resource and capital. In addition, the self-employed and self-employed, the self-employment market reflect all three components of our model of intellectual and innovative activity. In this regard, it is necessary to analyze the potential, climate in the self-employment market and develop recommendations for the formation of intellectual and innovative capital in the self-employment market. At the seventh stage, using modern statistical information processing packages based on quantitative economic and mathematical methods and the available official data of the Government of the Republic of Kazakhstan, it is necessary to determine the impact of specific factors on the level of self-employment in Kazakhstan. You need to answer the following questions:

- which of the factors affect the level of self-employment to a greater extent, and which - to a lesser extent;

- to determine the influence of the main factors on the level of self-employment of the RK.

To do this, we use the following indicators: indicator of the Gross Domestic Product of the RK; RK unemployment rate; indicator of the volume of services rendered excluding the non-observed sector of the economy in the RK; indicator of the total volume of industrial production (goods, services) in the RK; indicator of Gross enrollment in higher education in the RK. It is defined as the ratio of the number of students, regardless of age, studying in organizations of technical and vocational education and universities, to the total population aged 18-22; indicator of the number of self-employed in the RK; indicator of the number of people employed in the RK.

Next, using these indicators, it is necessary to determine the level of self-employment and the level of the share of services in the volume of services rendered, excluding the non-observed sector of the economy in the total volume of industrial production (goods, services) in the RK. Thus:

$$L_{sem} = Sem/Emp \quad (3)$$

where L_{sem} – this is the level of self-employment;

Sem – it is an indicator of the number of self-employed;

Emp – it is an indicator of the number of employment.

$$L_{ser} = Ser/Pr \quad (4)$$

where L_{ser} – this is the level of the share of services in the volume of services rendered excluding the non-observed sector of the economy in the total volume of industrial production (goods, services);

Ser – indicator of the volume of services rendered excluding the non-observed sector of the economy;

Pr – indicator of the total volume of industrial production (goods, services).

In this study, it is necessary to determine the dependence of the level of self-employment on the dynamics of GDP, the unemployment rate, the share of the service sector and the dynamics of the gross enrollment in higher education.

Thus, the indicator of the level of self-employment is the dependent variable, and the indicators of GDP, unemployment rate, the share of the service sector and the gross enrollment

in higher education are independent variables. For economic and mathematical calculations, it is advisable to use statistical computer programs: PSPP and Rstudio.

In the work, it is necessary to put forward a number of hypotheses regarding the influence of factors in the formation of self-employment and its level in the RK. When forming some hypotheses, it should be taken into account that more educated people in Kazakhstan prefer to work for hire in the state or business sectors, since self-employment in Kazakhstan remains a predominantly low-skilled and agricultural field of employment [4]. The share of start-up employers in self-employment in Kazakhstan [5] is also extremely small in order for them to have a significant impact on the level of self-employment.

To test the formulated research hypotheses, it is necessary to form an information and statistical base, which includes 5 indicators for the definite period based on the official data of the Constitutional Court of the Ministry of National Economy of the RK.

At the eighth stage, a forecast of the dynamics of the level of self-employment in Kazakhstan for a five-year period should be developed. To do this, you need to build a graph using a mathematical model, determine the 95 and 99% confidence intervals. Then compare the projected values and the actual data of the Committee on Statistics of the Ministry of National Economy for one year after the corresponding calculations.

At the final ninth stage, it is necessary to develop measures for the development of the self-employment market in the RK, which will include the improvement of state-legal regulation of self-employment in the RK, the formation of an intelligent and innovative form of self-employment in the labor market of Kazakhstan, as well as a tool for developing the infrastructure of the self-employment market in Kazakhstan.

CONCLUSION. The formed methodological approach includes a combination of various indicators, analysis, logical conclusions and quantitative research methods.

To date, there is no integrated approach to the study of self-employment in Kazakhstan, therefore, the proposed methodological approach will allow, based on system analysis, to develop a comprehensive mechanism for assessing the self-employment market.

Approbation of individual results of the proposed methodology, such as disclosing the structural composition of the self-employed and building a model of the self-employment market [6]; systematization of self-employment factors [7], analysis of the state-legal regulation of self-employment in the Republic of Kazakhstan [8] and assessment of the level of self-employment in Kazakhstan [9] also confirm its importance.

REFERENCES:

1. Liu, C., Li, X. & Xu, L. (2014). The influence of regional intellectual capital on regional economic development: evidence from Shandong province. *Proceedings of the international conference on management of e-commerce and e-government*, Shanghai, 280-284. https://doi: 10.1109/ICMeCG.2014.64

2. Sun, Y.-B., Ren, R.-R. & Zhang, Y.-B. (2017). Study on regional technology innovation environment of Northeast old industry and its influences on regional innovation performance. *Journal of Beijing institute of technology (english edition), 2*(16), 181-186. https://www.researchgate.net/journal/Journal-of-Beijing-Institute-of-Technology-English-Edition-1004-0579

3. Dubina, I.N., Mkrtchyan, G.M., Ostaschenko, T.V. & Baitenizov, D.T. (2019). On the assessment of regional intellectual and innovation activities based on measurement theory methods and panel data regression analysis. *International journal ofbusiness and globalisation, 4*(22), 655-680. https://doi.org/10.1504/IJBG.2019.100259

4. Patlasov, O.Iu., Azatbek, T.A. & Baitenizov, D.T. (2018). Novye trendy v samozanyatosti v respublike kazahstan: ot nadomnogo truda k kreativnym uslugam [New trends in self-employment in the Republic of Kazakhstan: from home work to creative services]. *Human science: humanitarian studies, 1*(31), 192-206. https://doi 10.17238/issn1998-5320.2018.31.192

5. Bureau of National Statistics. (November 15, 2022). http://stat.gov.kz.

6. Azatbek, T.A. & Baitenizov, D.T. (2017). Samozanyatost' v sisteme nauchnyh znanij [Self-employment in the system of scientific knowledge]. *Reports of the national academy of sciences of the republic of Kazakhstan, 4*(314), 142-149. http://nblib.library.kz›elib...kz...04-2017/Azatbek0417. pdf

7. Baitenizov, D.T. (2018). Faktory razvitiya rynka samozanyatosti [Factors in the development of the self-employment market]. *Bulletin of the University "Turan", 1*(77), 246-253.https://vestnik. turan-edu.kz›jour/article/view/1176

8. Azatbek, T.A., Baitenizov, D.T. & Dubina, I.N. (2017). Gosudarstvenno-pravovoe regulirovanie samozanyatosti v Respublike Kazahstan [State-legal regulation of self-employment in the Republic of Kazakhstan]. *Vestnik KarGU, 2*(86),75-86. http://rep.ksu.kz/handle/data/2315

9. Baitenizov, D.T. (2018). Analiz urovnya samozanyatosti v Kazahstane [Analysis of the level of self-employment in Kazakhstan]. *Management of a modern organization: experience, problems and prospects: a collection of scientific articles of the IX international scientific and practical conference,* 3-9. https://rusneb.ru/catalog/000200_000018_RU_NLR_BIBL_A_011835127/

СВЕДЕНИЯ ОБ АВТОРАХ:

Baitenizov Daniyar - PhD, Associate Professor of the Finance and Management Department, M. Kozybayev North Kazakhstan University, Petropavlovsk, Republic of Kazakhstan
E-mail:baitenizov84@mail.ru

Abdreissova Diana* – Methodologist of the Scientific and Methodological Department, M. Kozybayev North Kazakhstan University, Petropavlovsk, Republic of Kazakhstan
E-mail: freelance_diana@mail.ru

Байтенизов Данияр Тюлюгунович – PhD, М.Қозыбаев атындағы Солтүстік Қазақстан университетінің «Қаржы және менеджмент» кафедрасының доценті, Петропавловск қ., Қазақстан Республикасы
E-mail:baitenizov84@mail.ru

Абдреисова Диана Жакслыковна* – ғылыми-әдістемелік бөлімнің әдіскері, М.Қозыбаев атындағы Солтүстік Қазақстан университеті, Петропавловск қ., Қазақстан Республикасы
E-mail: freelance_diana@mail.ru

Байтенизов Данияр Тюлюгунович – PhD, доцент кафедры «Финансы и менеджмент» Северо-Казахстанского университета имени М. Козыбаева, г. Петропавловск, Республика Казахстан
E-mail:baitenizov84@mail.ru

Абдреисова Диана Жакслыковна* – методист научно-методического отдела, Северо-Казахстанский университет имени М. Козыбаева, г. Петропавловск, Республика Казахстан
E-mail: freelance_diana@mail.ru