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The impact of industrial poverty deprivation risks to the quality of human capital in Kazakhstan

Abstract

Object: The main purpose of this work is to consider the deprivation risks that can lead to industrial (structural) poverty in the realities of industrial employment in Karaganda region of the Republic of Kazakhstan.

Methods: The method of bibliometric analysis in VOSviewer. Methodological approaches for defining the concepts of deprivation and poverty were considered: both of them were reviewed from the perspective of the monetary approach and from the perspective of the multidimensional poverty method.

Findings: Comparison between indicators of monetary approach and multidimensional poverty index in terms of definitions of deprivation, revealed the inefficiency of the monetary approach in deprivational reflection. The results of the multidimensional labor poverty index of the Karaganda region do not correspond to its high indicators of income and HDI. The causes of these deprivations were identified, the risks associated with them were reflected, and there are some given recommendations to smooth out their negative effects.

Conclusions: The problem of multidimensional poverty exists in the region and undermines quality of human capital across a wide range of deprivations of its inhabitants. Risks and problems of this phenomenon are related to the actualization of workers' skills, the problem of which is strongly interrelated with vocational education problems.

Keywords: human capital, deprivation, industrial poverty, multidimensional poverty, the manufacturing sector, education, industrial training, sustainable development.

Introduction

Human capital and the quality of its development are directly interrelated with the quality and effectiveness of the country's economic indicators. Despite the weak (albeit positive) correlation indicators of the ratings of the Human Capital Index of the World Bank and the Human Development Index, reflecting the quality of human capital development with the ratings of the Top 100 Richest Countries In The World and World Competitiveness Ranking by IMD, directly reflecting the qualitative indicators of economic development in terms of wealth per capita and competitiveness of developed economies of the world. Many countries occupy almost identical places in these rankings, and according to them, the Pearson correlation coefficient reaches a result of 1 (or at least from 0.7 to 0.9 or more values). Such examples include the states of Northern Europe, Switzerland, Singapore, the Benelux countries, and the Republic of Korea. Of course, those indicators of technological efficiency, competitiveness and capitalization of the economies of these countries were achieved due to intensive economic growth, which could not but be provided with high-quality higher and vocational education and an appropriate decent wage level and/or related social programs, since there are other success criteria for alternative extensive economic growth, in the form of a huge amount of human or natural resources in these countries was not observed (Human Capital Index by World Bank Group for 2023 year).

Human capital as a factor of economic growth and development is presented both in terms of purely economic efficiency and in terms of social efficiency. In a state with an inefficient and uncompetitive economy, the emergence of a wealthy and strong "middle class" is impossible. However, the emergence of such an economy is not possible without the support of targeted financing of social institutions aimed at the development of the human personality and its professional skills, which in the modern "knowledge economy"

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is thereby a "generator of innovation" and subsequent economic competitiveness for the country and its citizens (Becker, 1962).

For this reason, the "Comprador approach" to the socio-economic provision of economically active and employed people in the priority sectors of the country's economy can be effective only if certain production programs are implemented abroad. A similar approach used by enterprises in domestic realities only worsens life within the state and thereby undermines the consumer potential within the national economy. A particularly striking example of such a conniving approach to ensuring socio-economic guarantees for workers within the national economy is the phenomenon of working poverty or high rates of deprivation of the working population, both at enterprises with foreign owners and at domestic ones.

Working poverty is a real problem in many developing economies, undermining the growth potential of their human capital and the quality of life of the population. This situation is typical for countries in completely different regions of the world: both for Latin America and the Caribbean, as well as for the countries of Southeast and South Asia, many countries in Africa, individual States of Eastern Europe and the Balkan Peninsula. Numerous post-Soviet countries have not escaped from this problem, in particular, it manifests itself significantly in the CIS countries (Benhabib, Spiegel, 1994).

Literature Review

The problems of poverty and the formation of human capital in economic research are usually always closely interrelated. Analyzing the works of scientists presented in the Scopus scientometric database on the socio-economic topics under consideration and the keywords of this work, a bibliometric map of the relationship between the keywords of this work was compiled, confirming that the issues of human capital, poverty, education and development are often presented in these works in close relationship with each other and are the causes or consequences of one or another phenomena (Fig. 1):

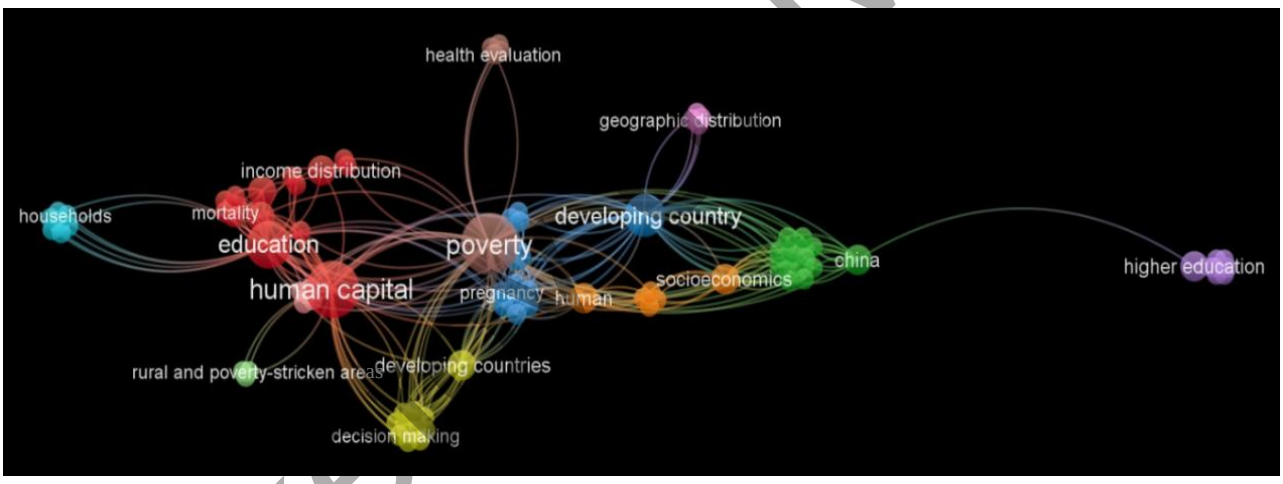

Figure 1. Bibliometric relationships of the terms under consideration presented in the work

Note — this map is compiled by the author and based on the keyword searching results of the work in VOSviewer program by using Scopus data of different thematic works

Figure 1 shows us how all bibliographic relations are close and well coonected with each other, for example: shows us negative meaning of skill gaps from professional education in real manufacturing conditions (Chekol, 2024); role of education for growth/fall of industrial workers status (Yusriana et al., 2021); meaning of technologies and their impact for human capital development (Colombo, 1989); development of these processes within social aspect in nowadays developing countries (Chossudovsky, 1979); it demonstrates the meaning of human capital for industrial technological firm performance (Mottaleb, Tetsushi, 2012). And all these meanings work in the context of one theoretical area connections of human capital and welfare.

The Republic of Kazakhstan (one of these countries) is a state with a relatively developed extractive industry, trade and services sector. The majority of the population of Kazakhstan works in agriculture, trade, education and industry. It would seem that the last two industries should be well and qualitatively paid, since they definitely require highly qualified labor resources and the quality of work (or the production of goods with high added value). However, it is not always possible for both public and private employers to ensure a decent level of remuneration in these areas.

The reason for this is not only the general weakness of the production base of the country's economy and the low competitiveness of Kazakhstani products in foreign markets (leading to low national incomes), but also significant omissions in assessing the level of real poverty of the population, as well as problems in the distribution of remuneration for work in the form of wages and other factor incomes there.

This article describes the managerial and evaluative context (on the part of government agencies) of the problem of determining the level of working poverty in Kazakhstan and its negative impact on human capital growth as a consequence of underestimating the realistic level of this indicator.

As a part of the object for analysis of the study, indicators of poverty and employment of the population were considered on the example of one region of Central Kazakhstan — the Karaganda region, since the employment structure of the population of this region is dominated by industries and trade, which are not characterized by poverty, traditional for the agricultural sector in developing economies (Hasan Khan, 2001).

The choice of the region as an object of research for considering the problems of working poverty is also noteworthy in the aspect that the Karaganda region is the second largest net exporter in the economy of Kazakhstan (after Atyrau region), which brings a very significant share of national income.

For example, in 2021, the region's foreign trade turnover amounted to 8.4 billion US dollars. Division of the export share accounted for 73.8%, and the import share for 26.2%. In other words, the region generates revenue in the amount of 6.2 billion US dollars, while the already insignificant imports of goods and services are carried out through trade with nearby neighbors who supply relatively cheap and/or duty-free products (more than 62% of imports come from Russia, which is Kazakhstani partner in general economic integration with a single customs space).

Karaganda region is also located among the top 3 regions of Kazakhstan in the production of manufacturing goods with high added value for about 119 types of products, which include: (stranded wires, cables, ropes, braided cords made of ferrous metals; unalloyed steel in ingots, semi-finished products made of carbon steel (unalloyed); pig iron, rolled products flat made of non-alloy cold-rolled steel, etc.). Moreover, economic growth in comparison with the indicators of 2020 and it was provided precisely by growth in the manufacturing sectors of industry, with a drop in the level of sales of raw materials due to the coronavirus pandemic, which were the traditional and prevailing gray area of income in the region (QazIndustry Press, 2023).

If we consider the share of agriculture in the employment structure of the region, it is a minuscule share, only 4% of its GRP. While industry, education, infrastructure and construction together account for about 53% of the region's economy (27.6% for industry, 12% for education, 6.2% for construction, 7.2% for infrastructure), the relative weight of trade does not exceed 15% in the region, and it is really far from the highest indicator in the country (Bureau of National statistics of the Agency for Strategic planning and reforms of the Republic of Kazakhstan, 2023).

In other words, the following provisions can be clearly observed based on the data under consideration:

- Karaganda region is not subsidized, but on the contrary is a region that brings significant export income (from outside);

- In terms of the number of tax revenues for 2023 paid to the local (regional) budget, Karaganda region has firmly established itself in 7th place out of all 19 regional subjects of Kazakhstan, not only being a significant donor, but also not being included in the list of outsiders. The region exists on the self-sufficiency of its budget;

- The employment structure of the region's population is concentrated in industries that require high-quality professional qualifications of the working population: both in terms of the level of knowledge and in terms of performance at the same time;

- The region is engaged not only in the extraction of resources and their primary processing within the coal and metallurgical industries, but also produces products with high added value, which are in demand both in foreign and domestic markets;

- The agricultural sector is minimally represented in the region and exists, in fact, to maintain the food security of the region itself. Therefore, it will be extremely incorrect to consider the cause of poverty due to the traditions of remuneration in the agricultural industry in a regional format.

Summing up the introductory part, we can observe that the region does not have any traditional grounds for the growth of working poverty associated with a low level of regional incomes within the economic system or a low level of profitability inherent in individual industries. The more interesting it becomes to find the causes of the steadily increasing level of working poverty in the structure of the employed population of the region under consideration.

Methods

As the methodological basis of the presented article, the method of systematic review of literary sources (on the subject of the article) and their content analysis were used and aimed at comprehension and reflection, which are affecting the analysis of their concepts and results.

In this systematic review authors identified researching publications and statistical data sources (UN and UNDP reports on multidimensional poverty, reports of the Bureau of National Statistics of the Republic of Kazakhstan on the structure of incomes and expenditures of the population of the Republic of Kazakhstan), which clearly illustrate situation with the risks of industrial (structural) poverty in economy of Karaganda region, as well as a similar problem and ways to overcome it in the context of global and national realities, in order to provide a generalized overview of the relevant problems on this issue and propose a corresponding range of potential solutions for them within the framework of the economic specifics of the region under consideration. Full methodology of this research can be extensively described within next three statements:

2.1. Description of the methods. A systematic literary review is strikingly different from the traditional one in that it is planned solely for the consideration of sources devoted to the relevant research topic and is intended for scientific self-reproduction of other complementary scientific publications, which standard literature reviews are not predisposed to. The main stages of the research used by the authors consisted of the following "triad", which includes: preparation of materials for the analysis of the study, the analysis of these materials itself, as well as identification of results and potential ways to overcome the identified problems. These stages of the "triad", accurately reflected the sequence of actions when writing the scientific work in question.

2.2. Inclusion criteria. To implement the first stage, a set of keywords and search criteria for scientific research was developed. These keywords included the risks of working industrial poverty, which is structural in nature, aspects of human capital development in highly urbanized territories, problems of social and educational policy, problems of permissive human resource management, in terms of both labor legislation and labor regulation, risks for the Karaganda region in the context of multidimensional poverty indicator and their impact on quality of life the population, which was the main analytical purpose of the study.

Karaganda region was chosen to illustrate the paradox of poverty, in which, with relatively high monetary indicators of per capita income compared to other regions (in the realities of the Republic of Kazakhstan), there is also social dissatisfaction with the standard of living, as well as risks and potentials for impoverishment of individual labor groups among industrial (manufacturing) workers of urban monopolies.

2.3. Literature search. From the December 2023 to February 2024, the authors searched, reviewed and analyzed potential scientific papers and statistical reports for their compliance with the stated topic and purpose of the presented research. Publications submitted before the beginning of 2021 were excluded when selecting the list of literature sources used (with the exception of fundamental scientific publications and reports for a certain historical period under consideration), however, the periodicity of the data under consideration began in 2017 to analyze trends in the development of the regional HDI (to consider the stable trend dynamics in the longer medium term). The titles of the scientific studies under consideration and the abstracts of the articles for them were impartially analyzed by the author's team to exclude/include those that did not correspond/they met the inclusion criteria by subject, issue, analysis and presented solutions in the context of the study.

Additional studies describing methods for measuring multidimensional poverty (the Alkire-Foster methodology) were considered. To achieve the main goals, our study added some studies of the project for the development of multidimensional poverty indicators for the Republic of Kazakhstan at the end of 2022, reflecting the potential areas of issues on deprivation (social and economic hardship) of the population of its regions, as well as confirmation of the presented data from the presented statistics of government agencies, which indicates the correct direction of the methodology of the above-presented draft indicator of the Multidimensional Poverty Index (IMB).

Results

If we consider the human development index as an indicator of the quality of life and prosperity (the latest relevant data for 2021), we can conclude that Karaganda region also has no problems in its development and income.

If the average HDI for 2021 for the whole republic is 0.811, then Karaganda region has an indicator of 0.833, is ahead of the capital Astana (0.796) and out of the whole republic is second only to Almaty (0.841),

which is understandable, since Almaty is the financial center of the republic and concentrates the lion's share of capital and business activity. All other regions of the country do not demonstrate such indicators of the quality of human development, which is clearly illustrated on the Figure 2 below:

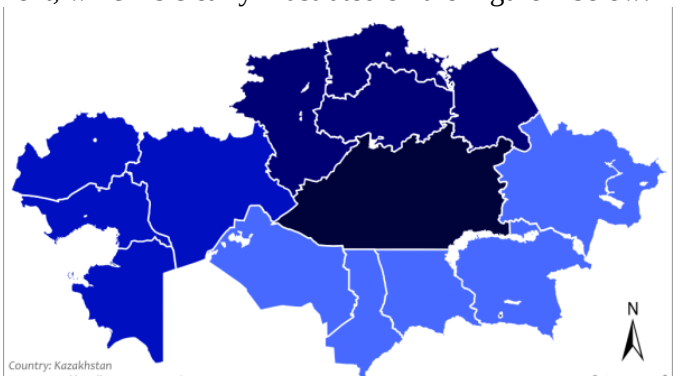

Figure 2. Map of the regions of Kazakhstan by HDI level (for 2018) (the darker the blue color on the map, the higher the indicator in a particular region)

Note — the regions on the map are represented before the territorial and administrative reform in 2022 (Hunter, 2018)

This map (Fig. 2) clearly reflects the leadership of Karaganda region among all regions of Kazakhstan, whether comparing with it the conditionally needy "agrarian" South, the "mineral-rich" West, or the "industrially developed" North and East, since in the central part of the map the saturation concentration of dark blue color is transformed into almost black. From all of the regions or cities of national importance, Karaganda region is the second, it stays only after Almaty in terms of income, and it would be strange if it even had a chance to overjump the republican "financial center". This situation also can be aproved by HDI statistical demonstration within 2017–2021 five years period in the Table:

Table. HDI by regions of Kazakhstan for the last 5 years of measurements from 2017 to 2023

Region of the Republic of Kazakhstan	2017	2018	2019	2020	2021	2022	2023
Almaty city (leader of the list)	0.841	0.844	0.849	0.843	0.841	0.845	0.849
Central region (Karagandy oblast)	0.833	0.836	0.841	0.836	0.833	0.840	0.845
Eastern region	0.796	0.800	0.804	0.799	0.796	0.794	0.797
Northern region	0.826	0.829	0.834	0.829	0.826	0.823	0.827
Southern region	0.795	0.798	0.802	0.797	0.795	0.798	0.796
Western region	0.804	0.807	0.812	0.806	0.804	0.807	0.810
Note — compiled by the author on the basis of data from the Bureau of National Statistics							

The data in the Table for Karaganda region represent the stability of the human development indicator with minimal and acceptable fluctuations in data value, approaching to value of 2023. By the end of 2023, the regional indicator of the HDI of the Karaganda region was already 0.845. There were no trends towards its decline. It was growing in contrast.

If we consider the human development index of the region in comparison with this indicator of other countries of the former socialist bloc (including the states of Central and Eastern Europe), we can find an amazing fact that according to this indicator, Karaganda region is ahead only of the Baltic States and the Visegrad group (although the gap with Lithuania, Hungary and Slovakia is not so large), and the average indicators even the most industrialized countries, such as Russia, Belarus, and Ukraine, already exceed the level of human development of Karaganda region itself.

By the end of 2023, Karaganda region has become the region with the lowest specific poverty level in Kazakhstan, 2.7%. This description, as well as the conditions of development of Karaganda region described above and in the introduction of the article, clearly show that, as with many economic theses, and according to the development rating, the problem of poverty should not be relevant to it.

However, exactly a year ago, the Bureau of National Statistics of the Republic of Kazakhstan published information that Karaganda region is in the7th place in the anti-rating of the poverty level, the population with low incomes was about 40 thousand people per 8,9 thousand households for the third quarter of 2022 (Bureau of National statistics of the Agency for Strategic planning and reforms of the Republic of Kazakhstan, 2023).

Therefore, the situation with the definition of poverty in this region looks extremely paradoxical, having a number of statistical distortions and different interpretations of various government departments and analytical media on the nature of poverty.

However, there is an explanation for these paradoxes, which sounds like the "concept of the industrial profile of working poverty". Why we will consider the region in the context of this paradigm. The first reason for this is the predominance of the industrial share of employment, expressed in the GRP structure as of January 1, 2024: the share of goods produced is 50.4%, while the share of work performed or services rendered is 41.3%. The industrial social context is also indicated by the high share of urbanization of the region's population, as of January 1, 2024, it amounts to at least 81.6% of urban residents employed in industries mainly located in the cities of the region (Karaganda, Balkhash, Temirtau, Saran, Abai, etc.). And the dynamics of self-employment in Karaganda region, showing a steady decrease in the share of the "self-employed" population from 20.7% to 10.3%, that is, by 10.4%, demonstrates the departure of most of the population from informal employment and their involvement in the spheres of legalized and officially registered industry and the sphere of works/services.

According to the basis of the reasons we described above, we will consider the working poverty of Karaganda region as industrial.

To begin with, it is necessary to determine its main characteristics. The profile of industrial labor poverty prevails in the economic structure of almost all developing countries. Its presence is due to the excessive actual supply of labor (mainly for low and medium-skilled workers). Oversupply generates cheap demand. From this fundamental economic law, we can observe a very low level of wages for workers, regardless of the field of activity in which their labor is involved.

This category of the poor always remains officially employed, however, receives a very modest monetary reward for their work. The nominal nature of the activities of trade union movements and the strict labor management of employers only exacerbate the market nature of this problem.

The share of low- and medium-skilled workers in world practice is 45% of all working poor (including all spheres of work: post-industrial employment — 20%, and agriculture — 35%). The "non-poor" segments of the population in the professional group of the "proletariat" make up less than a third of the total number of production workers.

It is also necessary to keep in mind, that workers of lower qualifications — laborers and workers of 1-2 categories in more than 60% of cases are likely to be among the income poor, while for workers of similar qualifications in the service sector such indicator may be less than 30% (Anikin, Tikhonova, 2014).

Due to the very apathetic attitude towards the cheaper labor force, as well as the weak trade union movement in the country and the region in particular, employers do not seek to increase wages for production workers, offering an increase only for a corresponding increase in output standards.

An equally good reason confirming the inflated wage rates of the region's population employed in the industrial sector can be considered by high average monthly salary in the region in the extractive industry, amounting to about 798,421 tenge for the last quarter of 2023, while wages employed in other industries are no more than 541,313 tenge, and in manufacturing, no more than 461,000 tenge, given the fact that the share of people employed in the extractive industry does not exceed 17% of all industrial workers.

It would seem that even with all these factors, we do not observe objective statistical indicators of poverty, but only see a high level of wages in comparison with the rest of the country's regions. However, the problem is not only in the amount of cash payments, but also in the risks that the poverty profile itself carries.

If only a small part of low-skilled workers are doomed to poverty because of their fixed salary, then most of them have all the risks of falling into the category of poor at the slightest deterioration in the family situation: the birth of a second or third child, the death of a spouse or the loss of their job, divorce, illness of one of the family members, who will have to someone to take care of, as a result of which they quit their job.

Any slightest increase in the dependency burden on a single household immediately becomes detrimental to its well-being, since it undermines the very structure of income distribution in the family, and sometimes completely deprives it of income. There is a very convincing number of risk factors inherent in employment purely in the industrial sector:

- the difficulty in employment place changing, since some of the working professions are "tied" to a specific specialization. For example, if a low-skilled handyman or an employee of a medium-grade lathe can find a job due to closure/dismissal from their workshop, then where to retrain a metallurgist, a roller, a controller of mining equipment and other highly specialized workers? Their specialty depends directly on the

structure of production and is much more difficult to change than for a low-skilled proletarian or a service worker. Here, the problem of industrial employment in the single-industry towns of Karaganda region also arises, which are such due to the presence of unique "monopreprises", since the term itself implies the uniqueness and exceptionality of these industries and the binding of a significant part of the population of these economic territories to the activities around them. A striking case to reflect such a problem was the change of ownership of the Karaganda Metallurgical Plant (at the stage of transferring the assets of the enterprise from JSC "ArcelorMittal Temirtau" to Kazakhstani JSC "Qarmet", during which the employees of the enterprises received a number of problems and risks: from an interruption in the payment of wages and bonuses, to the risk of falling under large-scale cuts and completely losing workplace due to potential changes in the norms of production and personnel policy);

- the subsequent difficulty in retraining for these workers, since most enterprises in the region, at best, provide only short-term refresher courses for previously acquired specialties of technical and vocational education. In the context of the very demanding policy of HR departments of Kazakhstani enterprises to confirm specialization with educational documentation, this would mean the need for retraining, which would bring unforeseen stress to employees in the need to combine work activities and training (which would take place at best at the expense of a potential employer, and at worst and the most objective case for the production realities of the region — at the expense of the employee himself, adding to the stress associated with reorientation to a new production activity, an additional financial burden on training);

- as a result, such a change in production activities would lead to the overcrediting for some of these employees to pay for educational services that a potential new employer would not provide them, but would have to pay out of pocket, since distance learning programs at universities and colleges of the Republic of Kazakhstan are paid, and free education provided in vocational schools in Kazakhstan is carried out on a full-time basis full-time and requires compulsory attendance of classes during a time similar to the length of the working day. It is also worth considering that education fees at universities in the region that train industrial personnel amount to 500,000 tenge and above, which is similar to about two or three amounts of wages that an employer usually sets for newly hired workers.

That is, even if we consider in this context the potential non-monetary risks of deprivation of the working class, it is not difficult to guess that they will lead in turn to quite monetary consequences, as a result of structural changes in the employment of the population of single-industry towns.

The fact that these risks exist is also confirmed by the Multidimensional Poverty Index (MPI), which was recently introduced into the practice of measuring domestic problems based on the Alkire-Foster methodology. This index is a significant addition to monetary indicators of poverty, as it helps to identify sets of deprivations (by compiling their matrices) and realize the potential for the formation of a new poverty profile hidden by the monetary factor.

Despite the extremely low level of multidimensional poverty in comparison with other countries of the world, according to the UN report on multidimensional poverty for 2022, Kazakhstan, took the place of the anti leader in it (IMB=0.002). And it still has indicators of deprivation for which it would be need to worry about: 46.7% of deprivations are related to nutrition, 43.8% with child mortality, 2.9% with school attendance, 3.2% with housing provision, 2.1% with drinking water problems.

Based on the results of a more detailed application of the project for calculating the index of the national IMB of Kazakhstan, prepared by the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for December 2022, as part of the review of experimental calculations using the Alkire-Foster method, more accurate and detailed proportions of deprivation in such problems as: provision of sewerage and sanitary infrastructure — 15.6%, compliance with the standard of living (person/m2) — 14.8%, problems with Internet access — 13.2%, indebtedness of the population (household debt) — 13%, lack of fuel for heating — 11.1%, unemployment — 7.6%.

The analysis of the "leaders" among the multidimensional poor regions confirmed that Karaganda region occupies a fairly high place in it — the 6th out of 17 analyzed regions, and its poverty intensity is quite comparable to the national average — 29% from 32.2%, which shows that almost every multidimensional poor individual in the region is deprived of their needs practically by a third of all the considered indicators, which does not correspond in any way to the nominal indicators of the region with a high HDI.

If we consider the structure of deprivation in the context of the region itself, the following indicators can be identified: 23% of deprivation falls on the problem of household debt, 13% on compliance with the standard of living, 10% on the problem of quality of education, 10% on accessibility of education, 9% on unemployment, the lion's share of which has a structural nature of origin (Belonosova, 2022).

That is, almost all of the above-described risks of the industrial poverty profile, such as credit debts, the problem of education and retraining, as well as subsequent employment in industrial production with very specific labor functions, are manifested in the region due to the considered approach.

The above facts from this analysis are confirmed by data on the structure of monetary expenditures of the population in the fourth quarter of 2023, in which 10.1% of income is spent on paying household debts on loans, 4.7% on financial assistance to relatives and acquaintances, despite the fact that almost half of the money from the population of the region goes to purchase food (40% all monetary expenses) (Bureau of National statistics of the Agency for Strategic planning and reforms of the Republic of Kazakhstan, 2023).

According to the results of the above analysis, it is extremely difficult to call the population of this region poor and economically stable.

Having considered the above-presented problems, one can raise the question of the potential for solving the presented problems: "How the presented risks can be mitigated in the aspect of the development of an industrial management system for industrial workers"?

Naturally, the solution to this problem lies in labor legislation and trade union support, the social policy of the state, and in the policy of creating a favorable working environment and a system for improving the management of labor personnel at industrial enterprises themselves.

If we take into account some ways to overcome educational and qualification problems in the framework of considering the experience of more developed EU countries (post-industrial economies or countries in the stage of industrial transition), it is worth referring to the landmark report of the European Training Foundation, presented back in 2006, when numerous industrialized countries thought about the problems of maintaining and quality of employment in the enterprises in the industrial sector, role of which has partially decreased in the formation of national income indicators in European countries. These ideas were reflected in the report "Skills Development and Poverty Reduction in countries in transition", published by experts from the European Training Foundation P. Grootings and S. Nielsen in 2006.

The General Directorate of the European Commission (EC) for Development confirmed the importance of the directive of that time on changing educational standards for the educational policy of the European Union (EU) both in developing countries of Asia, Latin America and Africa, and in European territories in the context of the transition to the most professionally applicable, relevant to the needs of the modern market and mobile in its system changes to the type of education. This context was expressed in the following quote from the expert of this organization, Sipke Brouwer: "Today's youth is the human capital of tomorrow. These are workers, creative workers, entrepreneurs and leaders. They should be given the opportunity to increase their potential and be given the opportunity to become active builders of economic and social progress on the continent. Therefore, the EU will pay much more attention to labor education and training, taking full account of the requirements of the labor market. This will help stop the current brain drain process and turn it into an influx of brains for the entire continent.

King and Palmer proposed historiography for various post-war periods in approaches to solving poverty problems:

In the 1950s and 1960s, economic growth and modernization of production capacities were considered by many expert economists as the main need for reducing poverty and increasing of living and working capacity for the population (after-war economic needs). The main directions of workforce developing policy of the industry were concentrated in industrialization and training of the workforce to meet the needs of the industry.

In the 1970s, the focus shifted to the direct health providing, nutrition and education for workers. This approach was considered as a state policy. The 1980's World Development Report (what is describing that period) was based on the data and principles of development, which were available at that time. These principles stated that improment of the health policy, education and nutrition systems by their preferential provision to poor people is not an end in itself, but rather a factor, what leads economy to income growth, including the incomes of the poor. In turn, this factor stimulates demand for consumption (by including poor people in this process) and contributes to the development of production capacities.

In the 1980s, there was another turn moment. It was connected with the politics peripheral capitalism states: from the region of Latin America to Northern-West Africa local governments were trying to decline somehow their economic downturn, comparing to capitalistic world. It was the only one method, what they have found: it was a method to reduce labor costs for public needs. Structural change policies, privatization and private sector development have been placed by the World Bank and the International Monetary Fund at the forefront of combating the economic problems of third world countries. This period was characterized by

market fundamentalism and the "Washington Consensus", as it was described by J. Stiglitz in 2002. Attention to social aspects (the "man above all" approach) would be an obvious response to the new policy, however, due to the decline of the socialist order and the means to maintain it in third world countries, it had a much smaller effect, even less than in the West. Nothing, but the grassroots initiatives of various NGOs in these peripheral countries could be countered by the implementation of these countermeasures to capitalist fundamentalism gaining momentum.

If the post-Soviet countries had the market fundamentalism of the 1990s furiously raged in labor policy (the "working population that did not fit into the market", had to "vegetate" as a result of the elimination of inefficient industries), in Europe and North America, on the contrary, it was time for structural changes, "capitalism with a human face" was demonstrated to society, strengthening role of the state and returning to politics "creating favorable conditions" (as a precondition for poverty reduction).

The late 1990s and early 2000s were marked by the appearance of Reports on the Development of the Poverty Reduction Strategy (PRS), which provided for the introduction of a comprehensive policy program. However, the "discovery" of poverty and the development of poverty reduction policies were in many cases the work of donor organizations rather than national governments, who recognized the lack of alternative to market fundamentalism in real economic policy. The negative effect of this approach was in its practical implementation and this fact was recognized by authors of the report, by giving an example of its negative implementation, which is not strange in socialist conditions. The post-war artificial economic growth of the countries of the socialist bloc and the USSR in the 1960s ended in an increasing process of gradual economic impoverishment, which became the catalyst for the final collapse of the communist system (European Training Foundation-European Union, 2006).

Why was it unsuccessful? By the reason, that countries could not shift the focus from economic growth based on a system of strict, maximally economical command-and-plan administration to the creation of a system of more diverse, intensive, high-quality and flexible production, which would not only be relevant in the sale of its products in foreign markets, but would also correspond to the changing desires of workers to maintain a high-quality work environment. Having completed the post-war period of industrial recovery, the Soviet economic system was unable to realize the potential of the growing workforce and lead it to create new production projects, focusing on efficiency and market benefits from exporting natural resources, isolating its fundamental and partly applied science from the world in order to preserve the political regime, which put an end to the potential of creating innovative industries in the 70s and 80s.

As a result of this approach, the poverty of the working class, which is the basis of the "proletarian revolution", led to the collapse of both economic prospects and political ideals. Both absolute and relative poverty in relation to non-communist countries began to increase in socialist countries, starting precisely from the 70s. As far as we know, the policy of transition since the 80s, based on the Washington consensus from similarly "economical" capitalist regimes, hardly helped to improve the situation. At least, it would not be in the medium term.

On the contrary, poverty indicators demonstrate a decline in living standards in most countries and for the majority of the population, including the working population. According to the calculations of the European Bank for Reconstruction and Development for 2005, one in two in the countries named as Countries of early transition lives in poverty. Even when there was some economic growth by the end of the 1990s, it did not make it easier for the poor — a significant result of the departure of industrialized societies from socially oriented principles (European Training Foundation-European Union, 2006).

The authors of the report emphasize that the insufficient emphasis that the educational system placed on the production aspect of education in the 90s of the XX century was the main factor that led to organizational impoverishment.

It elicited three additional policy responses in the early stages of the transition period:

Firstly, there was a reorientation of higher education, which, taking into account budgetary constraints, clearly took place due to savings that should have been allocated for the development of vocational education and training in its practical and industrial context. This reorientation corresponded to the long-established aspirations of ordinary people and scientists about the "white collar" who found themselves in managerial positions. Basic industrial training was associated with the "lower" strata of society, and secondary technical education was increasingly seing as an alternative path to higher education.

The post-transition policy has only reinforced this long-established trend. It also reinforced the trend towards insufficient investment in high-quality professional and technical training (risks of industrial defects, unwillingness of production owners to take responsibility for possible occupational injuries of students, etc.).

An important side effect of development in both developing and post-transition countries was the fact that children from poor or impoverished families were unable to complete the entire course of general secondary and higher education.

Secondly, due to the above-described squeamish attitude towards industrial training, both on the part of potential personnel for it, and on the part of production owners who do not want to take on additional social burden at the expense of their capital, vocational training has become the only real alternative for children from poor families, sometimes more because of economic than educational reasons. The preservation of vocational schools was seen as one of the last chances to preserve at least some kind of social security system for the poor, especially in those countries where the school system was part of the system of ministries of Labor and Social Security. In the Republic of Kazakhstan, the system of technical and industrial education is now the only possible and legal social elevator for children from poor families.

"The third response was an almost universal attempt by the leaders of the educational system to abandon the professional part of education, which was not only the most expensive and resistant to modernization due to restrictions in government funding, but also the most ideologically discredited. This system is completely outdated due to the isolation of its content and didactic approach. Moreover, the production base itself was significantly worn out and needed to be completely updated, and there was no state budget for all these needs".

Of course, the role of didactic issues is equally important here, along with the role of spending on recreating the conditions of practical training.

For example, Finland was able to maintain and adapt the latest system of industrial personnel training by having reworked a significant part of the didactic approaches of Soviet vocational schools and updated the material and technical base for its similar vocational colleges in its modern realities, and consequently the high level of its industry in its traditional sectors, so that the working class in this country is not perceived as an economic category "losers", as it happens in most EU and CIS countries.

But there are quite a few examples of such integration of updated approaches into established production chains and systems, both among developed and developing countries of the EU and the CIS, since for the elites of numerous states with a neoliberal economic model, the "problem of the dissatisfied proletariat" is a relic and atavism of the last century, which we would like to get rid of as soon as possible and step into a new post-industrial economic order through the development of trade and services sectors, without investing huge amounts of money in the real sector of production at the expense of the state, as well as its private financial circles, due to weak competitiveness with the largest American and Asian industrial producers of goods.

An even more unpleasant aspect is the fact that even in scientific thought, the problem of human capital development and poverty with their corresponding causes in vocational education began quite recently, only in the early 20s of the XXI century, as evidenced by the following bibliometric map on Figure 3:

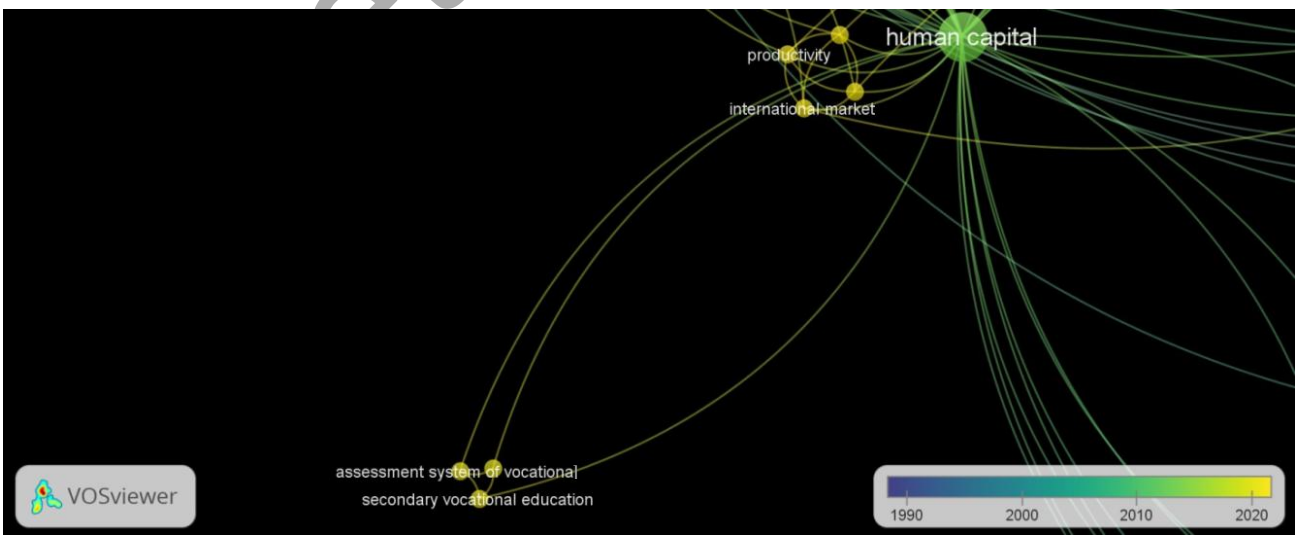

Figure 3. Bibliometric relationships of the terms under consideration, presented in the work in a temporal context (according to the temporal trends of the study)

Note — compiled by the author based on the keyword search of the work in the VOSviewer program

Figure 3 is an enlarged version of Figure 1, presented in a retrospective format (from 1990 to 2020), that shows period of vocational education research popularity with a focus on its problems in development of modern human capital concept. This part is concentrated on negative meaning of skill gaps from professional education in real manufacturing conditions (Chekol, 2024) and role of education for growth/fall of industrial workers status (Yusriana et al., 2021). This concept became popular only in the end of 2018 and it is well developing in scientific literature for today.

Unfortunately, Kazakhstan is not an exception from such examples of weak interest in the development of the real sector of the economy, whether for real or far-fetched reasons. However, the possible impoverishment of the population employed in the field of industrial production in Karaganda region can quite severely undermine the economic well-being of both this particular region and the entire state as a whole for the following reasons. Here we can see, what risks exist, which can be arised, when it is possible to combine low- and medium-skilled workers in the Karaganda region:

- there would be significant risks of mass layoffs from metallurgical and mining enterprises, since the high risks of occupational injury in these industries, coupled with a low estimate of the cost of labor, encourage workers to change their place of employment;

- such a situation does not motivate potential applicants to enter working professions in any way, and therefore the influx of new qualified labor at industrial enterprises will decrease;

- due to the lack of personnel for this activity, enterprises with outdated technologies will continue to reduce output and stagnate, which risks leading to their closure, which will become a potential engine for a massive increase in structural unemployment;

- if some specialists in the mining and industrial sector will still be able to find a potential job, then in the case of ferrous and non-ferrous metallurgy enterprises it will not be so easy to do this, since the level of specialization of workers in these industries is very unique and the skills acquired in this field of management will be difficult to implement in any other field;

- if such specialists retrain somewhere, then in Kazakhstani realities, where it is extremely difficult to get a job without a specialized education, they will have to survive either by casual earnings as self-employed, or find a job in the service sector, devaluing the already low cost of wages in this area by creating a high supply of labor;

- what is especially terrifying is that this situation will dramatically undermine the economy of the single-industry towns of Karaganda region (at least the cities of Temirtau and Balkhash, the capitals of ferrous and non–ferrous metallurgy of the Republic of Kazakhstan), which is enormously dependent on these industrial monopreprises. This fact can trigger both a chain of impoverishment of the population and lead to a certain social explosion, the consequences of which will have to be covered by both business and state economic and management institutions.

Summing up the above, in order to prevent the above-described risks, Kazakhstan needs to draw the necessary lessons from the experience of developed countries that are/were in a state of industrial transition, namely, to learn from the experience of vocational education/training reforms in the partner countries of the ETF, conducted by them over the past 15 years.

The combination of these three problematic sources described above shows that in order to form an effective production and labor policy that will retain employment in the industry, it is important to comply with the following principles:

- the production skills acquired by an employee as a result of training in educational institutions are important, but the additional resources of the enterprises themselves are much more important for the retraining of their workers, including financial ones, as well as a broader constructive environment for the actual realization of this goal;

- National policy in the field of professional development should go further than just an attempt to reduce poverty, it should be aimed at creating sustainable well-being for workers in such harmful and dangerous industries;

- local regional projects in individual economic territories, despite the importance and possibility of developing new technological and managerial experience in the industrial industry, a priori will always suffer from a number of territorial restrictions, as well as short-lived, due to limited regional resources;

- it is necessary and inevitably to integrate local regional projects at the local level with key public and private organizations in the region, as well as at the national level, as part of a common policy in the industrial education and training sector for potential workers;

- even if potential vocational education reforms are a purely sectoral approach for individual industries or sub-sectors of the industry, they will have only a limited effect even in these specialized industries, without links and interactions with macroeconomic policies aimed at creating the most favorable general conditions for national standards of quality of life and well-being;

- in general, significant changes in the improvement of human capital at industrial enterprises of the Karaganda region will come only when the government of the republic, with the support of donor enterprises, will make investments across the entire social spectrum of costs in order to contribute to the creation of the most favorable overall atmosphere for both the public and private sectors, as well as invest money in providing high-quality professional education and training.

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Жұмыс кедейшілігінің депривациялық тәуекелдерінің Қазақстандағы адами капиталдың сапасына әсері

Аңдатпа:

Мақсаты: Мақаланың негізгі мақсаты Қазақстан Республикасының Қарағанды өңірін өнеркәсіптік жұмыспен қамту жағдайларында индустриялық (құрылымдық) кедейлікке әкеп соғуы мүмкін депривациялық тәуекелдерді қарастыру.

Әдісі: Vosviewer-де библиометриялық талдау әдісі қолданылды. Депривация және кедейлік ұғымдарын анықтаудың әдіснамалық тәсілдері қарастырылды, яғни монетарлық көзқарас және көп өлшемді кедейлік әдістемесі тұрғысынан.

Қорытынды: Монетарлық тәсілдің көрсеткіштерін және көпөлшемді кедейшілік индексін депривация анықтамалары тұрғысынан салыстыру депривацияларды көрсетудегі монетарлық тәсілдің тиімсіздігін көрсетті. Қарағанды өңірінің көпөлшемді жұмыс кедейлігі индексінің нәтижелері оның халық табысы мен АДИ-нің жоғары көрсеткіштеріне сәйкес келмейді. Бұл депривациялаудың себептері анықталды, олармен байланысты тәуекелдер көрсетілді және олардың жағымсыз әсерлерін деңгейлестіру бойынша ұсыныстар берілді.

Тұжырымдама: Көп өлшемді кедейлік мәселесі өңірде бар және оның тұрғындарын депривациялау ауқымы бойынша адами капиталдың сапасына нұқсан келтіреді. Бұл құбылыстың тәуекелдері мен проблемалары жұмысшылардың біліктілігін жаңартумен және олардың мәселесі кәсіптік білім беру мәселелерімен тығыз байланысты.

Кілт сөздер: адами капитал, депривация, өнеркәсіптік кедейлік, көп өлшемді кедейлік, өндірістік сектор, білім беру, өнеркәсіптік оқыту, тұрақты даму.

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Влияние депривационных рисков рабочей бедности на качество человеческого капитала в Казахстане

Аннотация:

Цель: Основной целью работы является рассмотрение депривационных рисков, способных привести к индустриальной (структурной) бедности в реалиях промышленной занятости Карагандинского региона Республики Казахстан.

Методы: Использовался метод библиометрического анализа VOSviewer. Были рассмотрены методологические подходы к определению понятий депривации и бедности: как с точки зрения монетарного подхода, так и с точки зрения методологии многомерной бедности.

Результаты: Сравнение показателей монетарного подхода и индекса многомерной бедности в аспекте определений депривaций выявило неэффективность монетарного подхода в отражении депривaций. Результаты индекса многомерной рабочей бедности Карагандинского региона не соответствуют его высоким показателям

доходов населения и ИЧР. Выявлены причины данных депривaций, отражены риски, связанные с ними, даны рекомендации по сглаживанию их негативных эффектов.

Выводы: Проблема многомерной бедности существует в регионе и подрывает качество человеческого капитала по широкому спектру лишений его жителей. Риски и проблемы данного явления связаны с актуализацией навыков работников, проблемы которой сильно взаимосвязаны с проблематикой профессионального образования.

Ключевые слова: человеческий капитал, депривации, индустриальная бедность, многомерная бедность, производственный сектор, образование, промышленное обучение, устойчивое развитие.

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