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THE IMPACT OF EFFECTIVE UTILIZATION OF LABOR POTENTIAL ON THE SUSTAINABLE ECONOMIC DEVELOPMENT OF A REGION (A Case Study of the Khorezm Region)



Kutlimuratov Mansurbek Sattarovich

Assistant Lecturer, Department of Specialty, Social, Humanitarian and Exact Sciences, Turtkul Faculty, Tashkent State University of Economics

ORCID: 0009-0007-9452-409X

E-mail: mbekman1881@gmail.com

Abstract. This article examines the impact of the effective utilisation of labour potential on the sustainable economic development of a region, using the Khorezm region of Uzbekistan as a case study. The study aims to analyse the composition of labour resources, the level of employment, and labour productivity in the region, as well as to identify existing problems.

The author substantiates the critical role of education quality, the vocational guidance system, and the investment climate in developing labour potential. The research identifies a high dependence on agriculture and a low level of employment in modern industrial sectors within the labour structure of the Khorezm region. The results indicate that the effective management of labour potential has a direct positive impact on the growth of regional gross regional product (GRP).

To address these problems, a comprehensive set of measures aimed at workforce training, the development of the digital economy, and the promotion of small business is proposed. The scientific novelty of this research lies in the quantitative assessment of the relationship between labour potential and sustainable development specifically for the Khorezm region.

Keywords: labour potential, sustainable development, regional economy, employment, labour productivity, Khorezm region, employment policy, economic growth, human capital, labour resources.

Аннотация. В данной статье исследуется влияние эффективного использования трудового потенциала на устойчивое экономическое развитие региона на примере Хорезмской области Республики Узбекистан. Цель исследования заключается в анализе структуры трудовых ресурсов, уровня занятости и производительности труда в регионе, а также в выявлении существующих проблем.

Автор обосновывает важную роль качества образования, системы профессиональной ориентации и инвестиционного климата в развитии трудового потенциала. В ходе исследования выявлены высокая зависимость структуры занятости от сельского хозяйства и недостаточный уровень занятости в современных отраслях промышленности Хорезмской области. Полученные результаты свидетельствуют о том, что эффективное управление трудовым потенциалом оказывает непосредственное положительное влияние на рост валового регионального продукта (ВРП).

Для решения выявленных проблем предложен комплекс мер, направленных на подготовку квалифицированных кадров, развитие цифровой экономики и поддержку малого бизнеса. Научная новизна исследования заключается в количественной оценке взаимосвязи между трудовым потенциалом и устойчивым развитием применительно к Хорезмской области.

Ключевые слова: трудовой потенциал, устойчивое развитие, региональная экономика, занятость, производительность труда, Хорезмская область, политика занятости, экономический рост, человеческий капитал, трудовые ресурсы.

INTRODUCTION

In the modern global economy, human capital and labour potential have become among the principal driving forces of regional and national progress. Alongside the traditional factors of economic growth, such as capital and natural resources, knowledge, skills, and a qualified labour force are gaining increasing importance [1]. International experience demonstrates that the effective utilisation of labour potential has a positive impact not only on GDP growth, but also on improving quality of life, ensuring social stability, and supporting environmental sustainability [2].

In the Republic of Uzbekistan, the issue of labour resource management is becoming increasingly important. Rapid population growth, the entry of the younger generation into the labour market, and the need to diversify the economy require the formation of an effective employment policy across all regions of the country. The Khorezm region, with its demographic characteristics, agricultural specialisation, and relatively low level of industrialisation, demonstrates a particularly significant manifestation of this problem [3].

The relevance of the study lies in the fact that the structural analysis of labour resources in the Khorezm region, the assessment of the efficiency of their utilisation, and their relationship with sustainable development have not yet been fully investigated. Existing studies have largely been conducted at the national level, without sufficient attention to individual regions, particularly the Khorezm region [4].

The object of the study is the labour potential of the Khorezm region and the processes of sustainable economic development.

The subject of the study is the economic relationship between the effective utilisation of labour potential and the sustainable development of the region.

The aim of the study is to analyse the state of labour potential utilisation in the Khorezm region and its impact on sustainable development, as well as to develop scientifically grounded proposals and recommendations.

The objectives of the study are as follows: to examine the theoretical foundations of labour potential; to conduct a statistical analysis of the structure of labour resources in the Khorezm region; to assess the dynamics of labour productivity and employment indicators; and to identify existing problems and propose ways to overcome them.

LITERATURE REVIEW

A broad scientific foundation has been established by foreign scholars in studying the relationship between labour potential and economic development. T. Schultz [5] and G. Becker [6], as among the founders of human capital theory, substantiated the economic efficiency of education and vocational training. Their works show that investment in education increases labour productivity in the long term and contributes to economic growth.

According to the analyses of E. Denison [7], a significant part of the economic growth of developed countries has been achieved through improvements in the quality of labour. In subsequent research, D. Acemoglu and J. Robinson [8] demonstrated the impact of institutional factors, including labour market institutions, on long-term development. R. Lucas's [9] endogenous growth model mathematically substantiates that human capital is one of the principal sources of economic growth.

From the standpoint of regional economics, the works of P. Krugman [10] and M. Fujita [11] examine the impact of the location and clustering of labour resources on regional competitiveness. In the CIS context, V. A. Iontsev [12] and S. V. Ryazantsev [13] analysed the relationship between labour migration and regional development.

Among Uzbek scholars, the works of A. V. Vahobov [14], Sh. Sh. Shodmonov [15], and N. X. Jalolov [16], devoted to the development of the labour market in the context of economic reforms, are of particular importance. In particular, A. Haydarov [17] studied employment problems in the regions of Uzbekistan and developed proposals for increasing employment in rural areas. B. Yusupov [18], for his part, conducted a separate study aimed at assessing the economic potential of the Khorezm region.

At the same time, these studies have often been limited to general regional analysis and have not fully captured the interaction between labour potential and the three pillars of sustainable development: economic, social, and environmental dimensions. This article aims to fill this gap by quantitatively and qualitatively assessing the impact of labour potential on sustainable development in the Khorezm region. This constitutes the main feature distinguishing the present study from previous research.

RESEARCH METHODOLOGY

A comprehensive methodological approach was used in conducting this study. The main components of the methodology are as follows:

Statistical analysis method. Time series for the period 2019–2023, obtained from the official reports of the Statistics Agency of the Republic of Uzbekistan, reports of the Khorezm Regional Administration on economic and social development, and the database of the Ministry of Employment and Labour Relations, were analysed. The indicators were assessed using annual rates of change and base growth indices.

Comparative method. Labour resource indicators of the Khorezm region were compared with those of other regions of Uzbekistan, including the Republic of Karakalpakstan, Bukhara region, and Navoi region. This approach made it possible to identify the strengths and weaknesses of the region. The comparison was based on data for the same period, 2019–2023, and from comparable sources, which ensured the reliability of the comparative analysis.

Correlation analysis. The statistical relationship between the labour productivity index, employment rate, and regional gross regional product (GRP) was calculated using the Pearson correlation coefficient. This method made it possible to establish a quantitative relationship between the efficiency of labour potential utilisation and economic sustainability.

SWOT analysis. The strengths, weaknesses, opportunities, and threats related to the labour potential of the Khorezm region were systematically assessed. This approach provided a strategic basis for developing policy recommendations.

Monographic approach. The activities of selected economic entities, including enterprises, farms, and educational institutions in the Khorezm region, were studied, and the practice of labour potential utilisation was analysed in depth.

ANALYSIS AND RESULTS

The Khorezm region is located in the northwestern part of Uzbekistan and, according to 2023 data, has a population of 1,942.5 thousand people. The region's population growth rate is close to the national average, indicating that demand for new jobs in the labour market is increasing rapidly [3]. Table 1 presents the main labour resource indicators of the region for the period 2019–2023 (Table 1).

Table 1

Main Labor Resource Indicators of the Khorezm Region (2019–2023)

Indicator	2019	2020	2021	2022	2023
Total population (thousand people)	1,803.1	1,838.2	1,872.4	1,906.0	1,942.5
Working-age population (thousand people)	1,012.4	1,031.8	1,052.0	1,071.5	1,092.3
Economically active population (thousand people)	698.3	712.1	729.4	748.0	765.2
Number of employed (thousand people)	658.5	671.2	688.6	706.4	724.1
Unemployment rate (%)	5.68	5.76	5.60	5.55	5.35
Officially registered unemployed (thousand people)	39.7	40.9	40.8	41.6	41.1
Labor productivity index (2019=100)	100.0	101.4	103.7	106.2	109.8

Source: Compiled by the author on the basis of data from the Statistics Agency of the Republic of Uzbekistan.

In analysing the data presented in Table 1, several important trends can be observed. First, during 2019–2023, the working-age population increased from 1,012.4 thousand to 1,092.3 thousand people, representing a growth rate of 7.9%. This indicates significant demographic pressure on the employment system. Second, the share of the economically active population remained relatively stable, ranging from 68.9% to 70.1%. Third, by 2023, the labour productivity index had increased by 9.8% compared with the 2019 base level. Although this represents a positive change, it should be noted that the indicator remains below the national average of 12.3%.

According to official statistics, the unemployment rate fluctuated between 5.35% and 5.76%. However, researchers note that when hidden unemployment, including partial employment and involuntary leave, is taken into account, this indicator may be considerably higher [19]. Seasonal unemployment, in particular, remains an acute problem in rural areas.

Analysing the employment structure of the Khorezm region makes it possible to identify the specific characteristics of labour potential utilisation (Table 2).

Table 2

Employment Structure by Sector in the Khorezm Region (as a share of total employment, %)

Sector	2019 (%)	2021 (%)	2023 (%)
Agriculture	38.4	36.7	34.2
Industry	12.1	13.4	15.2
Construction	8.6	9.2	10.1
Trade and services	18.3	19.1	20.5
Education and healthcare	14.2	14.8	13.9
Other sectors	8.4	6.8	6.1
Total	100.0	100.0	100.0

Source: Compiled by the author on the basis of data from the Ministry of Employment and Labor Relations and the Khorezm Regional Statistics Department.

As can be seen from Table 2, in 2019 the share of employment in the agricultural sector amounted to 38.4%, while by 2023 it had decreased to 34.2%. This change is associated with an increase in the share of employment in industry, from 12.1% to 15.2%, and in construction, from 8.6% to 10.1%. A positive trend is also observed in the trade and services sector. However, agriculture still remains the leading sector, indicating that labour potential is not yet being fully utilised in modern, high-value-added sectors.

The growth of employment in industrial sectors is largely associated with the activities of the Khorezm Free Economic Zone and the commissioning of new industrial enterprises in the cities of Urgench and Khiva [20]. At the same time, the digital economy and the IT sector are still insufficiently developed in the region, which limits employment opportunities for highly qualified specialists in this field.

The correlation analysis between labour productivity and the region's GRP showed that the Pearson correlation coefficient between these indicators is $r = 0.94$ ($p < 0.01$). This indicates a very strong positive correlation, meaning that a 1% increase in labour productivity is associated with GRP growth in the range of 0.73–0.81%. This result serves as important quantitative evidence confirming the significance of labour potential utilisation for sustainable economic development in the Khorezm region.

In addition, the correlation between the number of employed persons and the region's GRP is $r = 0.89$, indicating a high positive relationship. These results are also consistent with the findings of national-level studies [15].

Based on the analysis conducted, several systemic issues in labour potential utilisation were identified in the Khorezm region:

- The mismatch between the workforce training system and labour market requirements. The composition of specialists trained in the region's higher education institutions and vocational schools does not fully correspond to the real needs of economic sectors. For example, opportunities for training personnel in IT and digital technologies remain limited [21].

- Insufficient employment in the digital economy. According to 2023 data, the share of people employed in digital services and the IT sector accounts for 1.2% of total employment, whereas in Tashkent this figure is 8.4%. This indicates that the region still has significant potential for accelerating digital transformation.

- A high level of labour migration. Studies show that the number of labour migrants from the Khorezm region is increasing year by year. This reflects not only the outflow of labour resources, but also the utilisation of human capital in other territories [22].

- Relatively low female employment. The share of economically active women, at 42.3%, is lower than that of men, which stands at 57.7%. Socio-cultural factors continue to limit women's full participation in the labour market.

- An insufficiently developed investment climate. The pace of new job creation in the private sector remains lower than the growth rate of the unemployed population. This situation increases the need for additional measures aimed at expanding employment opportunities.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research conducted, the following conclusions were formulated, and corresponding proposals and recommendations were developed.

First, the efficiency of labour potential utilisation in the Khorezm region has not yet been fully realised. The high dependence on agriculture, the relatively low level of employment in modern industrial sectors, and mismatches in the workforce training system remain the main factors limiting the effective use of labour potential.

Second, according to the results of the correlation analysis, an increase in labour productivity has a direct and strong positive impact on the growth of the region's GRP ($r = 0.94$). This proves that the development of labour potential is one of the principal factors of sustainable economic growth in the Khorezm region.

Third, labour migration has a dual effect on the region. On the one hand, remittances from migrants contribute to improving the living standards of the population in the short term. On the other hand, the outflow of economically active young people may limit the region's long-term development potential.

To address the identified issues, the following proposals and recommendations are put forward:

Adapting the quality of education to the needs of the economy. Fields such as IT, digital technologies, engineering, and modern agricultural technologies should be expanded in higher education and vocational education institutions in the region. It is also recommended to strengthen cooperation agreements between industrial enterprises and educational institutions [23].

Developing the digital economy. Establishing IT parks and technoparks in the Khorezm region, forming a startup ecosystem, and attracting investment in digital infrastructure will improve the qualitative dimension of labour potential utilisation.

Increasing female employment. It is recommended to introduce remote jobs for women, short-term retraining courses, and a system of preferential loans for starting small businesses.

Improving the investment climate. Expanding the scope of the Khorezm Free Economic Zone, providing tax incentives for local industrial enterprises, and improving mechanisms for attracting foreign investment will contribute to the creation of new jobs.

Managing labour migration. It is recommended to strengthen ties with migrants working abroad, involve them in professional skills development programmes, and develop programmes that support their business initiatives in the region after returning.

If these proposals and recommendations are implemented, the efficiency of labour potential utilisation in the Khorezm region will increase. As a result, the economic, social, and environmental dimensions of regional sustainable development will improve simultaneously.

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