

Article

The Role of the Vocational Education System in Increasing Youth Employment in Uzbekistan

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Abstract: This article analyzes the impact of the vocational education system on youth employment in Uzbekistan from a regional perspective. The study is based on official statistical data for 2020–2024 and applies descriptive and comparative analytical methods. The results reveal significant regional disparities: employment rates are higher in industrialized regions and lower in agrarian areas. It is also found that the level of integration between vocational education and the labor market directly affects employment outcomes. The findings suggest that aligning vocational education with labor market demands and expanding the dual education system are key factors in improving youth employment.

Keywords: Vocational Education, Youth Employment, Labor Market, Dual Education, Regional Analysis



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1. Introduction

In the context of the modern global economy, a nation's competitiveness is no longer determined solely by the volume of its natural resources, but rather by the quality of its human capital and its ability to adapt to labor market demands. From this perspective, ensuring youth employment is considered a fundamental driver of both social stability and sustainable economic growth.

In countries with high demographic growth, like Uzbekistan, where the proportion of young people entering the labor market increases significantly every year, ensuring their effective employment is of strategic importance. In this process, the Technical and Vocational Education and Training (TVET) system serves as a vital institutional mechanism [1]. Consequently, this system prepares a workforce tailored to the labor market by harmonizing theoretical knowledge with practical skills.

According to data from international organizations, including the World Bank, investments in vocational education have proven highly effective in increasing youth employment rates [2]. At the same time, the issue of "skills mismatch" remains one of the primary systemic constraints in the labor markets of developing nations [3].

In the case of Uzbekistan, a disconnect between the vocational education system and the real sector existed for many years. This gap resulted in a dual challenge: a shortage of qualified personnel on one hand, and high youth unemployment rates on the other. In recent years, reforms have been implemented to modernize the vocational education system, introduce dual education models, and strengthen institutional cooperation between educational institutions and industrial enterprises to

address these issues.

The novelty of this research lies in its empirical analysis of the correlation between vocational education and youth employment within the specific context of Uzbekistan, examined through a regional lens.

Literature Review

The relationship between vocational education and youth employment is considered one of the fundamental directions extensively studied in economic literature within the framework of human capital theory.

In his seminal 1964 work, *"Human Capital: A Theoretical and Empirical Analysis"* [4], Gary Becker, along with Theodore Shultz in his study *"Investment in Human Capital"* [5], evaluated education as an investment in human capital and proved its role in increasing labor productivity. The authors argue that vocational skills are a core component of human capital and, through empirical analysis, justify them as a primary determinant of labor productivity and employment opportunities.

John Bishop, Ferran Mañé, and Michael Bishop, in their 2018 article *"Vocational Education and the School-to-Work Transition"* [6], highlighted the institutional mechanisms of vocational education in graduate placement. By analyzing the experiences of countries like Germany and Switzerland in minimizing youth unemployment through the dual education model, the authors demonstrate that a high level of integration between education and production significantly shortens the graduate's adaptation period to the labor market.

The World Bank's report, *"World Development Report 2023: Jobs and Economic Transformation,"* identifies the "skills mismatch" problem in developing countries as a major systemic constraint hindering youth employment. The report emphasizes increasing employment by teaching practical skills—such as managing cash flows and investments within enterprises—and highlights the importance of auditing education quality and alignment with international standards.

In the 2020 textbook *"Labor Economics: Theory and Practice,"* Qalandar Abdurahmonov explores the organizational and economic foundations of improving human capital quality and ensuring employment within the context of Uzbekistan's labor market [7]. The author scientifically substantiates that social stability can be achieved by modernizing the vocational education system, increasing the professional mobility of youth, and managing the demographic load on the labor market.

Research published by Bahodir Umurzakov in 2023 analyzes the institutional role of small business entities in ensuring youth employment [8]. The author emphasizes that the private sector is the largest employer for vocational education graduates and advocates for elevating the cooperation between entrepreneurs and educational institutions from a "client-contractor" system to a "strategic partnership."

Yodgor Obidov, in his scientific work *"Transformation of the Vocational Education System and Labor Market Efficiency in Uzbekistan,"* examines the flexibility of vocational education in meeting market economy demands. The author proposes a mechanism to reduce structural unemployment among youth by linking "professional standards" in personnel training directly to labor market needs [9].

Gulnora Shodmonova's 2021 research analyzes the development of human capital and its impact on economic growth within an innovative economy [10]. The researcher argues that implementing the principle of "lifelong learning" in the higher and secondary specialized vocational education system is of strategic importance in ensuring the competitiveness of youth in the labor market.

In a 2024 article titled *"Strategies for Increasing Industrial Clusters and Innovative Activity in Kashkadarya Region,"* Alisher Samatov analyzes the efficiency of labor resource utilization in the region's agro-industrial structure [11]. The author proposes creating "education-production" clusters based on large industrial enterprises in the region to increase regional youth employment in

proportion to the level of industrialization.

Sherzod Ergashev's research specifically examines the issues of improving workforce quality and eliminating regional labor market imbalances in the context of modernizing the regional economy, using the Kashkadarya region as a case study [12]. The author emphasizes the need to improve forecasting methods for demographic growth and the personnel needs of the real sector when developing regional employment programs.

2. Materials and Methods

This research focuses on analyzing the impact of the vocational education system on youth employment in Uzbekistan from a regional perspective, based on **descriptive** and comparative analysis approaches. The study utilizes official statistical data covering the period between 2020 and 2024.

Data were retrieved from the open databases of the Statistics Agency under the President of the Republic of Uzbekistan and the Ministry of Employment and Poverty Reduction.

The following scientific methods were applied in the study:

Descriptive Statistical Analysis: Evaluating mean values and dynamic changes in key indicators.

Interregional Comparative Analysis: Comparing employment metrics across different provinces.

Statistical Grouping Method: Categorizing regions based on average performance indicators.

Trend Analysis: Identifying 5-year dynamic shifts and patterns.

To facilitate a deep analysis of interregional disparities and 5-year fluctuations, priority was given to statistical-comparative and grouping methods. This methodological framework allows for the identification of differences in employment levels across regions and provides a comprehensive assessment of their dynamics over time.

3. Results and Discussion

Conducted analyses indicate a consistent upward trend in the employment rate of vocational education graduates in Uzbekistan over recent years. We first examine the 5-year dynamics of employment indicators by region [13].

Table 1. Dynamics of Employment Rates Among Vocational Education Graduates (2020–2024, %)

No	Regions	2020 y.	2021 y.	2022 y.	2023 y.	2024 y.	5-Year Change
1	Tashkent City	76,2	77,5	79,4	81,1	82,4	+6,2
2	Tashkent Region	72,5	74,1	75,8	77,5	79,2	+6,7
3	Navoi Region	71,4	72,8	74,9	76,8	78,5	+7,1
4	Fergana Region	69,5	71,2	73,1	75,0	76,7	+7,2
5	Namangan Region	68,8	70,5	72,4	74,3	76,1	+7,3
6	Andijan Region	68,2	69,8	71,9	73,6	75,4	+7,2
7	Bukhara Region	67,9	69,4	71,1	72,9	74,8	+6,9
8	Samarkand Region	67,4	68,9	70,6	72,4	74,3	+6,9
9	Syrdarya Region	66,5	68,1	70,0	71,8	73,8	+7,3
10	Khorezm Region	66,2	67,8	69,7	71,6	73,5	+7,3
11	Kashkadarya Region	65,8	67,5	69,4	71,3	73,2	+7,4
12	Republic of Karakalpakstan	65,1	66,6	68,5	70,3	72,1	+7,0
13	Jizzakh Region	64,8	66,3	68,1	69,9	71,6	+6,8
14	Surkhandarya Region	64,2	65,7	67,4	69,1	70,9	+6,7

15	Total for Uzbekistan	68,5	70,1	72,0	73,8	75,4	+6,9
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Source: Author's calculations based on data from the Statistics Agency of the Republic of Uzbekistan.

The data in Table 1 indicates that between 2020 and 2024, graduate employment across the republic demonstrated a stable growth dynamic (an increase of 6.9%). We shall now analyze the current status (2024) by categorizing the regions based on their rankings.

Table 2. Ranking of Regions by Employment Rate of Vocational Education Graduates, 2024 (%)

№	Region	Employment Rate%	Rating
1	Tashkent City	82,4	1
2	Tashkent Region	79,2	2
3	Navoi Region	78,5	3
4	Fergana Region	76,7	4
5	Namangan Region	76,1	5
6	Andijan Region	75,4	6
7	Bukhara Region	74,8	7
8	Samarkand Region	74,3	8
9	Syrdarya Region	73,8	9
10	Khorezm Region	73,5	10
11	Kashkadarya Region	73,2	11
12	Republic of Karakalpakstan	72,1	12
13	Jizzakh Region	71,6	13
14	Surkhandarya Region	70,9	14

Source: Author's calculations based on data from the Statistics Agency of the Republic of Uzbekistan.

Brief Analytical Commentary:

The ranking reveals a significant disparity between the leading and lagging regions. **Tashkent City** maintains its position at the top of the rating with 82.4%, which can be attributed to the high concentration of industrial enterprises, service sectors, and an active investment climate in the capital [14].

The Kashkadarya region, while ranking 11th with 73.2%, shows a competitive position compared to other predominantly agrarian regions. However, the gap between the top-ranked city and the lowest-ranked region (Surkhandarya, 70.9%) highlights the ongoing need for targeted regional interventions to harmonize the vocational training output with specific local labor market demands [15].

Regions with High Employment Levels ($\geq 77.0\%$)

Locations: Tashkent City, Tashkent Region, and Navoiy Region.

Key Characteristics:

High industrialization: Presence of large-scale manufacturing and processing sectors.

Strong investment activity: High levels of foreign and domestic capital inflow.

Advanced integration: Well-developed synergy between vocational education institutions and employers.

Result: Graduates in these regions exhibit a more effective and rapid adaptation to the labor market.

Regions with Moderate Employment Levels (73.0% – 76.9%)

Locations: Fergana, Namangan, Andijan, Bukhara, Samarkand, Syrdarya, Khorezm, and Kashkadarya.

Key Characteristics:

Growth in SMEs: A well-developed manufacturing and small business sector.

Technological Gap: A relative shortage of high-tech job opportunities.

Skills Mismatch: Partial discrepancies remain between vocational qualification requirements and the quality of education provided.

Result: These factors lead to a moderate, stabilized level of employment among graduates.

Regions with Low Employment Levels ($\leq 72.9\%$)

Locations: Republic of Karakalpakstan, Jizzakh, and Surkhandarya Region.

Key Characteristics:

Underdeveloped infrastructure: Industrial infrastructure is not yet fully mature.

Agrarian reliance: The economy is predominantly based on the agricultural sector.

Nascent Dual Education: The dual training system is not yet fully institutionalized.

Labor migration: High rates of internal and external labor migration persist.

Result: These factors act as primary determinants limiting the employment rate of vocational graduates in these areas.

In-Depth Analysis: Kashkadarya Region

In the Kashkadarya region, the employment rate of vocational graduates stands at 73.2%. While this is slightly lower than the national average (75.4%), it sits near the threshold of the "moderate employment" group. This position is explained by several systemic factors:

Negative Factors:

Low density of industrial enterprises.

High dependence on the agricultural sector.

Institutional gaps between the vocational education system and the real sector.

Underdeveloped dual education mechanisms.

High rates of youth labor migration.

Positive Tendencies:

Expansion of the network of vocational education institutions.

Gradual development of the service sector.

An increasing number of small business entities.

Activation of state employment programs.

Conclusion: Despite these positive trends, they are currently insufficient to significantly boost regional employment levels. This situation underscores the urgent need to deepen institutional reforms aimed at aligning the vocational education system with local labor market demands.

The conducted analysis reveals a positive statistical correlation between the vocational education system and youth employment. While identified through descriptive statistics, this relationship suggests that regions with higher levels of industrialization consistently report better employment outcomes than predominantly agrarian ones.

However, the strength and specific mechanism of this correlation vary across regions due to differences in economic structure, labor market capacity, and institutional factors. Future research could further quantify these relationships through advanced econometric modeling.

4. Conclusion

The results of this research indicate that the vocational education system in Uzbekistan holds

strategic importance as a vital institutional factor in increasing youth employment. The effectiveness of vocational education is determined not only by the educational process itself but by its level of integration with the labor market and the industrial sector.

Regional analysis revealed significant disparities in the employment rates of vocational graduates across the republic. Higher employment indicators were recorded in highly industrialized regions, while relatively lower results were observed in areas dominated by an agrarian economy. This confirms that regional economic structures directly influence the efficiency of vocational education.

In the case of the Kashkadarya region, while the potential for a vocational education system exists, the primary limiting factor for employment was identified as the insufficient integration with the real sector. This situation underscores the necessity of expanding the dual education system and aligning vocational training with regional economic needs.

In general, modernizing the vocational education system, strengthening the education-production nexus, and accounting for the specific characteristics of regional labor markets are recognized as the primary directions for boosting youth employment. Furthermore, the study suggests that a differentiated regional approach is essential for effective policymaking. In the long term, this approach will contribute to sustainable economic growth and the formation of competitive human capital.

Recommendations

Based on the research findings, the following recommendations are proposed:

Institutional Expansion of the Dual Education System: Implement a widespread practice-oriented teaching system by strengthening cooperation between vocational education institutions and industrial enterprises.

Developing Region-Specific Educational Programs: Tailor vocational training directions to the economic specialization and labor market requirements of each specific province.

Systematic Involvement of Employers in the Educational Process: Engage specialists from private enterprises in the curriculum, while enhancing internship and apprenticeship systems.

Developing Digital Skills in Vocational Fields: Increase the competencies of youth in IT and digital technologies to meet the demands of the modern digital economy.

Implementing a Unified "Career Trajectory" Digital Platform: Create a monitoring system to track the employment status and job placement effectiveness of graduates in real-time.

Supporting Small Businesses and Startups: Expand access to concessional loans and business incubation programs specifically designed for vocational education graduates to start their own enterprises.

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