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B.L. TatibekovSuleiman Demirel University, Almaty, Kazakhstan
tatibekov@gmail.com**DEVELOPMENT AND FORMALIZATION STRATEGY
OF LABOR MARKET IN KAZAKHSTAN UNDER
THE CONDITIONS OF DIGITALIZATION**

Abstract. The paper is aimed at developing the main trends of labor market and employment development under the digitalization of Kazakhstan economy.

A variety of methods, combined by a systematic approach to the study of the labor market and the employment of human resources were applied for the research.

Based on the historical analysis, the article analyzes the features of the integration of the Kazakhstan labor market into the international markets. An important point of this analysis is that the existing trends in the development of international labor migration are revealed through the prism of the laws of Gravity. Based on the features of the digitalization development, the work substantiates the need to use new tools for employment registering, in particular, the introduction of biometric registration of migrant workers. In addition, the article pays special attention to the development of outsourcing and a globally-individualized labor market.

The author has developed some strategic trends for development and formalization of the labor market in Kazakhstan under digitalization process. Recommendations on the formation of international integrated databases on labor migration and the development of the Concept of human resources employment in Kazakhstan are proposed.

Key words: human resources, labor market, labor migration, IV industrial revolution, digitalization.

Introduction

One of the principal and main factors of social and economic development of the Republic of Kazakhstan under IV industrial revolution or digitalization of the country economy will be its human resources. We do not belittle the role of production, processing industry, agricultural sector etc. for the economic development of the country where Kazakhstan has absolute and competitive advantages. At the same time, its development is impossible without effective utilization of human resources of the country. Human resources meaning in its contemporary context is beyond any individual country. In many cases, human resources meaning also includes foreign labor force working within transnational corporations and migrant workers coming to a country for seasonal works under a long-term or short-term contracts.

It should be noted that under globalization conditions the human resources of the country should be developed and utilized in intensive and extensive directions. This is especially critical under IV industrial revolution, development of IT technologies, outsourcing when the national labor market becomes an integrated part of the international, global labor market, when the problems of physical border crossing will vanish, when employment will be determined in its temporal, not spatial content.

The strategy and main trends of development and formalization of labor market and employment of human resources in Kazakhstan under forming of IV industrial revolution, integration into the international and global labor markets and employment forms cannot be imagined and understood without understanding of the main provisions of economic theory of the country development in whole, and separate individual in particular, without understanding of general economic laws and development, without retrospective analysis of its functioning during previous periods as informational and practical base for prospective planning. As result, the main research statements are described below in two parts.

The first part describes and shows the main typical features of Kazakhstan integration process into the international and global labor markets and employment forms in its historical retrospective content. This analysis is represented in its interconnection and along the lines of general and specific laws of economic and physical development.

The second part reveals the main trends of development and formalization of labor markets and employment in Kazakhstan under its integration into the international and global labor markets and forms of employment. These trends are revealed and based on specific features of transformation of the international and global labor markets and employment forms while forming of digital economy in Kazakhstan.

Spatial and temporal features of development of migration, international and global labor markets in Kazakhstan in 2001 – 2017

Common laws of societal development (law of time economy, law of rising wants, law of increasing labor efficiency, law of work distribution) at contemporary stage show that people, to increase the level of their welfare, migrate to that places where the efficiency of their work is higher. Development of industry in cities, concentration of human resources in them resulted in higher living standards and higher efficiency of human labor. In this regard, the world urbanization processes are logical processes as consequence of operation of the mentioned above common laws of development (law of time economy, law of rising wants, law of increasing labor efficiency, etc.).

At the current stage, under industrial and innovative development, forming of IV industrial revolution, the agricultural type of production, due to adoption of new technologies, encounters not only with employment problems in rural areas, but restrains, to some extent, more effective utilization of human potential. Concentration of industrial production and human resources in cities, and, as consequence, development of service field, increase of employment opportunities, availability and growth of more diverse, flexible forms of employment are the main reasons of human resources migration to cities.

The global tendencies of migration processes development, also available in Kazakhstan, show onrush development of urbanization. This is stipulated not only by technological innovations in the field of transport and communications, but revolutionary (not evolutionary) development of human potential, more and more increasing necessity on its effective utilization for a human itself.

In Kazakhstan, the same as in other countries, urbanization exhibits in growth of cities population.

It is necessary to note that immigration to cities, urbanization, and industrialization along with positive sides has negative effect on birth rate. Urbanization and closely connected with it industrial production are mainly connected with poor population birth. But agricultural type of production is mainly connected with extensive, large population birth. And if 3-4 and more children in a family in rural areas is usual, in cities, due to limited dwelling-space and necessity to give children qualitative education, etc. this number of children creates additional problems. Gradually the country encounters with population ageing. This is clearly seen in developed countries where urbanization of population is quite high.

In Kazakhstan, with the country development oriented on industrial and innovative society, and, as a consequence, forthcoming decrease of population growth owing to natural birth (reasonably stipulated physiologically limited time lag on human birth, development of urbanization, emigration) and simultaneous wish to become one of the advanced counties of the world, and significance of population growth due to mechanical growth or immigration including labor immigration should not cause doubts.

Kazakhstan has already some experience on attracting foreign labor force. From 2001 to 2017 there were about half million working people, and as of June 30, 2017 – 485.1 thousand people. Foreign labor force was from more than 150 world countries (Figure 1).

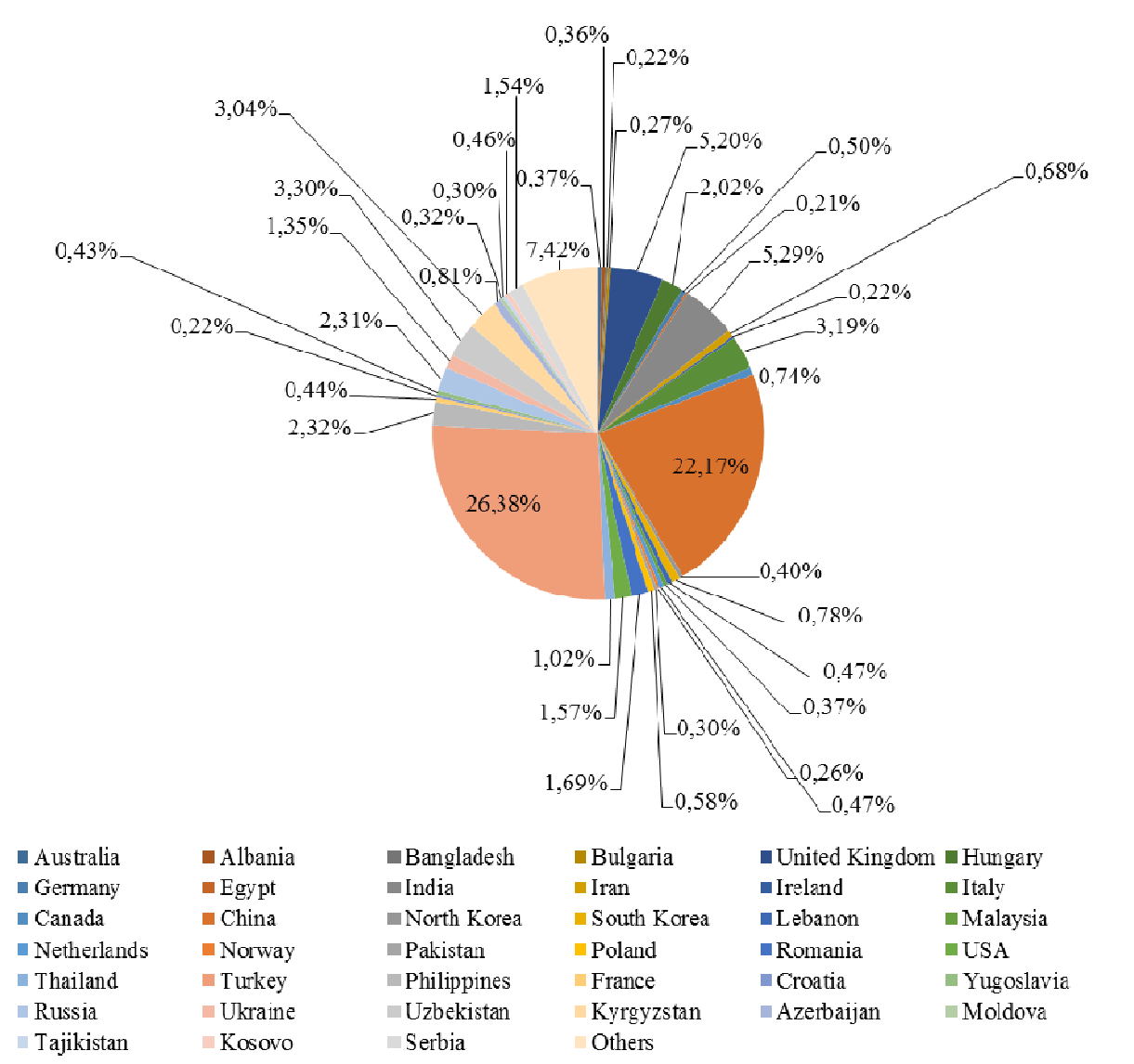


Figure 1 – Foreign labor force in Kazakhstan by countries

Figure 1 shows that leading positions for foreign labor force in Kazakhstan belong to Turkey and China. At the same time, among attracted foreign labor force there were representatives from such exotic countries as Vanuatu, Fiji, Maldives, etc.

The analysis of the international labor migration from 2001 to 2017 showed that Kazakhstan labor market is quite closely integrated into the international and global labor markets. And this occurred and continues to occur in spatial-temporal and professional contexts. In particular, supply and demand for foreign force appeared at primary (highly professional) and secondary (low professional) labor markets. At the primary labor market representing the international (within EurAsEC) and global (with foreign countries) markets, the foreign labor force works, mainly, officially. Foreign employees work in the field of education, construction, industry, trade, and financial sectors.

The research studies implemented by Oklahoma State University (USA), S. Demirel University, and Nazarbayev University (Kazakhstan) showed that migration processes including international labor migration are subjected to common gravitation laws.

It should be noted that gravitation theory, its theoretical bases are used in many cases by economists, geographers, and sociologists. Its conceptual base is often used and applied for studies of intranational and

international migration flows [1-3]. Its mathematical formalization is shown below. According to 2008 Nobel prize winner on economics, Paul Krugman, this formula is analog of Newton law [4].

$$F = \frac{R_1 * R_2}{D}$$

where F – gravitation force or migration flows between 2 regions (countries); R_1 – population of region (country)1, people; R_2 – population of region (country)2, people; D – distance between regions (countries)1 and 2, km.

The above formula shows that intensity of migration processes force between two countries is positively connected with its population number and negatively with distance between them.

It should be noted that gravitation force in migration processes is also closely connected with another factor – cultural affinity. Paul Krugman notes that the gravitational model of economic relations has definite anomalies based on cultural affinity.

Operation of the above mentioned gravitation law in terms of culture and space exists also in Kazakhstan. This can be observed in ethnical migration [3], and labor migration development.

Figure 2 shows that official labor migrants from Kyrgyzstan mainly find jobs at nearby regions, and regions of economic growth (Astana city).



Figure 2 – Labor migration from Kyrgyzstan to Kazakhstan

This regularity was also observed in temporal terms. After financial crisis of 2007, labor migrants from Kyrgyzstan migrated mostly to adjacent Almaty region, Almaty city, and regions of economic growth to make money.

The same is observed for Uzbekistan, Turkmenistan, Russia, and China.

The revealed regularity of the international migration processes can, in our opinion, become a base for creation of individual blocks under digitalization of the international labor migration. The distributed ledger technology known as blockchain technology, in our opinion, is applicable also for the analysis of the international labor migration. In this case, the main blocks of analysis can be not only professional context, but spatial-temporal too based on the migration theory.

The mentioned above analysis for 2001 – 2017 is based on official data, and therefore it shows only visible part of the international labor migration in Kazakhstan in its spatial-temporal and mathematically formalized content.

The invisible part, informal employment of labor migrants, their employment and settling regions have not been revealed yet completely and represent one of the main tasks and problems of any State tending to build constitutional civilized State.

It is necessary to note that formalization of economic processes including employment and labor markets, mostly, if not completely, are connected with digitalization, mathematical formalization of huge information flow of almost all social and economic processes, implementation of Big Data analysis concept (analysis and processing of huge data volumes).

The strategy of development and formalization of labor markets and human resources employment in Kazakhstan under digitalization process and integration into the international and global labor markets.

Revealing the main trends of development and formalization of labor market and employment of human resources in Kazakhstan under digitalization process and integration into the international and global labor markets, below is brief description of digitalization main bases, features of its exhibition, and then its influence on labor markets and employment forms.

First of all, note that all information can be formalized in two digits – 1 and 0, i.e. if energy impulse exists or not. In philosophy context this sounds as one of the development principles – a principle of unity and struggle of opposites. Namely the combination of these two digits can formalize and formalizes the huge amount of information that already exists and will increase in our nearest future. The era of so called Big data is coming.

Huge flows of information are processed and will be processed in more amounts by computers, mobile phones, different navigation systems operating in real time mode like GPS – Global Positioning System, etc. (*Next in turn is manufacture of quantum computers able to process almost all information available on the planet in real time mode – China, USA*).

In whole, the implementation of Big data digitalization concept is connected with so called 4V abbreviation – Volume (huge Volume), Velocity (high Velocity), Veracity (high Veracity), Variety (huge Variety).

The digitalization and related changes will influence on all aspects of our life – computer controlled vehicles, smart houses, flying drones, etc. Human activity, his employment, labor markets in most cases will be subjected to informational processing, will be mathematically formalized, and as result, coded or digitized with 0 and 1 combination.

Revealing the main trends of development and formalization of labor markets and human resources employment in Kazakhstan under digitalization and integration into the international and global labor markets, we would like to note that the strategy of Big data digitalization in terms of 4V is closely interconnected with IV industrial revolution.

After Davos Economic Forum 2016, and especially after report of its chair, the concept of IV industrial revolution is discussed and argued quite broadly and from different perspectives. Without revealing polemics around this concept, we would like to show below some statements that, in our opinion, will have strong effect on operation of labor market and employment, and in particular, on Kazakhstan labor market and employment.

First of all, the digitalization and closely connected with it accuracy and transparency of data will reflect on employment formalization. A lot of currently informally employed employees will be mostly

formalized in its digital content. And its movement from one employment form to another or another job will be tracked and added by the spatial-temporal and professional history of movement. For this purpose, there are already technical opportunities and means (mobile phone, personal computer, social and professional networks, etc.).

As noted above, human resources of Kazakhstan is not only Kazakhstan citizens, but foreign employees. And these employees, under digitalization conditions and developing IV industrial revolution will not only pass the national border, but will be able to work without its crossing, particularly in such form as outsourcing.

One of the typical examples of outsourcing (in the international business) is hiring of Indian highly qualified specialists by American hospitals to establish a diagnosis of a disease related to analysis of X-ray fluorography, cardiogram and other information transmitted via the Internet [5]. This form of employment allows increasing labor quality, decrease costs of production, use labor force from abroad, effective utilization of time in its global meaning. For instance, the above mentioned example shows that if a task to establish a diagnosis was given in the evening of American time, then it will be implemented in the morning by Indian time, and American patient will receive the analysis results (diagnosis) not in the evening of the next day if it would be done in America, but in the morning.

Of course, not all employment forms, especially those that use foreign labor force will be implemented in this form. Utilization of foreign labor force in its physical understanding will continue. However, its utilization under digitalization conditions will be more systematized, classified, subjected to transparency and, as result, to accuracy. One of the instruments for realization of this trend is registration of foreigners by their biometric data. It is necessary to note that registration of foreigners by their biometric data should be supported by well elaborated legal base. At the present time in Kazakhstan there is a Law “On personal data and its protection” issued on May 21, 2013, #94-V. According to this Law and Article 1 the biometric data term covers the following: biometric data – personal data characterizing physiological and biological features of personal data subject basing on which his personality can be identified.

Despite already available legal definition, its practical utilization (biometric data) in Kazakhstan is not widely distributed. In particular, it is not used neither while invitation of foreign workers, nor during the border crossing by labor migrants from neighboring countries.

Currently, the registration by biometric data is mainly applied by industrially developed countries.

It should be noted that digitalization of the country’s economics is closely connected with a human individualization. The more digitalization is developed, the more a human behavior, his skills and preferences, his physical potential and mental to some extent will be digitized [6]. In essence, on the base of digitalization, the implementation of global economic laws of distribution on labor, law of increasing efficiency of labor in its individual context will be more prominent and widely used.

Basing on individualization of a human, under digitalization conditions, the operation of labor markets will change completely. In many cases, the labor market will be professionally qualified and directed individually. The supply and demand for labor will be visible and accessible not only in general format, but from the position of every person basing on his professional interests. This will be implemented, and is already used to some extent.

Despite that the digital economy is introducing and will introduce major transformations into different employment forms and labor markets, according to the Nobel Prize winner Christopher Pissarides, the physical monotonic unqualified labor will be used for a long time more in the world. However, the so-called secondary labor market and, in our opinion, the informal employment will be more widely tracked using, for instance, social networks of via chronological analysis of funds movement, and in the case of informal labor migrants – by their international remittances.

Conclusion

Basing on the stated above, it can be concluded that the formation of digital economy in the field of labor markets operation and different employment forms will accompany the individualization of an employee. Individualization of an employee will pass along with determination of his physical and

intellectual inclinations and abilities. Large transformations will be in the field of statistics and human resource employment registration, first of all, these will relate not only to usual identification of an employee (name, surname, profession), but also biometric data will be recorded. New opportunities of biotechnologies, nanotechnologies, data processing systems will change completely the consciousness of a human and his attitude to labor.

In whole, in our opinion, the main strategic trends of development and formalization of labor market and human resources employment in Kazakhstan under digitalization and integration into the international and global labor markets and employment forms for the nearest future should be the following:

1 Adoption of biometric monitoring of migration processes and employment including the international labor migration.

2. Adoption of monitoring should be accompanied by adoption of health insurance, social insurance.

3. It is necessary to develop further the database on the national labor market available at the Ministry of Labor and Social Security of the Republic of Kazakhstan (in particular, integration with databases of the departments on human resources at enterprises, national companies, HR analytics, data science, etc.).

4. The processes of human resources employment formalization and labor migration should be implemented using wide involvement of mass media (including the nation-oriented social networks)

5. In future it is necessary to form the international integrated databases on labor migration (EAEU with Central Asia countries, etc.)

6. It is necessary to note that under IV industrial revolution, it is necessary to develop a “Concept of human resources employment in Kazakhstan” to highlight the national policy in the field of development and formalization of labor migration, employment processes, and operation of the national labor market. The Concept should not only list the mentioned above trends, but show different blocks on its implementation, such as legal, organizational, financial, social, etc.

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ЦИФРАНДЫРУ ШАРТТАРЫНДАҒЫ ҚАЗАҚСТАННЫҢ ЕҢБЕК НАРЫҒЫН ДАМУ ЖӘНЕ ФОРМАЛИЗАЦИЯЛАУ СТРАТЕГИЯСЫ

Аннотация. Мақаланың мақсаты Қазақстан экономикасын цифрландыру шарттарында еңбек нарығы мен жұмысбастылық сферасын дамытудың негізгі бағыттарын әзірлеу болып табылады.

Зерттеу барысында еңбек нарығын және адами ресурстарды зерттеуге түрлі әдістерді біріктірген жүйелік әдіс пайдаланылған.

Тарихи талдауға негізделі отырып, мақалада қазақстандық еңбек нарығын халықаралық нарықтарға ықпалдасуының ерекшеліктері талданған. Бұл талдаудың маңызды сәті келесіде жатыр: халықаралық еңбек көші-қонының қазіргі кездегі даму үрдістері Гравитация заңдарының әрекет ету призмасы арқылы ашылады. Цифрландыруды дамыту ерекшеліктеріне негізделі отырып, мақалада жұмысбастылықты тіркеудің жаңа

құралдарын қолдану, жеке алғанда, еңбек мигранттарын биометрикалық тіркеуді енгізу қажеттілігі түсіндіріледі.

Одан басқа, мақалада аутсорсинг пен жаһандық-индивидуумдық еңбек нарығының даму ерекшеліктеріне аса көңіл аударылған.

Автормен цифрландыру шарттарында еңбек нарығын дамыту және формализациялау бойынша стратегиялық бағыттар әзірленген. Еңбек көші-қоны бойынша халықаралық ықпалдасқан мәліметтер базасын қалыптастыру және Қазақстанның адами ресурстарының жұмысбастылығы тұжырымдамасын әзірлеу бойынша рекомендациялар ұсынылған.

Түйін сөздер: адами ресурстар, еңбек нарығы, еңбек ресурстарының көші-қоны, IV өнеркәсіптік революция, цифрландыру.

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СТРАТЕГИЯ РАЗВИТИЯ И ФОРМАЛИЗАЦИИ РЫНКА ТРУДА КАЗАХСТАНА В УСЛОВИЯХ ЦИФРОВИЗАЦИИ

Аннотация: Целью статьи является разработка основных направлений развития рынка труда и сферы занятости в условиях цифровизации экономики Казахстана.

В ходе исследования использованы различные методы, объединенные системным подходом к изучению рынка труда и занятости человеческих ресурсов.

Исходя из исторического анализа, в статье анализируются особенности интеграции казахстанского рынка труда в международные рынки. Важным моментом этого анализа является то, что имеющиеся тенденции развития международной трудовой миграции раскрываются через призму действия законов Гравитации. Основываясь на особенностях развития цифровизации, в работе обосновывается необходимость использования новых инструментов регистрации занятости, в частности, введение биометрической регистрации трудовых мигрантов. Кроме того, в статье уделено особое внимание развитию аутсорсинга и глобально-индивидуализированного рынка труда.

Автором разработаны стратегические направления развития и формализации рынка труда в Казахстане в условиях цифровизации. Предложены рекомендации по формированию международных интегрированных баз данных по трудовой миграции и разработке Концепции занятости человеческих ресурсов Казахстана.

Ключевые слова: человеческие ресурсы, рынок труда, миграция трудовых ресурсов, IV промышленная революция, цифровизация.

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