

ASSESSMENT AND MEASUREMENT OF THE VARIABILITY OF INDICATORS OF
AGRICULTURAL LABOR MARKET OF THE REPUBLIC OF KAZAKHSTAN

ҚАЗАҚСТАН РЕСПУБЛИКАСЫНЫҢ АГРАРЛЫҚ ЕҢБЕК НАРЫҒЫ
ИНДИКАТОРЛАРЫНЫҢ АУЫТҚУЫН БАҒАЛАУ ЖӘНЕ ӨЛШЕУ

ОЦЕНКА И ИЗМЕРЕНИЕ КОЛЕБЛЕМОСТИ ИНДИКАТОРОВ АГРАРНОГО
РЫНКА ТРУДА РЕСПУБЛИКИ КАЗАХСТАН

D.N. SHAIKIN

C.E.Sc., Professor

M.M. VALIEVA

C.E.Sc., Associated Professor

O.V. KOPYLOVA

C.E.Sc., Associated Professor

North-Kazakhstan State University named after M. Kozybayev

Д.Н. ШАЙКИН

э.ғ.к. профессор

М.М. ВАЛИЕВА

э.ғ.к., доцент

О.В. КОПЫЛОВА

э.ғ.к., доцент

М.Қозыбаев атындағы Солтүстік-Қазақстан мемлекеттік университеті

Д.Н. ШАЙКИН

к.э.н, профессор

М.М. ВАЛИЕВА

к.э.н, доцент

О.В. КОПЫЛОВА

к.э.н, доцент

Северо-Казахстанский государственный университет им. М. Козыбаева

Abstract. The current state of one of the economic institutions of the republic –is labor market is analyzed. The issues of assessing and measuring the variability of its absolute indicators are considered: the number of employed and unemployed in the structure of the economically active population, the level of employment and unemployment are considered. The current state of agricultural labor market is presented. The points of view and scientific approaches of Kazakhstan scientists on this issue are presented. Based on the study of statistical information on the current situation in labor market in agricultural sector of Kazakhstan, the coefficients of variation (variability) in the number of employed and unemployed rural population were calculated by age criteria. The calculation is presented in the form of statistical identities. The greatest variability is noted in the economically active population groups of 15–19 and 25–29 years old. In the specified age intervals, the value of the coefficient of variation is maximum. The authors point out the need to take into account the results obtained in the development of national and regional policy documents, the purpose of which is to further effectively develop the labor market in agricultural sector, as well as to ensure the growth of the level and quality of life of people living in rural areas.

Аңдатпа. Республиканың экономика институттарының бірі – еңбек нарығының ағымдағы жай-күйі талданған. Оның абсолюттік индикаторларының ауытқушылығын бағалау және өлшеу мәселелері: экономикалық белсенді халық құрылымында жұмыспен қамтылғандар мен жұмыссыздар саны, жұмыспен қамту және жұмыссыздық деңгейі қарастырылған. Аграрлық еңбек нарығының қалыптасқан жағдайы ұсынылған. Осы мәселе бойынша қазақстандық ғалымдардың көзқарастары мен ғылыми көзқарастары келтірілген. Қазақстанның аграрлық саласындағы еңбек ресурстары нарығындағы ағымдағы жағдай туралы статистикалық ақпаратты зерделеу негізінде жас шамасы бойынша жұмыспен

Аннотация. Проанализировано текущее состояние одного из институтов экономики республиканской – рынка труда. Рассмотрены вопросы оценки и измерения колеблемости его абсолютных индикаторов: численности занятых и безработных в структуре экономически активного населения, уровня занятости и безработицы. Представлено сложившееся состояние аграрного рынка труда. Приведены точки зрения и научные подходы казахстанских ученых по данной проблеме. На основе изучения статистической информации о текущей ситуации на рынке трудовых ресурсов в аграрной сфере Казахстана рассчитаны коэффициенты вариации (колеблемости) по численности занятого и безработного сельского населения по возрастным критериям. Расчет представлен в виде статистических тождеств. Наибольшая колеблемость отмечается в группах экономически активного населения 15-19 и 25-29 лет. В указанных возрастных интервалах значение коэффициента вариации максимальное. Авторы указывают на необходимость учета полученных результатов при разработке национальных и региональных программных документов, целью которых является дальнейшее эффективное развитие рынка труда в аграрном секторе, а также обеспечение роста уровня и качества жизни населения, проживающего в сельской местности.

Түйінді сөздер: аграрлық сектор, еңбек нарығы, жұмыспен қамту, жұмыссыздық, жастар, экономикалық белсенді халық, өмір сүру деңгейі мен сапасы, вариация коэффициенті.

Ключевые слова: аграрный сектор, рынок труда, занятость, безработица, молодежь, экономически активное население, уровень и качество жизни, коэффициент вариации.

ments in the social, economic, cultural and other spheres of life of modern society.

In this article we consider the analysis of the variability of the main indicators of the agricultural labor market in the Republic of Kazakhstan.

According to the authors' opinion, the study of this issue is an important aspect in the development of strategic plans for the development of the agricultural sector of our country. The analysis of the dynamics of the fluctuations in the labor market's indicators will make it possible to scientifically justify the tendencies of its development, timely take measures aimed at the increasing the level of employment, reducing the level of unemployment, and also contributing to the growth of the level and quality of life of people living in the rural areas.

Material and methods of research.

Modern researchers, including S.V. Bespalyi, A.S. Narynbayeva and L.I. Kashuk note that the labor market as a multifaceted and heterogeneous dynamic system of socio-economic relations is called upon to ensure the reproduction and effective use of labor force (eco-

nomically active population). The authors argue that the ongoing agrarian reforms in the country have revealed the important issues in the sphere of labor market formation and regulation that require timely solutions. Researchers conclude that the rural labor resources are the fundamental elements of the productive potential of agriculture and the main driving force of the innovative development of the agrarian sector of the region [1].

A.K. Dzhusibaliyeva and G.Zh. Abdyk-erov introduce the measures of state support of employment in agriculture of the republic, studies labor market problems in rural areas and formulate directions for their solution within the framework of state programs in the field of ensuring productive and rational employment, as well as the development of entrepreneurship. The authors emphasize the fact that at present the problem of rural unemployment, including unemployment of rural youth, is topical. At the same time, effective use of labor resources at the stage of industrial-innovative development of the national economy and diversification of the agro-industrial complex of the Republic of Kazakhstan is the main factor in increasing the employment of the rural population [2].

Zh.S. Bulhairova, A.M. Balkibayeva and Z.P. Aidynov, researching the main trends in

the development of human capital in Kazakhstan's agriculture, note that human capital in rural areas is one of the main components of the resource potential of agriculture. The authors state that modern economic conditions require more effective use of labor potential, while the problem of employment in agriculture acquires special significance, where the scope of employment of the population is narrowed [3].

G.U. Akimbekova and G. Egizbaeva discuss about organizational and economic preconditions for the association of small business forms and units in agricultural cooperatives, as well as the need to use new approaches for the development of agricultural cooperation in Kazakhstan. The authors emphasize the improvement of the regulatory and legal framework, the system of state financial and credit support, the formation of information and consulting services, the improvement of the system of training the cooperative personnel, the creation of a unified system of agricultural cooperation, etc. [4].

Results and their discussion. Table 1 presents the dynamics of the main indicators of urban and rural labor markets in the Republic of Kazakhstan.

Table 1 – The main indicators of urban and rural labor markets in the Republic of Kazakhstan in 2014-2016 by age

Indicator	2014		2015		2016	
	urban	village	urban	village	urban	village
Economically-active population, in thousand people	4 973,3	3 988,6	5 149,6	3 925,3	5 152,3	3 846,6
The level of economic activeness of population, %	69,4	72,4	69,6	73,3	68,8	71,7
Employed population, in thousand people	4 715,3	3 794,8	4 890,7	3 733,1	4 890,7	3 662,7
Level of employment, in % to the:						
population aged 15 years and more	65,8	68,9	66,1	69,7	65,3	68,3
amount of economically active population	94,8	95,1	95,0	95,1	94,9	95,2
Hired workers, in thousand people	3 884,7	2 225,0	4 069,0	2 225,9	4 102,0	2 240,9
The share of the hired workers in the amount of employed people, %	82,4	58,6	83,2	59,6	83,9	61,2
Self-employed workers, in thousand people	830,6	1 569,8	821,7	1 507,2	788,7	1 421,8
The share of the self-employed people in the amount of employed people, %	17,6	41,4	16,8	40,4	16,1	38,8
Unemployed people, in thousand people	258,1	193,8	258,9	192,3	261,6	183,9
Level of unemployment, %	5,2	4,9	5,0	4,9	5,1	4,8
The level of youth unemployment (15-28 years), %	5,0	3,4	4,8	3,7	4,6	3,5
Level of long-term unemployment, %	2,1	2,6	2,2	2,7	2,2	2,3
People who are not a part of the economically active population, thousand people	2 193,1	1 522,8	2 250,2	1 429,9	2 339,3	1 515,7
Share of people who are not a part of economically active population, %	30,6	27,6	30,4	26,7	31,2	28,3

Source: [5]

Социальные проблемы села

According to the data in table 1, the dynamics of urban and rural labor markets in the Republic of Kazakhstan is multidirectional.

Thus, the amount of economically active population in the urban labor market amounted to 5 152,3 thousand people, which is 2,7 thousand people (or 0,05%) more than in 2015 and 179,0 thousand people (or 3,6%) more than in 2014. In turn, this indicator in the rural labor market in 2016 amounted to

3 846,6 thousand people, which is 78,7 thousand people (or 2,0%) less than in 2015 and 142,0 thousand people, people (or 3,56%) less than in 2014. Practically similar trends are noted in the number of employed population in the urban and rural labor markets of our country.

Table 2 shows the number of urban and rural economically active population by age.

Table 2 – The amount of urban and rural economically active population of the Republic of Kazakhstan in 2014-2016 by age

Indicator	2014		2015		2016	
	urban	village	Urban	village	urban	village
Amount of the economically-active population, in thousand people	4 973,3	3 988,6	5 149,6	3 925,3	5 152,3	3 846,6
in the following age interval:						
15	0,7	3,3	0,3	1,2	0,0	0,4
16-19	44,7	92,9	43,9	84,1	37,3	72,5
20-24	595,5	582,0	668,7	517,2	567,1	473,3
25-29	820,0	596,4	804,3	601,6	841,1	604,8
30-34	779,4	571,6	779,5	560,3	823,1	573,7
35-39	676,8	439,5	708,7	442,6	699,5	431,2
40-44	622,2	454,4	617,3	439,4	644,8	437,9
45-49	536,1	435,1	556,5	432,9	556,2	420,0
50-54	471,8	438,1	499,9	431,0	491,7	415,3
55-59	291,1	254,4	330,9	275,8	343,9	275,9
60-64	107,2	97,7	112,2	104,5	116,5	109,2
65 and more	27,9	23,4	27,3	34,9	31,1	32,5

Source: [6]

The largest amount of the economically active population is noted in such age groups as 25-29 years and 30-34 years.

For example, the amount of urban economically active population aged 25-29 years in 2016 was 841,1 thousand people, which is 36,8 thousand people (or 4,58%) more than in 2015 and 21,1 thousand people (or 2,57%) more than in 2014. In turn, the value of this indicator in rural areas was 604,8 thousand people, which is 3,2 thousand people (or 0,53%) more than in 2015 and 8,4 thousand people (or 1,41%) more than in 2014.

The considered data on the analysis and assessment of the labor market in the Republic of Kazakhstan, which are reflected in the form of relevant indicators published by the state statistical bodies, are generally accepted. Along with this, a number of problems needed to be resolved, one of which is the assessment of the degree of stability (variability) of the dynamical development of the economically active population in the Republic of Kazakhstan.

The comparative assessment of the stability (variability) of totality's units is carried out

on the base of the calculation of the statistical coefficient of variation, which is calculated as follows:

$$V = \frac{\sigma}{\bar{x}} \cdot 100\% \quad (1)$$

where V is the coefficient of variation; \bar{x} is the average value of the characteristic in the totality; σ is the standard deviation.

The greater the value of this indicator, that is, the variability of the coefficient of variation, the less homogeneity of the population under consideration and a significant variation in the values of the characteristic around the average meaning. With regard to the assessment of economic activity of the population of the Republic of Kazakhstan, it should be said that the greater the value and amplitude of this coefficient, the less stable it has.

The standard deviation (σ) and the average value of the characteristic in the aggregate (\bar{x}) are, respectively, as follows:

$$\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{n}} \quad (2)$$

$$\bar{x} = \frac{\sum x}{n} \quad (3)$$

where \bar{x} is the meanings of values for each unit of the totality; n is the number of units in the totality.

Based on the available statistical data for 2012-2016 by the number of employed and unemployed people living in the rural areas of our country, we calculate the coefficients of variation for the corresponding age groups (tables 3, 4).

Table 3 – Calculation of statistical coefficients of variation in the number of employed population of the Republic of Kazakhstan at the agrarian sector of the economy in 2012-2016 by age

Indicator	2012	2013	2014	2015	2016	X _{ср.}	σ	V
Employed people, total	3 896,40	3 900,70	3 794,80	3 733,10	3 662,70	3 797,5	92,5	2,4
15-19	137,3	93,2	92,6	82,6	71,1	95,4	22,5	23,6
20-24	501,9	473,3	564,2	497,9	456,1	498,7	36,8	7,4
25-29	560,1	591,6	566,1	574,8	577,3	574,0	10,7	1,9
30-34	591,4	586,8	529	522,4	531,8	552,3	30,3	5,5
35-39	423,6	425,4	417,8	417,8	407,5	418,4	6,3	1,5
40-44	425	426,7	433,1	420,3	419,7	425,0	4,9	1,1
45-49	442,4	447,9	415,3	413,4	401,9	424,2	17,8	4,2
50-54	422,3	443,2	419,9	410,4	396,6	418,5	15,3	3,7
55-59	252,3	271,8	239,1	256,2	261,9	256,3	10,8	4,2
60-64	108,8	112,2	94,2	102,3	106,5	104,8	6,2	5,9
65 and more	31,4	28,7	23,4	34,8	32,3	30,1	3,9	12,9

Source: [7], calculated by the authors

According to the data in table 3, the number of employed population in the agricultural sector of the Republic of Kazakhstan is decreasing.

Thus, in 2016 the value of this indicator was 3 662,7 thousand people, which is 70,4 thousand people (or 1,89%) less than in 2015 and 132,1 thousand people (or 3, 48%) less than in 2014.

The highest variability, characterized by the coefficient of variation, is noted in the age group 15-19 years of the employed population

in rural areas. According to the calculation, it is 23,6%. Also, high variability is noted in the employed population in age group of 20-24 years. Here, it is 7.4%.

However, in general, the overall coefficient of variation for the employed population living in rural areas in the Republic of Kazakhstan is 2,4%.

According to the data in table 4, the number of unemployed people in the agrarian sector is also decreasing.

Table 4 - Calculation of the statistical coefficients of variation in the number of the unemployed population of the Republic of Kazakhstan at the agrarian sector of the economy in 2012-2016 by age.

Indicator	2012	2013	2014	2015	2016	X _{ср.}	σ	V
Unemployed people, total	203,5	201,8	193,8	192,2	183,9	195,0	7,1	3,6
15-19	3,6	1,5	3,6	2,7	1,8	2,6	0,9	33,2
20-24	15,2	17,9	17,8	19,3	17,3	17,5	1,3	7,6
25-29	40,7	42,4	30,3	26,8	27,5	33,5	6,7	19,9
30-34	37,9	47,1	42,6	37,9	41,9	41,5	3,4	8,3
35-39	23,7	20,9	21,7	24,7	23,6	22,9	1,4	6,1
40-44	18,4	18,9	21,2	19	18,2	19,1	1,1	5,6
45-49	18,4	14,7	19,8	19,5	18,1	18,1	1,8	10,0
50-54	22	22,1	18,2	20,6	18,7	20,3	1,6	8,0
55-59	18,9	13	15,3	19,5	14	16,1	2,6	16,2
60-64	4,7	3,3	3,4	2,2	2,7	3,3	0,8	25,8
65 and more	-	-	-	-	0,2	0,0	-	-

Source: [Ik.7], calculated by the authors.

Thus, in 2016 the value of this indicator was 183,9 thousand people, which is 8,3 thousand people (or 4,31%) less than in 2015 and 9,9 thousand people (or 5,11%) is less than in 2014.

The highest variability, characterized on the base of the value of the coefficient of variation, is noted among the unemployed people in the rural areas in the age group of 15-19 years. According to the calculation, it is 33,2%. Also, higher variability is noted amongst the unemployed population of 25-29 years. Here, it is 19,9%.

However, in general, the overall coefficient of variation for the unemployed population living in the rural areas in the Republic of Kazakhstan is 3,6%.

Conclusion.

1. The existing gap between the values of variation indicators among employed and unemployed youth, living in rural areas with other categories of economically active population, indicates the need for further development and improvement of the agricultural labor market in the Republic of Kazakhstan.

2. This is expressed in improving the state of the transport infrastructure, ensuring the expansion of information awareness of the population about available job vacancies, the development of small business and entrepreneurship, etc.

3. Therefore, it is necessary to carry out different types of research aimed at the justification of the factors influencing the development of modern agricultural labor market.

4. Besides, understanding these factors would allow providing more qualitative economic forecasts of this market institute's development tendencies.

5. According to the authors' opinion, the obtained results can be taken into account in the development of national and regional policy documents aimed at the further effective development of the agricultural labor market, reducing the impact of destabilizing factors, as well as ensuring the growth of the level and quality of life of the population living in rural areas of our country.

Список литературы

1 Беспалый С.В., Нарынбаева А.С., Кашук Л.И. Сельский рынок труда: особенности регионального развития // Проблемы агорынка. - 2018. - №2. - С. 209-214.

2 Джусибалиева А.К., Абдыкерова Г.Ж. Государственная поддержка занятости в сельском хозяйстве Казахстана // Проблемы агорынка. - 2018. - №2. - С. 215-224.

3 Булхайрова Ж.С., Балкибаева А.М., Айдынов З.П. Человеческий капитал в сельском хозяйстве Казахстана: современные тенденции // Проблемы агорынка. - 2017. - №4. - С. 180-184.

4 Akimbekova G.U., Yegizbayeva G. Strategy of agricultural cooperation development in Kazakhstan // Проблемы агорынка. - 2017. - №1. - С. 92-96.

5 Экономическая активность населения в Казахстане. Статистический сборник на казахском и русском языках / под ред. Н.С. Айдапкелова.- Астана: Комитет по статистике Министерства национальной экономики Республики Казахстан, 2017. - 213с.

6 Занятость в Казахстане. Статистический сборник на казахском и русском языках / под ред. Н.С. Айдапкелова. - Астана: Комитет по статистике Министерства национальной экономики Республики Казахстан, 2017. - 193с.

7 Сайт Комитета по статистике Министерства национальной экономики Республики Казахстан [Электронный ресурс].-2018.- URL: <http://www.stat.gov.kz> (дата обращения: 26.11.2018).

References

1 Bepalyi S.V., Narynbayeva A.S., Kashuk L.I. Rural labor market: peculiarities of regional development // Problems of Agrimarket. - 2018. - №2. - PP. 209-214.

2 Dzhusibalieva A.K., Abdykerova G.Zh. State support of employment in agriculture of Kazakhstan // Problems of Agrimarket. - 2018. - №2. -PP. 215-224.

3 Bulhairova Zh.S., Balkibaeva A.M. Aidyrov Z.P. Human capital in agriculture of Kazakhstan: modern trends // Problems of Agrimarket. - 2017. - №4. - PP.180-184.

4 Akimbekova G.U., Yegizbayeva G. Strategy of agricultural cooperation development in Kazakhstan // Problems of Agrimarket. - 2017. - №1. - PP. 92-96.

5 Economic activity of population in Kazakhstan. Statistic manual in Kazakh and Russian languages / Editor-in-chief N.S Aidapkelov.- Astana: Committee on statistics of the Ministry of the National Economy of the Republic of Kazakhstan, 2017. - 213p.

6 Employment in Kazakhstan. Statistic manual in Kazakh and Russian languages / editor-in-chief N.S Aidapkelov. -Astana: Committee on statistics of the Ministry of the National Economy of the Republic of Kazakhstan, 2017. - 193p.

7 Web-site of the Committee on statistics of the Ministry of the National Economy of the Republic of Kazakhstan [Electronic Resource]. - 2018.-URL: <http://www.stat.gov.kz> (date of application: 26.11.2018).