

ANNOTATION

**to the thesis research of Atabayeva Assiya Kairoshovna
on the topic: "Employment transformation in the conditions of digital
economy formation in Kazakhstan", presented for the doctor of philosophy
degree (PhD) under the educational program "8D04107001-Economics"**

Topicality of the research topic. The introduction of digital technologies is one of the main factors of structural changes in the labor market and the economy as a whole. The traditional employment form is being transformed into new types of employment forms, and digital competencies and skills are required from employees. The possible release of personnel is combined with the new jobs creation that will be in demand with the use of flexible employment regimes. Trends in the change in the professional structure of the workforce formed by the digitalization expansion, as well as approaches to improving the system of training for the digital economy are determined. At the same time, significant segments of self-employment and informal employment remain which does not always fit into the requirements of the social protection system.

Transformation processes in the world economy are manifested in a variety of employment forms which now include temporary, part-time, super-employment, informal employment, self-employment, remote employment each of which meets the employer's and employee's specific needs which may be desired and forced.

The labor relations between the employee and the employer are changing which were previously based on a contract between two entities signed for an indefinite period. In the modern labor market, there can be several parties to an employment contract; it can be signed for a specific project. The civil law form of labor relations is rapidly spreading.

In the labor market of Kazakhstan, many of the current trends have become widespread in the set of their advantages to increase the competitiveness of businesses and the associated social problems for employees and the self-employed.

In accordance with the Strategy «Kazakhstan-2050: a new political course of an established state» put forward by the first president N.A. Nazarbayev, the main guideline of the state policy should be the direction towards the «Society of General Labor» for which it is necessary to "modernize the employment policy". In addition, "actual employment should be provided by all programs implemented in the country." To solve the tasks set in Kazakhstan, active measures to promote employment within the framework of the Yenbek state program and the Business Roadmap - 2025 program which are aimed at providing assistance in finding employment and developing productive self-employment, have been in place since 2008.

The Conception of joining the 30 developed countries of the world emphasizes that "as the employment part of a category of citizens in need of

special working conditions, special mechanisms will be developed to promote employment ..., including through the development of flexible employment forms." Among the unconditional prerequisites for a country's competitiveness are such factors as digital literacy and professional skills. The reserve of economic growth is the self-employed and the unemployed, so it is essential to provide an opportunity to involve people in productive employment.

Kassym-Zhomart Tokayev, the head of the state, in his Address "Kazakhstan in a new reality: time for action" to Kazakhstan people emphasized that digitalization is seen as "a key tool for achieving national competitiveness", therefore it is necessary to "reorient the entire system of vocational education towards the formation of competencies that are in demand in the labor market". In the President's Address "The people's unity and systemic reforms –is a solid foundation for the country's prosperity" dated September 1, 2021, Kassym-Jomart Tokayev stated that "the pandemic has led to a significant transformation of the labor market", pointed to the development of a remote work format and the emergence of new employment forms based on internet platforms. This area needs the state assistance in terms of social and legal protection.

Thus, in the rapidly changing world of work, the issue of building up professional and digital skills for employees, setting them up for active retraining in order to acquire a new profession, becomes a necessary condition for maintaining employment. This raises the profile of educational institutions and active employment promotion programs. At the same time, all labor market participants need a system to reduce, neutralize or compensate for objective risks that the digital transformation of the economy does not mitigate but rather exacerbates.

In connection with the above, the study of the employment transformation in the Kazakhstan's economy in the context of accelerating digitalization is relevant and the institutions of education and social protection need to develop measures to mitigate social risks for labor market participants.

Degree of problem development. The dissertation work deals with a problem that is actively discussed in the post-industrial economy, the foundation for the emergence of which was laid by the information and communication sector technologies. The complication of the demand structure for labor according to the employment forms, the reduction in the periods of updating vocational skills intensifies the processes of society stratification according to the income from employment.

Non-standard employment forms have become a modern feature of labor markets around the world and are reflected in the scientific works of many scientists. One of the first authors to study "non-standard employment" in the post-industrial economy became A. Kalleberg, B. Miller, R.D. Atkinson, J. Rifkin, M. Piore, C. Sabel and others.

In modern studies such authors as U. Huvs, M. Arntz, T. Gregory, U. Zierahn, Ts.B. Frey, M.A. Osborne, M. Ford, D. Acemoglu, P. Restrepo, V.V. Pulkka, H. Aly and others confirm the impact of globalization factors, innovation activity and

economy digitalization on the scale of non-standard employment.

Strengthening the labor market flexibility, the modernization of labor relations and the consequences of these phenomena are reflected in the scientific publications of the post-Soviet space researchers: V. Gimpelson, R.I. Kapelyushnikov, L.V. Lapidus, V.N. Bobkov, O.V. Veredyuk, I.A. Rodionova, N.T. Vishnevskaya, A. Zudina, G. Monusova, B.A. Musaev, V.V. Patsiorkovsky, I.V. Novikova, N. Loktyukhina, E. Chernykh, A.V. Popov, E.V. Maslova, A.V. Kuchenkova, N.N. Kotova and others. The works of such scientists as E. Sadovaya, A.V. Kashepov, S.P. Zemtsov, G.S. Sologubova, N.A. Nikolenko, B.Zh. Tagarov, A.A. Kogan, V.M. Svistunov, E.M. Offman, S.V. Mamontova, A.A. Fedchenko, N.V. Dorohova, E.S. Dashkova, M.S. Sagandykov, I.Yu. Yeryomina and others.

In Kazakhstan, problems in the field of population employment, studies of factors contributing to the development of non-standard employment were studied by S.Kh. Bereshev, T.P. Pritvorova, B.L. Tatibekov, S.A. Kaliyeva, M.K. Meldakhanova, R.K. Sabirova, S.N. Suyeubayeva, G.B. Pestunova, S. Dzhumambayev, D.D. Ermekbayeva, L.A. Tusupova, R.T. Dulambayeva, I.V. Onyusheva and others.

The issues of legal protection of employment, labor market flexibility, adoption of inclusive labor market programs and active employment measures are discussed in the works of such domestic scientists as A.P. Zhakeshova, G.P. Koptayeva, S.S. Tleuberdiyeva, Sh.N. Agabekova, T.S. Sokira, A.K. Dzhusibaliyeva, G.Zh. Doskeyeva, A.B. Berdibekov and others.

The goal of the dissertation work was to study structural shifts in the employment of the Kazakhstan population in order to develop a system of measures to promote employment and reduce its social risks in the context of the digital economy formation.

To achieve the goal, the following **tasks** were set and solved:

- classical employment theories and modern factors of the digital economy influence on the employment forms of the population are systematized;
- the features of labor market regulation in the context of the employment transformation in the developed world countries are revealed;
- an analysis of the dynamics and population employment structure in Kazakhstan was conducted;
- a statistical assessment of non-standard employment as a factor in the average per capita income of the population was determined;
- statistically significant factors for increasing the scale of non-standard employment and this phenomenon consequences have been identified;
- proposals for labor market institutions of Kazakhstan were developed;
- an analysis of the professions' modification under the digital technologies influence was conducted;
- proposals were made to involve a socially vulnerable group of the population in employment using the advantages of digital technologies.

The object of the study is Kazakhstan population.

The subject of the study is a set of theoretical provisions, empirical trends, methodological and practical recommendations to promote the population employment and to reduce its social risks in the context of the economy digitalization.

The theoretical and methodological significance of the study is determined by the possibility of using its individual results for further development of the population employment theory in the digital economy. The synthesis of institutional and systemic approaches allowed the author to develop a neoclassical classification of employment forms based on the contracts theory and the theory of property rights specification.

The results of the study are aimed at developing the conceptual framework of the Labor Code of Kazakhstan, the methodological foundations for the functioning of the institution of social insurance and evaluating the results of active employment promotion programs. The PhD student made proposals to the methodology for identifying the self-employed population.

The study used statistical methods for analyzing dynamics and structure, correlation and regression analysis, and structural modeling using the SmartPLS software package.

The empirical base of the study was the results of official statistical data of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan; materials of the official websites of the Ministry of Labor and Social Protection of the Republic of Kazakhstan, the European Foundation for the Improvement of Living and Working Conditions (Eurofound), the International Labor Organization (ILO), the Organization for Economic Cooperation and Development (OECD).

The thesis used data from an online sociological survey of the population of various employment forms and a telephone survey of a socially vulnerable group of the population, namely parents raising children with developmental disabilities, in the context of the desired employment problem.

The scientific novelty of the dissertation research results is determined by the developed theoretical and practical provisions in the field of population employment transformation in the digital economy formation in the Republic of Kazakhstan.

Scientific novelty is presented in the following provisions:

– The classification of employment forms in the conditions of the post-industrial economy has been clarified according to the criteria for the working hours flexibility, the nature of the applied contract, and the method of organizing labor.

– A conceptual scheme has been developed for studying transformational changes in the population employment the under the influence of the processes of economy digitalization.

– Structural shifts in employment by enlarged groups of occupations and types of contracts are revealed which are signs of a post-industrial economy formation;

- Statistically significant factors of non-standard employment influence on incomes and social risks of the population are determined;
- Methodological recommendations have been developed for labor market institutions and the institution of education to reduce the social risks of the population in the process of adapting to the digital economy.

The main scientific provisions submitted for defense:

- Results of correlation-regression and structural modeling which assess the non-standard employment impact on incomes and social risks of employment.
- Proposals for regulatory and methodological support of the functioning of labor market institutions taking into account the employment transformation in the digital economy contributing to the support of the most vulnerable categories of the population and reducing tension in the labor market;
- A map of factors that determine the labor market future characterizing their objective content and intersection nodes which can be in demand when developing standards for new professions in the digital economy;
- Fundamentals of the professional standard for the specialty "Big Data Analyst (industrial)" which demonstrates the transformation of the labor functions of the category of "specialists" in the system of competencies that is relevant for the digital economy.
- Mechanisms for involvement in employment of a socially vulnerable category of the population (parents with disabled children) taking into account the digital technologies possibilities that modify the Employment Centers activities contributing to the effective employment of the target group.

The practical significance of the recommendations received is that the results of the analysis and assessment of employment trends can be taken into account when developing the current strategic plan of the Ministry of Labor and Social Protection of the Population because they provide an independent assessment of processes in the employment field.

Developments in the field of technical, technological and social prerequisites for determining labor tasks and functions of new professions, required skills and competencies can be demanded by the Ministry of Education and Science of the Republic of Kazakhstan to draw up professional standards for the digital economy.

The proposed recommendations to the legal and methodological framework for regulating employment make it possible to increase the effectiveness of ongoing measures to promote employment including in the Employment Centers in relation to socially vulnerable groups.

In addition, the study results can be used in lecture courses at universities in such academic disciplines as "Economics of the labor market", "Econometrics", "State regulation of the economy", "Income and wages policy", etc.

Testing and implementation of research results. The main provisions of the dissertation research were tested in the open press, were reported at international and republican scientific and practical conferences. The content of the dissertation work is reflected in 8 scientific papers including 1 article in the journal included in

the Scopus database (journal "Economic Annals-XXI", the percentile in subject branch "General Economy, Econometrics and Finance" at the time of publication is 69, at the time of the defense - 63); 3 articles –in publications recommended by COXON MES RK; 4 articles –in the materials of international conferences (2 – including Kazakhstani, 2 – foreign). The separate proposals of the dissertation research are part of the research topic, conducted under the grant of the Committee of Science and the Ministry of Education and Science of the Republic of Kazakhstan which is confirmed by the certificate of scientific research results implementation: "The support system for households with disabled children: conceptual framework, effective practices, development mechanisms in Kazakhstan" (registration number: AP08856616; implementation period: 2020-2022).

The developed map of factors and the basis of the professional standard for the specialty "Big Data Analyst (industrial)" were used in the development of educational programs "6B05403 - Mathematical Economics, Statistics and Data Analysis" and "6B06102 - IT Entrepreneurship and Digital Economy" of the Department of Economics and International Business Karaganda University named after E.A. Buketov.

The structure and scope of the dissertation. The dissertation work consists of normative references, designations and abbreviations, introduction, three sections, conclusion, list of references, eight appendices on sixteen pages. The content of the work is presented on 158 pages using 251 sources, 41 tables and 47 figures.

In the first chapter "Theoretical Foundations of Employment in the Conditions of the Digital Economy Formation", the author reveals the conceptual foundations of the study of population employment, current trends in economy digitalization impact on employment, labor market regulation features in the conditions of employment transformation.

Economic theories of the 18th-20th centuries consider labor resources as a factor in economic growth including the theory of human capital which considered it as a factor in the country competitiveness and each subject in the labor market. Only in the last decades of the 20th century, employment studies began to consider its specific forms and economic relations associated with them. This happened due to statistically noticeable processes of deviation of the mass of labor contracts from their standard form which became dominant during the world economy industrialization. The post-industrial economy based on automation, robotization and the computer technologies introduction into all elements of any business process, has dramatically expanded the diversification of employment forms.

We have refined the classification of employment forms in the conditions of the post-industrial economy according to the criteria for the working hours flexibility, the nature of the contract use and the method of organizing labor.

In the classification of non-standard employment forms, we introduced the criterion "multi-subjectivity of the participants in the labor contract", reflecting the originality of the sign "nature of the contract" in the conditions of the post-

industrial economy. In our opinion, the participation of several entities in the specification of the ownership of labor force is a characteristic feature of many modern contracts (outsourcing, leasing, outstaffing, crowdsourcing, freelancing) including the brokering of digital platforms.

Taking into account the world economic science, we have developed a methodological scheme for dissertation research according to which the employment transformation in the context of the economy digitalization is implemented in two processes:

- 1) Flexible labor contracts and labor attraction forms.
- 2) Changing the jobs structure (disappearing, changing, new ones with the inclusion of ICT competencies and skills).

In the second chapter "Analysis and evaluation of population employment in Kazakhstan" for a comprehensive study of the employment transformation, three types of analysis were applied: comparative statistical analysis of indicators, multiple correlation and regression analysis, structural analysis of data based on the Smart PLS program.

1) The dominant structural trend in employment over the period 2001-2020 is the growing share of employment in the service sector. In terms of growth in the number of employees in the service sector for 2010-2020, the leader is "Professional, scientific and technical activities" – 70.6%. As part of this activity type, information and computer, scientific and scientific and technical services are taken into account, which are the basis of the post-industrial economy and its digital base. The increase in the proportion of people employed in the service sector creates the prerequisites for the spread of non-standard employment practices, since in this area, the characteristics of demand more than in any other which require non-standard schedules and supply regimes, and, consequently, employment forms.

Flexible labor contracts and employment forms are characterized by the following parameters:

- Every fourteenth employee has a part-time work week and every fourth employee has deviations from the standard length of the working week up or down. The most significant growth rate for the period 2001-2020 is observed in accommodation and catering services (562.25%), financial and insurance activities (229.2%), professional and business services (198.5%). A fairly stable group of leaders in the use of part-time contracts has emerged. These are the northeast and the center regions: North Kazakhstan, Kostanay, East Kazakhstan, Karaganda regions. This practice is also almost widespread in the capitals. The southern and western regions such as Almaty, Kyzylorda, Zhambyl, Atyrau are less inclined to use part-time employment:

- Temporary employment is characterized by insignificant scale (6.2% in 2020), but since 2017 there has been an average annual growth trend of 0.8%. The practice of law enforcement of part-time contracts and GPC characterizes the phenomenon of outsourcing or outstaffing which so far has a small scale but a steady upward trend.

- Self-employment in Kazakhstan decreased in absolute and relative terms and its share in employment decreased from 35.5% in 2006 to 23.4% in 2020.

- Informal employment in formal sector enterprises almost halved from 15.5% in 2006 to 7.9% in 2020 and in informal sector enterprises from 9.5% to 6.1% respectively. The leaders of informal employment are agriculture, trade and construction and these positions in the ranking have been maintained since 2006.

Since the indicators of jobs digitalization by activity type in Kazakhstan statistics are currently not tracked, so we have estimated indirect indicators.

The transformation of demand for labor in the Kazakhstan labor market for the period from 2001 to 2020 was expressed in positive structural shifts in the position of professional specialists by 14.2%: from 19.3% to 33.5%. Currently, one third of the employed are professionals. The share of professional specialists is growing not only in the education, healthcare and public administration field but also in financial, professional, scientific and technical activities. The largest average annual increase in vacancies in the Professional Specialists group is observed in education (6.1%), professional and business services (4.5%) for the period from 2013 to 2020.

There are changes in the structure of the number of employees by enlarged groups of occupations (specialists-professionals) and the structure of vacancies (operators of production equipment). Demand for knowledge-intensive and high-tech professions begins to appear.

2) The regression model included 12 factors supposedly affecting the average per capita population income for the period 2005-2020: social, demographic, economic, indicators of standard and non-standard employment.

Based on the regression analysis results, the following conclusions were made:

- the constructed model of multiple regression satisfies all quality criteria. The significance level of the regressors is less than 0.05 (P-value) which characterizes the significance and reliability of the regression coefficients included in the model. The multiple coefficient of determination equal to 0.99 indicates that 99% of the model is explained by the factors included in it;

- the absence of multicollinearity, autocorrelation and heteroscedasticity confirms the adequacy and reliability of the constructed model;

- in increasing the level of average per capita income and, as a result, the life of the population, the basic role is played by employment indicators which is confirmed by the calculated elasticity coefficient ($E_{x7}=1.57$) and the high regression coefficient ($b_7 = 6.62$);

- informal employment has an inverse relationship with the population income, i.e. the decline in informal employment leads to an income increase. At the same time, according to official statistics the scale of part-time and fixed-term employment is not large enough to manifest itself at the macro level as a significant factor influencing average per capita incomes. As far as self-employment is concerned, in reality it largely overlaps with informal employment. The correlation coefficient for self-employment with the level of average per capita

income is 0.1 less than for informal employment but due to the procedure for checking for collinearity, informal employment was chosen because the linkage coefficient for self-employment is lower. The negative correlation between indicators of informal employment and population incomes confirms the vulnerability and precariousness of the workers' labor relations;

- the main source of improving the living standards of the population is wages. As the level of labor income of the population grows in the republic, a steady increase in the average per capita population income is observed as one of the most significant factors in improving the level and life quality of the country's population.

The analysis results show that the use of non-standard employment types in Kazakhstan at this stage leads to some negative consequences, mainly reduces the population income. Among the directions for regulating these trends, the authors propose in state policy to focus on supporting workers to come out of the shadows into official employment.

3) The PLS-PM structural model built on the sociological survey results, made it possible to identify two problems of precarious work in Kazakhstan: weak social protection for precarious workers (for example, contributions from several employers are not taken into account in the health insurance system) and limitations in building the human capital of employees.

Eight hypotheses have been put forward that hypothetically have a connection between non-standard employment and such factors as human capital, education, digitalization, social protection, social inequality and incomes of the population.

Education, income and human capital are personal characteristics. Therefore, the obtained high coefficient of the education impact (0.639) on non-standard employment can be interpreted as a significant factor for people who are looking for a job, additional employment since in the new conditions of the labor market, high qualification requirements are imposed on most employees. Personally faced with such a problem, people realize the importance of education as a key factor in employment.

The impact of non-standard employment on income also has a high correlation (0.705). In many cases, precarious work is an additional source of income or an alternative to being unemployed.

Examining the influence of external factors (digitalization, social protection, social inequality), we can conclude that digitalization (hypothesis H7) has a fairly strong impact on precarious employment (0.322). Perhaps this is the result of people's personal perception of the current situation with the COVID pandemic as well as the rapid development of information technology which makes it possible to work online and remotely.

The resulting positive correlation between non-standard employment and social inequality (hypothesis H3) raises serious concerns since the growth of flexible employment, according to the respondents, leads to an increase in poverty and inequality, and, consequently, an increase in social tension in the country.

The value of the coefficient of determination R-square for the dependent

variable "Precarious employment" has a high value of 0.8 which indicates that the factors included in the model (digitalization, human capital, education, social protection) describe it well and have a high degree of influence on this variable.

The R-square for the dependent variable "Social Inequality" has a fairly good value of 0.65. This indicates that 65% of the model of social inequality is explained by the factors of non-standard employment, social protection and population income included in it.

The coefficient of variable determination "Income of the population" is 0.5 that is 50% of the model is described by the regressor of precarious employment.

In general, as shown by the analysis, all obtained model estimates are reliable and adequate. Therefore, the results obtained can be used for further research and development of recommendations for the institutional system for regulating the population employment.

The third chapter contains proposals and recommendations for improving the institutions of the population employment and the mechanisms included in them.

Our proposed mechanisms and recommendations are grouped into four areas:

1. Improving the legal regulation of employment in the digital economy. We propose to introduce the following definitions into the Law "On Employment of the Population": flexible employment, joint work, digital labor platform, provider of digital labor platform services.

The main direction of regulation of digital labor platforms should be, first of all, the social protection of employees. To achieve this goal, it is necessary to establish control over labor platforms through the platform employees' data exchange with regulatory authorities. Such data can be information about the number of hours worked, the salary received by the service provider, that is, information that will help, for example, the Tax authorities determine the amount of pension and social benefits.

For the practical implementation of this approach, appropriate legal regulation is needed which will allow the relevant state bodies to take into account the technological features and architecture of labor platforms as well as use and analyze the information provided on the activities of labor platforms.

To accomplish this task, platforms must share their policy and performance data with regulators and regulators must create conditions for effective interaction with platforms.

Regulators, in turn, should provide platforms with freedom of maneuver, on the condition of complying with mutually agreed thresholds (criteria). In this regard, regulators and platform owners need to jointly develop a set of criteria that allow data to be analyzed without compromising the labor platforms competitiveness.

We also propose a clarification to the current definition of the concept of "workplace" fixed in paragraph 14 of Article 1 of Chapter 1 of the Law of the Republic of Kazakhstan "On Employment of the Population" as well as paragraph 45 of Article 1 of Chapter 1 of the Labor Code of the Republic of Kazakhstan:

labor contract can be considered as an analogue of a worker place for some types of employment

2. Changes to the algorithm for calculating social benefits in case of job loss for employees of pre-retirement age and with less than 1 year of service. Model calculations have been made with an increase in the service length and replacement rates for employees of pre-retirement age which, in our opinion, will help ensure social justice for these employees. Offers for employees with less than a year of service are designed to protect fixed-term employees.

In particular, taking into account the experience of foreign countries, we propose to make changes to the calculation of insurance payments for job loss in Kazakhstan:

- to increase the replacement rate to 0.5 (in the second part of paragraph 2 of Article 22 of Chapter 3 of the Law of the Republic of Kazakhstan "On Compulsory Social Insurance");

- to introduce an additional multiplier to support the older generation of people who are at pre-retirement age (for example, 1-3 years before retirement). The proposed innovations will ensure an increase in the level of insurance payments by 11% per month and will strengthen the protection of people of pre-retirement age;

- to increase the participation coefficient to 0.6 for those who have less than six months of experience (taking into account the fact that the unemployed will receive this payment only once).

In our opinion, this will be a fair decision in favor of precarious employees, since in most cases, this category of employees has short-term employment contracts. The increase in the coefficient for short-term employees is a protection for those who will be employed on fixed-term contracts and GPC contracts because in this matter they are not sufficiently protected. That is, if the contract is signed for 4 months or for the amount of work for 3 months then this is a measure of social protection for contracts with short terms.

3. Proposals for the methodology for identifying the self-employed which, in our opinion, contribute to an adequate accounting of the number of self-employed and the ratio of productive and unproductive self-employed.

In paragraph 18 of Chapter 2 "Methods for determining the number of self-employed, the level of their average monthly income and the number of unemployed population" dated January 19, 2016 No. 11, make the following amendments:

- employed on an individual basis (inactive from among registered and unregistered) for more than 1 year, looking for work and ready to start it, to be counted as unemployed;

- include unpaid employees of family enterprises in the group of unproductively self-employed, if the income of such family enterprises is below the MSL (the minimum subsistence level), otherwise, recognize them as productively self-employed.

In addition, we propose to introduce unemployment benefits (funded by the

budget) but provided once every five years and limited in terms of payment period to 3 months. It will give financial protection to those who want to get out of informal employment or self-employment in order to provide for their basic needs while looking for a job. Such material support will motivate people to register and then it is advisable to involve them in participating in projects of the employment program.

4. Improving measures to promote population employment including project management of the employment program and management in the Employment Centers. Proposals are given for the introduction of the Center's employees 'specialization for a specific category of citizens which is necessary for the implementation of an individual approach to applicants with social problems. A system of indicators for evaluating the process and results in the projects of the employment promotion program is proposed.

It is advisable to evaluate the project by the proportion of employed people from the number of participants sent to the project. Since this indicator shows the project effectiveness as a whole and you can see the relationship with the actual initial number of project participants and identify project management problems that determine such a significant dropout.

It should be noted that the effectiveness of the program should be determined not only by the number of participants employed after leaving the project. It is necessary to monitor the status of the project participant in the labor market in a year – one and a half after the project completion. This will allow obtaining two important indicators: the level of social effect and a qualitative assessment – the result sustainability.

In our opinion, it is necessary to introduce an individual approach to the applicant in the Employment Center which means:

- to assign him/her to one of three groups on the profiling procedure: no problem; employment problems; employment problems and social problems (for example, parents with children with disabilities, employees with disabilities and others are included in this group);

- to fix the division of labor between managers in the Employment Centers for the best correspondence of their actions to each of the categories. The manager's specialization in a particular group will allow him to take into account the characteristics of this group and in the best way choose its trajectory in the employment service;

- to propose a set of measures corresponding to each of the categories but taking into account the peculiarities of its position in the labor market including the distance from the labor market.

The change in the structure of demand for professions in industries is influenced by a large number of factors. Five factors have been identified – driving forces operating in all economy sectors and determining a critical mass of changes:

- automation and Smart-machines introduction;
- the scope of digitalization and big data expansion;
- increasing of the requirements of society for the environmental friendliness

of technologies, goods and services;

- changing of the requirements of young specialists to working life;
- changing of the population's consumer preferences.

Innovation and digitalization are the main drivers for the development of all the economy and human life spheres. The transience of these processes dictates the need to adapt them to current and future realities. Almost all industries are subject to changes under the influence of ongoing technological implementations. Automation affects the performance indicators, efficiency and quality of work and services.

Strategic directions for the transformation of professions to ensure employment in the digital economy are presented on the system map of the future labor market. The map represents significant vectors, their characteristics and nodes of intersection with each other, which determine the scheme for transforming the space of professional standards under the influence of the digitalization of the economy and society. Taking into account the developed methodological schemes, the basics of the professional standard for the new specialty "Big Data Analyst (industrial)" are presented, including the goal, tasks, work functions, knowledge and skills.

We have developed models to promote the employment of a parent in families with disabilities which, for the most part, prefer non-standard employment. The factor limiting the opportunities of parents with disabled children in the external environment according to the verified hypotheses in the PLS-PM model is the lack of an individual approach and adequate offers from the Employment Center.

For this, in our opinion, it is necessary for the Employment Centers to take an active position in the issue of employment of target groups by introducing a profiling technique, fixing the specialization of an employee (if necessary, 2-3 employees in the centers of large cities) in groups with social problems for targeted individual work with every case.

Three options are possible:

- 1) employment in the private sector at a social workplace (part-time, but fully subsidized);
- 2) involvement of the non-profit sector as an employment agent with subsidized services for each job seeker;
- 3) employment with a social entrepreneur, who can become such if he hires several (at least 4 people) citizens from the target groups.

In all cases, the digitalization of business processes will help ensure flexible teleworking.

Dissertation candidate



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