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PHASE 2
OF SKILLS ANTICIPATION TOOLS
AND PEER LEARNING PROGRAMME IN CENTRAL ASIA

Uzbekistan

Tracer Study

ANALYTICAL REPORT

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Survey name/Title: Tracer Study	
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Glossary of acronyms

DARYA	Dialogue and action for resourceful youth in Central Asia
EPRD	Office for Economic Policy and Regional Development
ETF	European Training Foundation
EU	European Union
ILO	International Labour Organization
MoHESI	Ministry of Higher Education Science and Innovation
TVET	Technical Vocational Education and Training
UZS	Uzbekistan Som
VET	Vocational Education and Training

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Executive Summary

This Pilot Tracer Study was developed in collaboration with the Ministry of Higher Education, Science, and Innovation to regularly evaluate the effectiveness and relevance of Uzbekistan's Vocational Education and Training (VET) system. It does so by collecting and analyzing graduates' perceptions of the VET they received, their short-term employment outcomes, and their assessment of how well their training aligns with labour market demands. As a pilot initiative, the study aimed to establish and test a tailored approach for conducting tracer studies in Uzbekistan. It serves as a foundation for future tracer studies and identifies areas for improving the VET system's responsiveness to labour market needs.

The study, supported by the European Training Foundation's DARYA project, applied a mixed-methods approach, combining online surveys and Computer-Assisted Telephone Interviews (CATI) to gather feedback from graduates of four selected VET institutions: Almalyk Mining and Metallurgical Technical Vocational school, Samarkand City Polytechnic No. 1, Syrdarya District Polytechnic school, and Tashkent Transport Technical Vocational school.

Data was collected in two phases, involving 2023 and 2024 graduates. The second phase of the study, which tracked the career progression of 2024 graduates, provides a comprehensive dataset for assessing the perceived performance of VET programs and the labour market outcomes of graduates. This data set forms the foundation for the findings presented in this report. These insights are intended to demonstrate how tracer studies can help guide policymakers and VET institutions in refining training programs to better meet the evolving needs of the labour market.

Key findings

Findings revealed significant differences in perceived training quality across institutions. The Samarkand City Polytechnic No. 1 had the highest reported effectiveness ratings, with strong teaching quality, experienced instructors, well-structured practical training, and effective career guidance services. In contrast, Almalyk Mining and Metallurgical Technical Vocational school and Tashkent Transport Technical Vocational school received lower ratings due to inconsistent training quality, gaps in teachers' industry experience, and weaker practical orientation in training materials. Limited career guidance and inadequate job placement support in these institutions further impacted graduates' ability to secure relevant employment.

Employment outcomes varied widely among institutions. Samarkand City Polytechnic No. 1 graduates had the highest full-time employment rate at 94.8 percent, while Tashkent Transport Technical Vocational school had the lowest at just 18.3 percent. While some graduates continued with higher education after graduation, some graduates struggled to find jobs directly related to their qualifications, often prioritizing income, job stability, and work-life balance over working in their trained profession.

Gender differences in employment choices were notable. Male graduates were more likely to take on temporary or seasonal jobs, whereas female graduates prioritized job location, flexible schedules, and family considerations. Women were also more likely to accept lower-paying positions in exchange for job stability and work-life balance.

The findings also highlight wage disparities, with many technical graduates earning less than 1 million UZS per month, well below the 2024 national average of 5.357 million UZS[1]. Graduates in fields such as welding, car repair, and metallurgy reported the lowest wages, whereas those specializing in equipment installation and maintenance of modern technology had higher earning potential, with some exceeding 7 million UZS per month. This suggests that an oversupply of graduates in traditional VET fields and skill mismatches contribute to lower wages, while strong demand for specialized technical support drives higher earnings.

The preference for local employment was another key finding, as graduates largely sought jobs within their training regions. This highlights the importance of aligning VET programs with local labour demands to ensure better employment opportunities.

The study also found that 42.9 percent of graduates felt overqualified for their jobs, often due to working in roles not aligned with their qualifications underutilizing the skills acquired. Additionally, some graduates require skill upgrades, particularly in sectors undergoing technological transformations. Tashkent Transport Technical Vocational school reported the lowest skills alignment (22.9 per cent), with many graduates identifying major skill shortages, pointing to outdated curricula that need urgent revisions.

Regarding future aspirations, a significant portion of graduates expressed a desire for career advancement. The most common goal was to change employers, with 31.5 percent of male and 22.3 percent of female graduates seeking better positions or improved working conditions. This suggests that while many VET graduates secure jobs, they remain dissatisfied with their career progression opportunities, wages, or work environments.

Key recommendations

Stronger career guidance and job placement services should be implemented to support graduates in securing relevant employment. The alignment between VET curricula and labour market demands must be strengthened, with a particular focus on emerging digital and technical skills that offer better employment opportunities. Expanding partnerships between VET institutions and employers will help create more internship and job placement opportunities, reducing skill mismatches. Addressing wage disparities is also critical to ensuring that VET graduates can secure financially sustainable careers. Finally, Tracer Studies should be institutionalized as an ongoing tool to assess and improve VET effectiveness, allowing for continuous adjustments based on labour market needs.

[1] See: https://kun.uz/en/news/2025/01/29/statistics-agency-reveals-average-monthly-salaries-by-region-and-sector-in-uzbekistan.

1. Introduction

1.1. Background

This Pilot Tracer Study equipped the Ministry of Higher Education Science and Innovation[2], along with key stakeholders, with the tools and insights needed to assess the effectiveness of VET programs in preparing graduates for the labour market. Designed using best practices and international standards, the study highlights the value of data-driven decision-making to enhance VET governance and performance.

Conducted in collaboration with local partners and supported by the European Training Foundation's (ETF) DARYA project[3], the study collected comprehensive data on graduates' perspectives regarding VET performance, labour market integration and the relevance of their acquired skills to their current roles. By analysing graduates' feedback, the study demonstrates how Tracer studies can guide VET institutions in improving program performance and ensuring better alignment with labour market needs.

The findings presented are intended for policymakers and VET institutions, identifying areas where VET programs are performing well and where further development is needed. By providing evidence of VET's current strengths and challenges, the study helps stakeholders understand where adjustments might be necessary to ensure that VET programs are aligned with the rapidly evolving demands of Uzbekistan's labour market. Ultimately, this analysis supports efforts to create a more agile, market-driven VET system, ensuring that future graduates are well-equipped to succeed in their chosen fields.

1.2. Analytical objectives and scope

The analytical objectives of this Pilot Tracer Study are designed to provide an in-depth evaluation of Uzbekistan's Vocational Education and Training (VET) programs based on graduates' experiences and outcomes. The study focuses on the following key areas:

1. VET Program Quality: Evaluating graduates' perspectives on the quality and effectiveness of the VET programs, including aspects such as, teaching methods and job search support
2. Labour Market Integration: Assess the alignment of their VET training with their current job roles, and the applicability of the skills learned during training.
3. Skills Relevance: Gathering insights into graduates' perception on the relevance of acquired skills to their current employment and professional development.

1.3. Structure of the report

This report is organized to provide an overview of the Pilot Tracer Study's findings and their implications for the development of VET in Uzbekistan. Section 2 briefly outlines the survey design and implementation methodology, with a more detailed explanation provided in a separate technical report. Section 3 presents the data and offers a descriptive analysis of the effectiveness and relevance of VET programs, incorporating the interpretation of key findings within the broader context of labour

2 Ministry of Higher Education Science and Innovations of the Republic of Uzbekistan: https://www.edu.uz/uz#gsc.tab=0
3 See: https://www.etf.europa.eu/en/what-we-do/darya-dialogue-and-action-resourceful-youth-central-asia

market transformations. Section 4 provides recommendations based on the study's results, offering both policy-level suggestions and practical actions for stakeholders. Finally, Section 5 concludes.

2. Survey design and methodology (brief summary)[4]

2.1. Survey design

The design process for the Pilot VET Tracer Study began with consultations among key stakeholders, which culminated in the development of a detailed Action Plan and Research Plan. These documents outlined the objectives, methodology, sampling strategies, and data collection methods for the study. A dedicated Working Group was established to oversee the survey's design and execution. ETF experts facilitated capacity-building workshops for stakeholders and VET school staff, focusing on methodological principles, survey execution, and practical training on the online questionnaire hosted on SurveyMonkey[5], an online survey platform. Further, a total of 27 interviewers received training through both online and offline sessions.

2.2. Methodology

Overall, the Pilot Tracer Study aimed to develop and test a national tracer study methodology that could be replicated, adhering to international standards and best practices[6]. Additionally, it sought to establish the processes and capacities needed for a sustainable national tracer study system that would inform labour market-responsive and effective Vocational Education and Training (VET) for the years to come. The tracer survey methodology is designed to assess the quality of VET programs by evaluating their effectiveness and relevance through graduate interviews.

The Pilot Tracer Study focused on graduates from 2023 and 2024 from four selected VET institutions: Almalyk Mining and Metallurgical Technical Vocational school, the Samarkand City Polytechnic No. 1, the Syrdarya District Polytechnic school, and Tashkent Transport Technical Vocational school. These institutions were selected to represent a broad range of VET qualifications across different regions and to facilitate the formation of a large cohort of graduates for interviews within a limited budget. The total sample included 2,974 graduates, with 1,528 from 2023 and 1,446 from 2024.

A census approach was applied, where all graduates from the selected schools were contacted. The study design included a cross-sectional survey of 2023 and 2024 graduates, primarily to test both a long and short questionnaire as well as the implementation process, along with a longitudinal panel survey design to track the labour market entry and performance of 2024 graduates after graduation. The panel survey design aims to facilitate the tracking of the same individuals over time in the future. However, in the pilot, we only tracked 2024 graduates 6 months after graduation. By enabling the tracking of graduates beyond graduation, the panel survey design allows to gain a much deeper understanding of career progression and labour market integration among VET graduates.

4 The detailed methodology and implementation steps of the survey are provided in a separate technical report for the Tracer Study.
5 See: https://www.surveymonkey.com/
6 European Training Foundation.2026. Carrying out tracer studies - Guide to anticipating and matching skills and jobs Vol. 6
https://www.etf.europa.eu/en/publications-and-resources/publications/carrying-out-tracer-studies-guide-anticipating-and-matching

Data collection followed a mixed-mode approach, combining online surveys and Computer-Assisted Telephone Interviews (CATI) to maximize participation. While online surveys were cost-effective and widely accessible through email and Telegram, CATI was used to address the low response rates typically associated with digital surveys.

Graduates received an invitation letter and consent form explaining the purpose of the survey and ensuring confidentiality. SurveyMonkey was used to facilitate online responses in both Uzbek and Russian. Additionally, trained interviewers have conducted telephone interviews following standardized guidelines. Challenges such as outdated contact details, limited email usage, and labour migration impacted participation. However, the combination of online surveys and CATI significantly improved engagement, particularly among 2024 alumni.

2.3. Survey implementation and response rates

The survey was implemented in two phases for alumni from 2023 and 2024. Phase 1, conducted from June to September 2024, involved 2023 alumni completing the long questionnaire, including a section on initial employment outcomes, while 2024 alumni completed a shorter version excluding employment-related questions. Data collection for 2023 alumni achieved a 22 per cent response rate. For 2024 alumni, the response rate was 35 per cent, with Telegram being the most effective contact method. Phase 1 served purely as a testing phase for contact verification, survey link distribution, response monitoring, follow-up interview procedures, and questionnaire testing, allowing for adjustments in the data collection process and the questionnaire.

Phase 2, conducted in November–December 2024, surveyed again 2024 alumni using the refined long questionnaire. This phase achieved a 73 per cent response rate. Data collection was closely monitored by ETF's technical lead to resolve issues in real-time.

This report focuses on the analysis of second-phase data from 2024 graduates collected in December 2024, which achieved the highest response and completion rates, providing the most comprehensive information. It is based on the refined long questionnaire, enabling the most thorough and accurate assessment of the effectiveness and relevance of the VET programs.

2.4. Profile of graduates

2.4.1. Demographic profile

Table 1 presents the demographic profile of graduates from the second phase of the Pilot Tracer Study, focusing on age, gender distribution, and educational institutions attended. Among the 1,056 respondents, 738 are male and 318 are female. Most graduates were at the time of the interview 18 years old, with 348 individuals in this age group, followed by 19-year-olds (192) and 20-year-olds (223). The number of graduates decreases progressively in older age groups, with only 52 individuals aged 25 or older. (Table 1)

Regarding educational institutions, the largest share of graduates (32.6 per cent) comes from the Samarkand City Polytechnic No. 1, followed by the Syrdarya District Polytechnic school (26.3 per cent) and the Almalyk Mining and Metallurgical Technical Vocational school (22.0 per cent). The smallest proportion of graduates (19.1 per cent) attended the Tashkent Transport Technical Vocational school. These figures indicate a broad distribution of graduates across vocational education institutions. (Table 1)

Table 1 – Profile of interviewed graduates (phase 2)

Age of respondent by gender	Male	Female	Total
17	6	1	7
18	247	101	348
19	116	76	192
20	179	44	223
21	80	33	113
22	48	19	67
23	20	5	25
24	22	7	29
25+	20	32	52
Total	738	318	1056
Educational institution graduated from			
	Freq.	Percent	Cum.
Almalyk Mining and Metallurgical Technical Vocational school	232	22.0	22.0
Samarkand City Polytechnic No. 1	344	32.6	54.6
Syrdarya District Polytechnic school	278	26.3	80.9
Tashkent Transport Technical Vocational school	202	19.1	100.0
Total	1,056	100.0	

Source: Pilot Tracer Study Kazakhstan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

The vocational qualifications of interviewed graduates from different VET schools, presented in Table 2, highlight the distribution of students across various fields of study. Graduates' vocational qualifications vary greatly by institution, reflecting different technical and sectoral orientations of VET.

At Almalyk Mining and Metallurgical Technical Vocational school, the largest shares of interviewed graduates specialized in welding and mineral exploration equipment and technology (both 11.6 per cent), followed by electrical repair and maintenance (10.8 per cent) and crushing and screening of minerals (10.3 per cent), with smaller numbers in metallurgy, car repair, and geology. (Table 2)

The Samarkand City Polytechnic No. 1 saw the highest graduate proportion in car engine diagnostics and repair (23.3 per cent), followed by computer graphics and design (20.4 per cent) and hairdressing (13.1 per cent), with fewer graduates trained as welders, cashiers, and in banking. (Table 2)

At the Syrdarya District Polytechnic school, car engine diagnostics (25.1 per cent), digital information processing (21.9 per cent), and seam stressing (15.1 per cent) dominated, alongside smaller shares in electrical work, welding, wine production. (Table 2)

The Tashkent Transport Technical Vocational school focused on railway-related fields, with the highest concentrations in electrification and power supply (14.8 per cent) and customer service (14.8 per cent), followed by accounting, automation, and locomotive maintenance. (Table 2)

While the distribution of qualifications offered reflects the historical role of VET schools in serving different sectors and regions, the analysis of employment outcomes presented in this report will provide valuable insights to guide future course offerings and curricula. By assessing how different qualifications translate into employment opportunities, the data can also support graduates in better navigating fast evolving labour markets.

Table 2 – Vocational qualifications of interviewed graduates by VET School

Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	Freq.	Percent	Cum.
Car repair mechanic	19	8.2	8.2
Welder (electric welding)	27	11.6	19.8
Turner	15	6.5	26.3
Locksmith	2	0.9	27.2
Repair of power plants and electrical equipment	12	5.2	32.3
Electrician for repair and maintenance of electrical equipment	25	10.8	43.1
Assistant locomotive driver	14	6.0	49.1
Preparation of mineral resources for enrichment	15	6.5	55.6
Installation of technological equipment (by industry)	5	2.2	57.8
Metallurgical crane operator	14	6.0	63.8
Metallurgy of non-ferrous metals	21	9.1	72.8
Geology	12	5.2	78.0
Equipment and technology for mineral exploration	27	11.6	89.7
Crushing and screening of minerals	24	10.3	100.0
Total	232	100.0	
Samarkand City Polytechnic No. 1	Freq.	Percent	Cum.
Seamstress	36	10.5	10.5
Computer graphics and design operator	70	20.4	30.8
Seller, controller-cashier	23	6.7	37.5
Hairdresser (fashion designer)	45	13.1	50.6
Car mechanic	24	7.0	57.6
Diagnostics and repair of car engines	80	23.3	80.8
Master of operation and installation of sewage and water supply	23	6.7	87.5
Welder (electric-gas welding)	22	6.4	93.9
Banking supervision	21	6.1	100.0
Total	344	100.0	
Syrdarya District Polytechnic school	Freq.	Percent	Cum.
Diagnostics and repair of car engines	70	25.1	25.1
Turner	28	10.0	35.1
Welder (gas-electric welding)	29	10.4	45.5
Electrician	8	2.9	48.4
Master of digital information processing	61	21.9	70.3
Seamstress	42	15.1	85.3
Salesperson, cashier-controller	22	7.9	93.2
Wine production operator	19	6.8	100.0
Total	279	100.0	
Tashkent Transport Technical Vocational school	Freq.	Percent	Cum.
Accounting and auditing	25	12.3	12.3
Electrification and power supply in railway transport	30	14.8	27.1
Automation and tele-mechanics in railway transport	16	7.9	35.0
Organization and traffic management	15	7.4	42.4

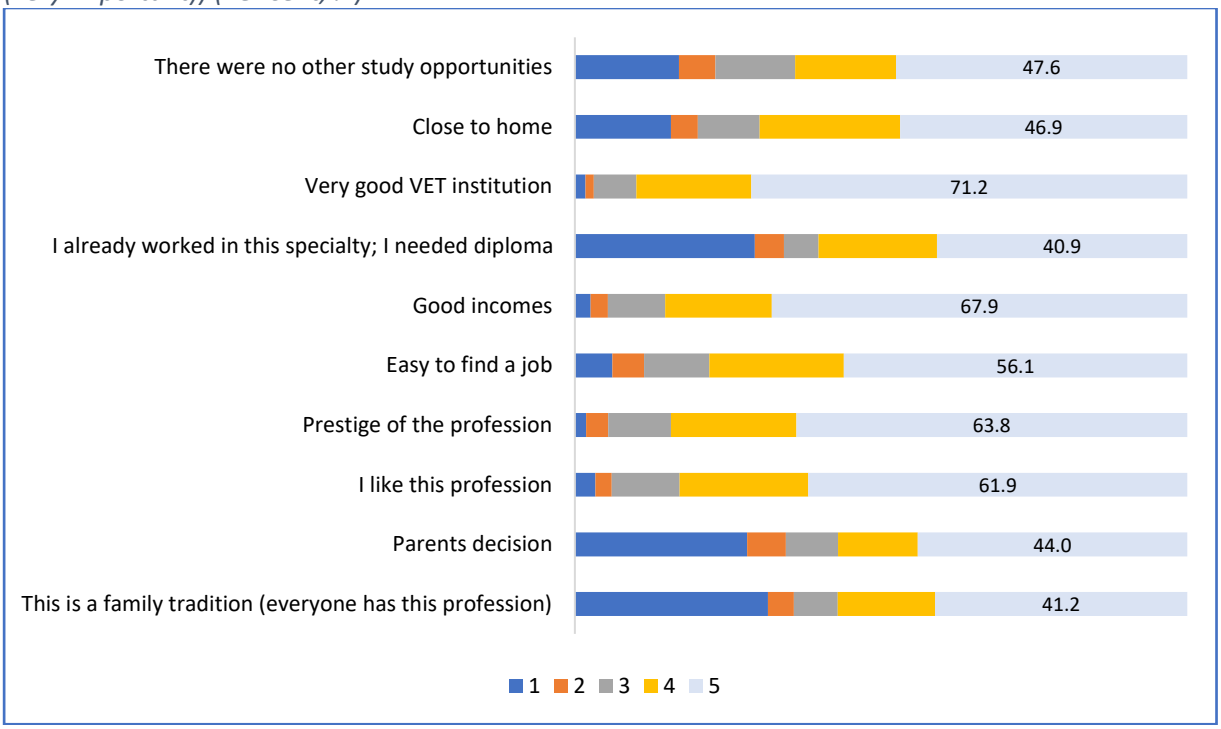
Maintenance of railway bridges and tunnels	15	7.4	49.8
Maintenance and repair of locomotives	16	7.9	57.6
Maintenance and repair of railway cars	16	7.9	65.5
Maintenance of radio communication systems in railway transport	11	5.4	70.9
Maintenance of wired communication systems in railway transport	10	4.9	75.9
Electronic systems and equipment in in railway transport	7	3.5	79.3
Construction of railways, track and track facilities	12	5.9	85.2
Customer service in railway transport	30	14.8	100.0
Total	203	100.0	

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

2.4.2. Reasons for choosing VET schools and qualifications

Figure 1 reveals that the primary reason for choosing to study a particular course at a VET institution is the institution's reputation, with 71.2 percent of respondents considering it very important. This is followed by the potential for earning a good income (67.9 percent), the profession's prestige (63.8 percent), and personal interest in the profession (61.9 percent). While factors such as family influence (44.0 percent), job availability (47.6 percent), and proximity to home (46.9 percent) also play a role, they are less influential than financial and professional motivations. Therefore, VET policies should focus on enhancing the effectiveness of training and the employability of graduates, ensuring that VET programs align with students' career aspirations and financial goals. (Figure 1)

Figure 1 – Reasons for choosing VET school and qualifications (Rate on a scale 1 (not important) to 5 (very important)) (Per cent, %)



Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

2.4.3. Internship and work exposure

The analysis of Table 3 highlights that internships are common across all institutions and courses that participated in the Pilot Tracer, with the Samarkand City Polytechnic No. 1 having the highest rate (85.2 per cent) and Almalyk Mining and Metallurgical Technical Vocational school the lowest (68.1 per cent). Overall, 78.4 per cent of students completed an internship. Internships play a crucial role in helping students gain practical experience, develop sector-specific skills, and improve their employability upon graduation. Additionally, some programs follow a dual education model[7], where students combine classroom learning with on-the-job training, meaning they work while studying as part of their curriculum. This structured approach ensures that students not only gain theoretical knowledge but also acquire hands-on experience directly related to their field. (Table 3)

Table 3– Internship and work exposure during the VET studies (Per cent, %)

Educational Institution graduated from			
Internship during the study	Yes	No	Total
Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	68.1	31.9	100.0
Samarkand City Polytechnic No. 1	85.2	14.8	100.0
Syrdarya District Polytechnic school	77.0	23.0	100.0
Tashkent Transport Technical Vocational school	80.7	19.3	100.0
Total	78.4	21.6	100.0
Working during the study	Yes	No	Total
Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	50.0	50.0	100.0
Samarkand City Polytechnic No. 1	54.9	45.1	100.0
Syrdarya District Polytechnic school	40.3	59.7	100.0
Tashkent Transport Technical Vocational school	39.1	60.9	100.0
Total	47.0	53.0	100.0
Working the same profession than study	Yes	No	Total
Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	92.2	7.8	100.0
Samarkand City Polytechnic No. 1	98.4	1.6	100.0
Syrdarya District Polytechnic school	92.9	7.1	100.0
Tashkent Transport Technical Vocational school	45.6	54.4	100.0
Total	87.3	12.7	100.0

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

Working during studies is more common at Samarkand City Polytechnic No. 1 (54.9 per cent) and Almalyk Technical Vocational school (50.0 per cent) while Tashkent Transport Technical Vocational school has a lower rate (39.1 per cent). In total, 47.0 per cent of students worked while studying, highlighting the significant role of work-based learning in preparing graduates for the labour market. (Table 3)

However, at Tashkent Transport Technical Vocational school, a notable 54.4 per cent of students worked during their studies in fields unrelated to their chosen profession. This contrasts with other

7 See: https://www.etf.europa.eu/en/news-and-events/news/30-years-30-stories-uzbekistan-focuses-regional-cooperation-and-hosts-high

institutions, where over 90 per cent of students working while studying, were employed in roles related to their field of study. A possible explanation for this trend could be that while students at Tashkent Transport Technical Vocational school still need to work to afford their training, the specialized nature of the railway transport sector offers fewer part-time job opportunities directly related to their field of studies. As a result, students may be more likely to take up employment in other sectors where part-time positions are more readily available. (Table 3)

3. Data presentation and descriptive analysis

3.1. Effectiveness of VET delivery

Assessing the effectiveness of vocational education and training (VET) programs is essential to ensuring that they equip graduates with the skills and knowledge needed for successful labour market integration. This section examines the feedback provided by graduates on the training conditions and the quality of training they received in their respective vocational institutions. Table 4 below summarizes the graduates' perceptions of the general level and quality of training in their chosen fields across four major institutions.

3.1.1. Overall VET effectiveness by VET schools and qualification

Overall, the data shows there is a general trend towards high levels of satisfaction, with most graduates rating their training highly (scores of 4 or 5). However, notable differences exist between institutions and qualifications, which may indicate areas of strength as well as areas needing improvement.

In Almalyk Mining and Metallurgical Technical Vocational school, the data shows that “Locksmith” and “Installation of technological equipment (by industry)” received the highest satisfaction, with 100 per cent of respondents rating them at level 5. In contrast, “Repair of power plants and electrical equipment” received also ratings at the lowest satisfaction level, with 8.3 per cent rating it a 1, and Crushing and screening of minerals also had lower ratings, with 16.7 per cent giving it a 1 or 3. Most other qualifications received relatively high satisfaction, with many scoring over 80 per cent at level 4 or 5. The total satisfaction score for this institution shows that 69 per cent of respondents rated the training at level 5. (Table 4)

Table 4– Graduates’ perceptions of overall quality of training in their chosen qualifications across institutions. (Rate on a scale 1 (completely disagree) to 5 (fully agree)) (Per cent, %)

Qualifications - Almalyk Mining and Metallurgical Technical Vocational school	Level of quality of training in general (%)					
	1	**2**	**3**	**4**	**5**	**Total**
Car repair mechanic	5.3	0.0	5.3	31.6	57.9	100.0
Welder (electric welding)	0.0	0.0	7.4	59.3	33.3	100.0
Turner	0.0	0.0	13.3	6.7	80.0	100.0
Locksmith	0.0	0.0	0.0	0.0	100.0	100.0
Repair of power plants and electrical equipment	8.3	0.0	0.0	0.0	91.7	100.0
Electrician for repair and maintenance of electrical equipment	0.0	0.0	20.0	20.0	60.0	100.0
Assistant locomotive driver	0.0	0.0	0.0	7.1	92.9	100.0
Preparation of mineral resources for enrichment	0.0	0.0	0.0	20.0	80.0	100.0
Installation of technological equipment (by industry)	0.0	0.0	0.0	0.0	100.0	100.0
Metallurgical crane operator	0.0	0.0	0.0	14.3	85.7	100.0
Metallurgy of non-ferrous metals	0.0	0.0	0.0	14.3	85.7	100.0

Geology	0.0	8.3	0.0	75.0	16.7	100.0
Equipment and technology for mineral exploration.	7.4	0.0	0.0	0.0	92.6	100.0
Crushing and screening of minerals	4.2	0.0	12.5	29.2	54.2	100.0
Total	2.2	0.4	5.6	22.8	69.0	100.0
Qualifications - Samarkand City Polytechnic No. 1	Level of quality of training in general (%)					
	1	**2**	**3**	**4**	**5**	**Total**
Seamstress	0.0	0.0	0.0	0.0	100.0	100.0
Computer graphics and design operator	0.0	2.9	0.0	4.3	92.9	100.0
Seller, controller-cashier	0.0	0.0	0.0	0.0	100.0	100.0
Hairdresser (fashion designer)	0.0	0.0	0.0	2.2	97.8	100.0
Car mechanic	0.0	0.0	0.0	0.0	100.0	100.0
Diagnostics and repair of car engines	0.0	0.0	0.0	0.0	100.0	100.0
Master of operation and installation of sewage and water supply	0.0	0.0	0.0	0.0	100.0	100.0
Welder (electric-gas welding)	0.0	0.0	0.0	0.0	100.0	100.0
Banking supervision	0.0	0.0	0.0	0.0	100.0	100.0
Total	0.0	0.6	0.0	1.2	98.3	100.0
Qualifications -Syrdarya District Polytechnic school	Level of quality of training in general (%)					
	1	**2**	**3**	**4**	**5**	**Total**
Diagnostics and repair mechanics	0.0	2.9	34.3	35.7	27.1	100.0
Turner	0.0	0.0	21.4	10.7	67.9	100.0
Welder (gas-electric welding)	0.0	0.0	27.6	27.6	44.8	100.0
Electrician	0.0	12.5	50.0	37.5	0.0	100.0
Master of Digital Information Processing	0.0	0.0	0.0	95.1	4.9	100.0
Seamstress	0.0	0.0	0.0	11.9	88.1	100.0
Salesperson, cashier-	0.0	0.0	4.5	4.5	90.9	100.0
Wine production operator	0.0	0.0	0.0	5.3	94.7	100.0
Total	0.0	1.1	15.4	37.3	46.2	100.0
Qualifications - Tashkent Transport Technical Vocational school	Level of quality of training in general (%)					
	1	**2**	**3**	**4**	**5**	**Total**
Accounting and auditing	0.0	4.0	8.0	12.0	76.0	100.0
Electrification and power supply in railway transport	0.0	0.0	0.0	3.3	96.7	100.0
Automation and tele-mechanics in railway transport	12.5	0.0	12.5	31.3	43.8	100.0
Organization of paramilitary security in railway transport	0.0	0.0	0.0	6.7	93.3	100.0
Maintenance of railway bridges and tunnels.	0.0	0.0	0.0	0.0	100.0	100.0
Maintenance and repair of locomotive	0.0	0.0	0.0	0.0	100.0	100.0
Maintenance and repair of railway cars	0.0	0.0	0.0	0.0	100.0	100.0
Maintenance of radio communication systems in railway transport	0.0	0.0	0.0	81.8	18.2	100.0
Maintenance of wired communication systems in railway transport	0.0	0.0	30.0	70.0	0.0	100.0
Electronic systems and equipment in railway transport	0.0	0.0	14.3	42.9	42.9	100.0
Construction of railways, track and track facilities	0.0	0.0	0.0	16.7	83.3	100.0
Customer service in railway transport	3.3	16.7	13.3	6.7	60.0	100.0
Total	1.5	3.0	5.9	16.3	73.4	100.0

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

The Samarkand City Polytechnic No. 1 also displayed high ratings for most qualifications. Graduates from seven out of ten qualifications giving it the highest ratings (5) with a perfect 100 per cent. The overall quality rating for this institution shows 98.3 per cent, reflecting a strong perception of the quality of training among graduates. (Table 4)

At the Syrdarya District Polytechnic school, one could observe the most varied distribution of responses. While qualifications like "Wine production operator" and "Salesperson cashier" had a large proportion of graduates rating the training as excellent (5), most had a more mixed response. The total ratings for this institution show that most graduates rated the training less than perfect (level 5), with a significant percentage (16.5 per cent) rating it at level 3 or lower, indicating some room for improvement in the general quality of training provided. (Table 4)

Tashkent Transport Technical Vocational school exhibited a diverse range of ratings, with qualifications such as "Maintenance of railway bridges and tunnels", "Maintenance and repair of locomotives" and “Maintenance and repair of railway cars” receiving perfect ratings of 100 per cent in the highest category. However, some qualifications, like "Customer service in railway transport" and "Automation and tele-mechanics in railway transport," had more variation in responses, including a significant portion of graduates rating the training at level 3 or lower. The total response shows that 73.4 per cent of graduates rated their training at level 5, but many lower percentages were distributed across levels 1 and 2. (Table 4)

These differences in satisfaction levels across institutions and qualifications may stem from various factors, including the resources available to each institution, such as infrastructure, facilities, equipment, and teaching staff.

3.1.2. Graduates’ perceptions of the quality of VET training provision across institutions

The analysis of VET quality aspects across different institutions, as presented in Table 5, highlights distinct variations in graduate satisfaction across institutions. Some institutions consistently receive high ratings across VET quality aspects, others show limitations, particularly in employment and internship support.

For the acquisition of **knowledge and skills necessary for their qualification**, the Samarkand City Polytechnic No. 1 stands out, with an overwhelming 97.7 per cent of graduates rating it at level 5. The Almalyk Mining and Metallurgical Technical Vocational school (68.1 per cent) and the Tashkent Transport Technical Vocational school (62.4 per cent) also performed well. In contrast, the Syrdarya District Polytechnic school had lower satisfaction, with only 45.0 per cent rating it a 5. (Table 5)

When evaluating whether training courses meet the latest **practical requirements**, the Samarkand City Polytechnic No. 1 again excels, with 98.3 per cent of graduates rating it highly (levels 4 and 5) followed by Almalyk Mining and Metallurgical Technical Vocational school (91.4 per cent) and The Syrdarya District Polytechnic school (91.4 per cent). Tashkent Transport Technical Vocational school had a more mixed response, with 15.3 per cent rating the courses less favorable. (Table 5)

In terms of the **practical experience of teachers**, the Samarkand City Polytechnic No. 1 again leads, with 98.3 per cent of graduates highly rating their teachers’ practical expertise. The Tashkent Transport Technical Vocational school (69.8 per cent) also performed relatively well, though Almalyk Mining and

Metallurgical Technical Vocational school (17.2 per cent) had more varied feedback, with some students rating the practical experience lower. (Table 5)

The **practical orientation of educational materials content** shows a similar trend. The Samarkand City Polytechnic No. 1 excels once again, with 97.7 per cent of graduates giving high ratings. Almalyk Mining and Metallurgical Technical Vocational school (66.4 per cent) follows closely behind, while Syrdarya District Polytechnic school (68.0 per cent) and the Tashkent Transport Technical Vocational school (60.4 per cent) received more mixed feedback. (Table 5)

The most significant discrepancy is seen in the level of support provided for **employment and job searches**. The Samarkand City Polytechnic No. 1 received near-universal approval, with 97.7 per cent of graduates rating it highly. In stark contrast, Tashkent Transport Technical Vocational school received the lowest satisfaction in this aspect, with 30.7 per cent rating the support as level 1, highlighting significant dissatisfaction. Almalyk Mining and Metallurgical Technical Vocational school (67.7 per cent, level 5) and the Syrdarya District Polytechnic school (46.8 per cent, level 5) performed moderately well. (Table 5)

Similar patterns emerged **for internship placement support**. The Samarkand City Polytechnic No. 1 again performed exceptionally well, with 97.7 per cent of graduates giving high ratings. Almalyk Mining and Metallurgical Technical Vocational school (70.3 per cent) and the Syrdarya District Polytechnic school (62.6 per cent) had more positive feedback, while Tashkent Transport Technical Vocational school received again the lowest satisfaction, with 11.9 per cent rating it level 1. (Table 5)

Table 5– Graduates' perceptions of various VET quality aspects across institutions (on a scale 1 (completely disagree) to 5 (fully agree)) (Per cent, %)

	1	2	3	4	5	Total
At the educational institution I received all the knowledge and skills necessary to work in my qualification						
Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	2.6	0.9	6.5	22.0	68.1	100.0
Samarkand City Polytechnic No. 1	0.3	0.6	0.9	0.6	97.7	100.0
Syrdarya District Polytechnic school	0.0	0.0	12.9	42.1	45.0	100.0
Tashkent Transport Technical Vocational school	3.0	2.5	14.9	17.3	62.4	100.0
Total	1.2	0.9	8.0	19.4	70.5	100.0
Training courses meet the latest practical requirements						
Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	1.3	0.4	6.9	20.3	71.1	100.0
Samarkand City Polytechnic No. 1	0.3	0.0	1.5	0.3	98.0	100.0
Syrdarya District Polytechnic school	0.0	0.7	7.9	27.7	63.7	100.0
Tashkent Transport Technical Vocational school	2.0	2.0	14.9	19.8	61.4	100.0
Total	0.8	0.7	6.9	15.6	76.0	100.0
The practical experience of teachers is high						
Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	1.7	0.4	6.9	17.2	0.0	100.0
Samarkand City Polytechnic No. 1	0.0	0.0	1.2	0.6	98.3	100.0
Syrdarya District Polytechnic school	0.0	0.0	5.4	48.2	46.4	100.0
Tashkent Transport Technical Vocational school	0.5	1.0	7.4	21.3	69.8	100.0

Total	0.5	0.3	4.7	20.7	73.8	100.0
The content of the educational material is practically oriented						
Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	1.7	2.2	7.8	22.0	66.4	100.0
Samarkand City Polytechnic No. 1	0.0	0.3	0.6	1.5	97.7	100.0
Syrdarya District Polytechnic school	0.0	0.7	5.0	26.3	68.0	100.0
Tashkent Transport Technical Vocational school	2.0	1.5	10.4	25.7	60.4	100.0
Total	0.8	1.0	5.2	17.1	75.9	100.0
The educational institution helped with employment/ job search						
Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	4.3	0.4	9.1	18.5	67.7	100.0
Samarkand City Polytechnic No. 1	0.6	0.3	0.3	1.2	97.7	100.0
Syrdarya District Polytechnic school	0.0	0.0	6.8	46.4	46.8	100.0
Tashkent Transport Technical Vocational school	30.7	7.9	11.9	13.4	36.1	100.0
Total	7.0	1.7	6.2	19.2	65.9	100.0
The educational institution helped in finding internships						
Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	1.7	0.9	7.3	19.8	70.3	100.0
Samarkand City Polytechnic No. 1	0.3	0.0	0.9	1.2	97.7	100.0
Syrdarya District Polytechnic school	0.0	0.4	5.4	31.7	62.6	100.0
Tashkent Transport Technical Vocational school	11.9	4.5	11.4	10.4	61.9	100.0
Total	2.7	1.1	5.5	15.1	75.6	100.0

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

The findings highlight that while the Samarkand City Polytechnic No. 1 consistently received high ratings across most aspects, including knowledge acquisition, practical experience, and employment and internship support, other institutions showed mixed results, with generally lower ratings, particularly in employment-related support. These findings underscore the importance of addressing weaknesses in career guidance to enhance VET effectiveness overall.

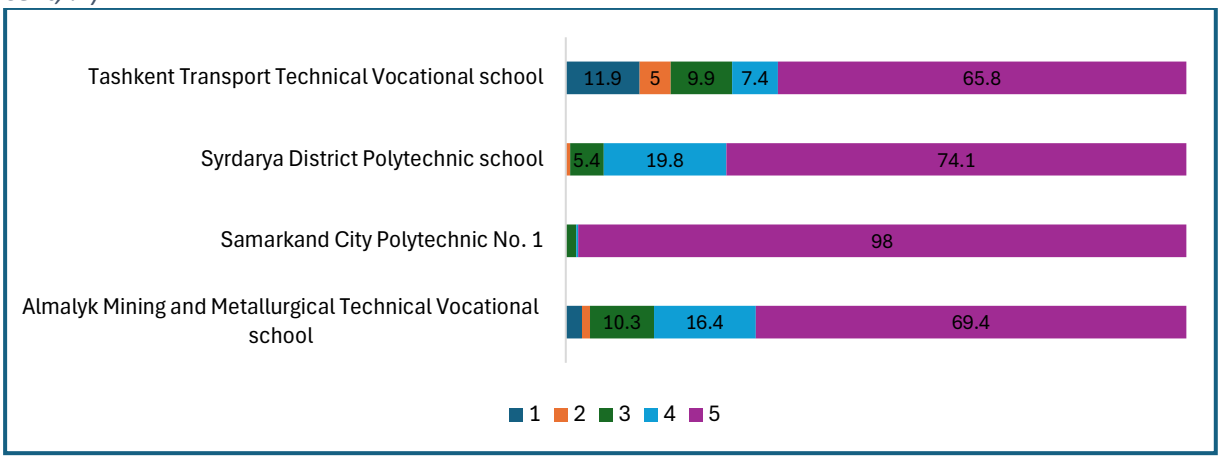
3.1.3. Likelihood of choosing the same VET institution again

The likelihood of graduates choosing the same educational institution again also varies significantly across VET schools. Samarkand City Polytechnic No. 1 had the highest approval rates, with 98 per cent of graduates willing to return. Syrdarya District Polytechnic school also received strong support, with 74.1 per cent of graduates expressing a similar preference. In contrast, Almalyk Mining and Metallurgical Technical Vocational school showed mixed responses, with 69.4 per cent willing to choose the same school again, but 2.6 per cent (rank 1) and 1.3 per cent (rank 2) indicating some degree of dissatisfaction. Tashkent Transport Technical Vocational school had the highest level of reconsideration, with almost a third (26.8 per cent) of graduates less likely to choose the institution again.

VET approval rates are crucial for understanding how well an institution is performing in meeting the needs of its students. High approval rates, as seen with the Samarkand City Polytechnic No. 1 and Syrdarya, suggest that these institutions are more successful in providing education that aligns with students' expectations, thereby fostering a positive reputation that can attract future students. In

contrast, institutions like Almalyk Mining and Metallurgical Technical Vocational school and Tashkent Transport Technical Vocational school may need to examine specific aspects of their programs, such as curriculum relevance, teaching quality, student support services, and career guidance, in order to enhance approval rates and improve overall student satisfaction. Addressing these gaps is essential not only to boost approval rates but also to ensure the long-term viability and success of VET institutions. (Figure 2)

Figure 2 – Likelihood of choosing VET school again (Rate on a scale 1 (not likely) to 5 (very likely) (Per cent, %)



Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

3.2. Labour Market integration of graduates

To assess how well vocational education and training (VET) equips graduates with the skills needed for successful labour market integration, this section analyzes both the quantity and quality of their employment outcomes shortly after graduation. Evaluating labour market integration is crucial in determining whether graduates can secure relevant jobs, effectively apply their skills, and contribute productively to the country's economic performance. Understanding these aspects provides valuable insights into how well VET programs align with labour market demands and broader economic needs.

3.2.1. Economic activity status of interviewed graduates

Table 6 provides a comprehensive overview of the economic activity status of graduates from four VET institutions six months after graduation. It details various statuses, including full- and part-time employment, self-employment, temporary or seasonal work, internships, further education, and other conditions such as military service or active job search, illustrating the diverse pathways graduates pursue immediately after completing their studies.

Analyzing these outcomes not only highlights the extent to which VET programs align with graduate aspirations and labour market needs but also provides insights into the broader capacity of the labour market to absorb these graduates. Labour force outcomes are shaped by a complex interplay of factors, including the availability of employment opportunities, working conditions, the relevance of acquired skills to market demands, and broader economic and regional labour market dynamics.

This initial analysis lays the groundwork for a deeper exploration of how well VET programs prepare graduates for employment and may help inform strategies to enhance the overall impact and relevance of vocational training initiatives.

The data reveal that the labour force status of graduates six months after completing their studies varies significantly across institutions. For example, the Samarkand City Polytechnic No. 1 shows the highest full employment rate at 94.8 per cent, while the Tashkent Transport Technical Vocational school reports the lowest at 18.3 per cent, with a substantial 23.8 per cent of its graduates still searching for jobs. In contrast, Almalyk Mining and Metallurgical Technical Vocational school and the Syrdarya District Polytechnic school fall in between, with full employment rates of 36.2 per cent and 45.3 per cent, respectively, accompanied by differing levels of part-time and self-employment. (Table 6)

Table 6 – Economic activity status of graduates 6 month after graduation (Per cent, %)

Labour force status 6 months after graduation	Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	Samarkand City Polytechnic No. 1	Syrdarya District Polytechnic school	Tashkent Transport Technical Vocational school
Full employment	36.2	94.8	45.3	18.3
Part-time employment	3.4	0.9	12.9	12.4
Self-employed/freelancer	3.4	0.6	4.0	2.5
Temporary work / seasonal work	7.8	0.6	12.6	9.4
Internship	4.7	1.2	2.5	5.4
Further education (higher education or vocational)	0.4	0.9	8.6	13.9
Military service	4.3	0.0	4.0	2.5
Housewife, househusband, family work	4.7	0.6	0.4	8.4
Could not work due to health problems (disabled)	0.0	0.0	0.0	1.0
Not employed, but searching for a job	23.3	0.3	6.5	23.8
Not employed and was not searching for a job	11.6	0.3	3.2	2.5
Total	100	100	100	100

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

When analyzing the activity status through a gender lens, it becomes clear that both males and females are equally engaged in full-time employment, with 60.4 per cent of each gender reporting full-time roles. This reflects a strong, gender-equal participation in stable, full-time employment. (Table 7)

Male graduates exhibit a greater tendency towards temporary or seasonal work, with 8.4 per cent of males in this category compared to just 3.1 per cent of females. This suggests that males are more likely to take on short-term or irregular job opportunities. Additionally, males show a higher inclination to pursue further education, with 7.0 per cent of them opting for higher education or vocational training, while only 2.8 per cent of females follow this path. This indicates a greater tendency among male graduates to continue their studies post-graduation. Males also have a higher representation in part-time employment, with 6.2 per cent of male graduates working part-time, compared to 5.3 per cent of females. (Table 7)

In contrast, a notable disparity is seen in family work roles, where a substantial 9.7 per cent of female graduates are involved in family work, housework, or assume the role of housewives. This contrasts sharply with only 1.6 per cent of male graduates in similar roles, suggesting that women are more likely

to take on family-related responsibilities after graduation, potentially influenced by societal or cultural expectations. Additionally, female graduates are significantly more likely to engage in internships, with 4.1 per cent of females participating in internships, compared to only 1.6 per cent of males. (Table 7)

Lastly, unemployment figures are similar for both genders, though females have a slight edge in the "not employed but searching for a job" category, with 8.2 per cent of females compared to 7.7 per cent of males. The percentage of graduates not employed and not seeking work is also slightly higher for females (3.5 per cent) than males (2.7 per cent), reflecting potential differences in post-graduation choices or circumstances. (Table 7)

The analysis reveals that while full-time employment remains consistent between genders, males are more likely to engage in temporary work and pursue further education, whereas females are more involved in family-related roles and internships. These findings highlight the distinct paths that male and female graduates follow completing their studies, with gender-specific factors likely influencing their choices. (Table 7)

Table 7– Economic activity status of graduates 7 month after graduation, by gender (Per cent, %)

Kind of major activity currently	Male	Female	Total
Full employment	60.4	60.4	60.4
Part-time employment	6.2	5.3	6.0
Self-employed/freelancer	1.9	1.9	1.9
Temporary work / seasonal work	8.4	3.1	6.8
Internship	1.6	4.1	2.4
Further education (higher education or vocational)	7.0	2.8	5.8
Military service	1.9	0.6	1.5
Housewife, househusband, family work	1.6	9.7	4.1
Could not work due to health problems (disabled)	0.4	0.3	0.4
Not employed, but searching for a job	7.7	8.2	7.9
Not employed and was not searching for a job	2.7	3.5	2.9
Total	100	100	100

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

3.2.2. Full employment

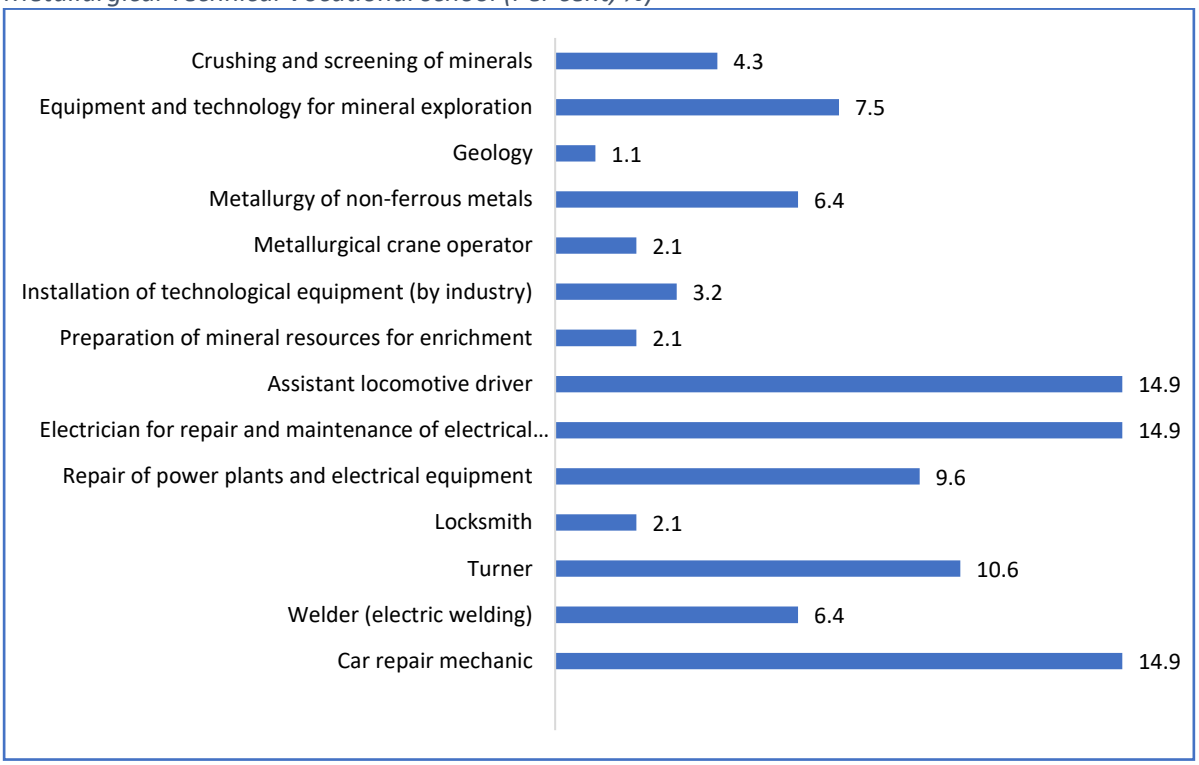
Analysing full employment shares within overall employment provides a standardized measure of how effectively VET programs prepare graduates for stable, wage-based jobs rather than temporary or informal work. It reflects the alignment between training and industry demand by ensuring that graduates acquire skills directly applicable to available job opportunities. Moreover, full employment serves as a proxy indicator for comparing the effectiveness of VET programs across colleges and qualifications.

Firstly, as already shown in Table 6, the share of graduates in full-time employment varies significantly across institutions, reflecting differences in regional economic conditions and local industry presence. Additionally, employment outcomes also vary by qualification, indicating that both institutional and field-of-study factors influence graduates' job prospects.

Analysis highlight that at Almalyk Mining and Metallurgical Technical Vocational school, the share of full employment after graduation is relatively low (36.2 per cent, Table 6). The highest shares of full employment among graduates are found in electricians for repair and maintenance (14.9 per cent),

car repair mechanics (14.9 per cent), and assistant locomotive drivers (14.9 per cent), indicating a demand for technical trades. In contrast, specialties such as geology (1.1 per cent), preparation of mineral resources (2.1 per cent), and metallurgy-related fields (ranging from 2.1 per cent to 7.5 per cent) exhibit much lower share of full employment among graduates, suggesting either a lower demand for these qualifications in the labour market, a misalignment between the skills taught and the current job market needs, or possibly a longer transition period for graduates to secure employment in these professions. (Figure 3).

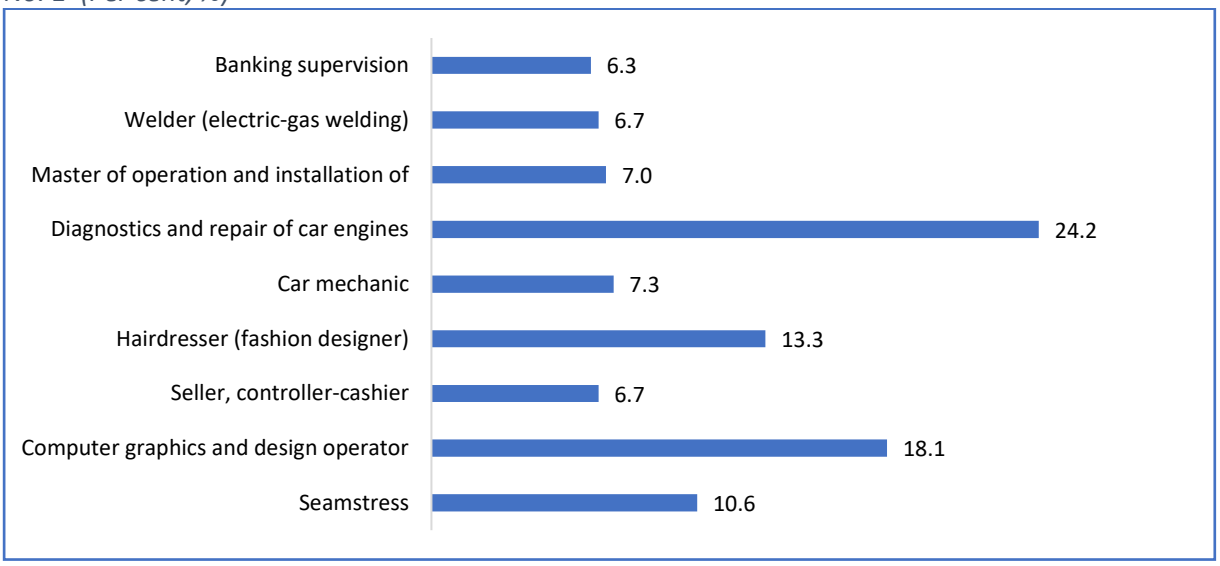
Figure 3 – Percentage of graduates in full employment by qualification - Almalyk Mining and Metallurgical Technical Vocational school (Per cent, %)



Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

Samarkand City Polytechnic No. 1 (Figure 4) shows overall the highest full employment shares (94.8 per cent) amongst the VET graduates and also exhibits varied employment outcomes by qualification, with some qualifications performing notably well. Diagnostics and repair of car engines (24.2 per cent) has the highest shares among fully employed graduates, reflecting the strong demand for automotive repair skills in the regional labour market. Computer graphics and design (18.1 per cent) and hairdressing (13.3 per cent) also demonstrate solid full employment prospects. However, other fields such as banking supervision (6.3 per cent) and welding (6.7 per cent) show lower shares, possibly due to lower immediate demand. Figure 4)

Figure 4 – Percentage of graduates in full employment by qualification - Samarkand City Polytechnic No. 1 (Per cent, %)

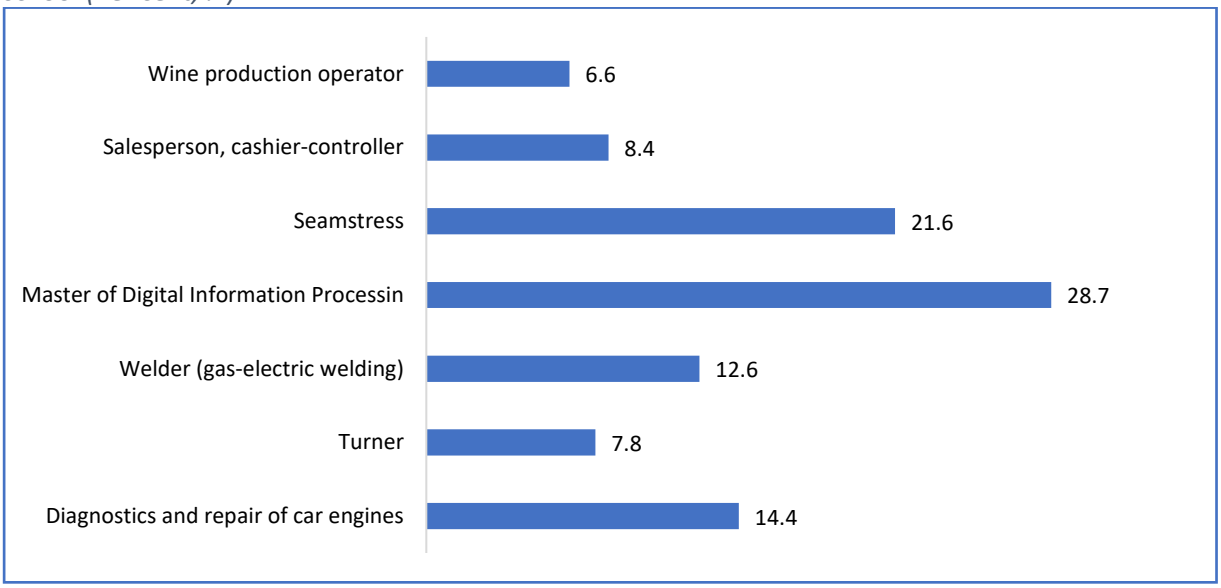


Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

Figure 5 shows that among the 45.3 per cent of fully employed graduates at Syrdarya District Polytechnic school, digital and textile-related skills yield the strongest full employment outcomes. The "Master of Digital Information Processing" specialization stands out with a full employment share of 28.7 per cent suggesting a high demand for IT-related skills. Similarly, "seamstress" training has a strong employment outcome (21.6 per cent), reflecting demand in the textile industry. "Automotive repair" (14.4 per cent) and "welding" (12.6 per cent) also show moderate full-employment success.

However, "wine production" (6.6 per cent) and "salesperson/cashier-controller" (8.4 per cent) have relatively low full employment shares among all fully employed graduates from Syrdarya Polytechnic school, which may indicate limited wage job openings in these fields. (Figure 5)

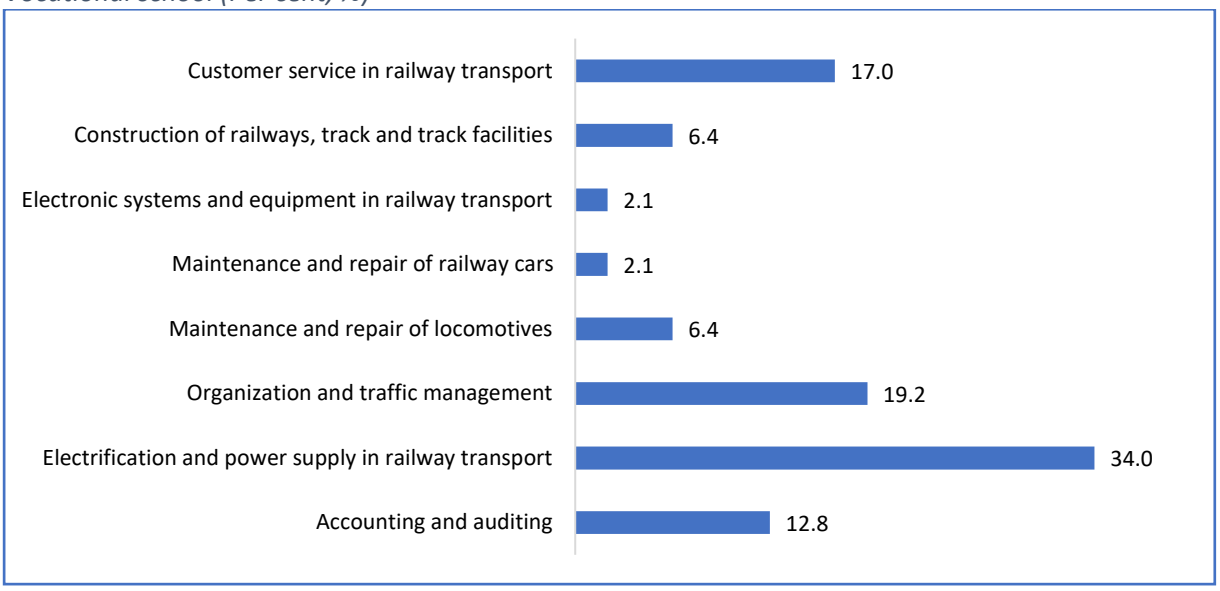
Figure 5 – Percentage of graduates in full employment by qualification - Syrdarya District Polytechnic school (Per cent, %)



Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

At Tashkent Transport Technical Vocational school where the full employment rate of graduates was the lowest (18.3 per cent), the qualification in "Electrification and Power Supply in Railways" (34.0 per cent) shows the highest full employment outcomes among fully employed graduates from the college, followed by "Organization and Traffic Management" (19.2 per cent) and "Customer Service in Railway Transport" (17.0 per cent). These results indicate a steady demand for professionals in railway infrastructure and operations. In contrast, "Maintenance and Repair of Railway Cars" (2.1 per cent) and "Electronic Systems in Railways" (2.1 per cent) have much lower employment rates, which could be due to oversupply or specialised hiring criteria. (Figure 6)

Figure 6 – Percentage of graduates in full employment by qualification - Tashkent Transport Technical Vocational school (Per cent, %)



Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

3.2.3. Labour mobility of graduates

Building on the discussion of full employment, it is equally important to consider the geographical factors influencing graduate employment outcomes. The proximity of job opportunities to the region where VET training is completed plays a critical role in determining the career paths of graduates. Understanding this regional dynamic allows for a deeper insight into how well VET programs are aligned with local labour market needs, which can significantly affect graduates' ability to find relevant employment without the need for relocation.

Analysis of tracer data shows that VET graduates interviewed primarily seek job opportunities in the region where they completed their training. This highlights the importance of aligning VET programs with local labour market needs to ensure graduates can find relevant employment without needing to relocate. (Table 8)

Graduates from the Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region overwhelmingly find jobs within Tashkent region (83.2 per cent), with a smaller share working in Tashkent city (13.7 per cent). Similarly, graduates from the Samarkand City Polytechnic No. 1 remain predominantly in Samarkand city (93.5 per cent) and the surrounding Samarkand region (5.9 per cent), showing a strong preference for local employment. (Table 8)

A similar trend is evident in the Syrdarya District Polytechnic school, where 43.4 per cent of graduates are employed in Syrdarya city and 48.3 per cent in Syrdarya region. This suggests that graduates actively seek work opportunities within their home region rather than relocating elsewhere. (Table 8)

The Tashkent Transport Technical Vocational school shows a slightly more dispersed pattern, with 47.7 per cent of its graduates employed in Tashkent city but also notable shares working in regions such as Surkhandarya (10.1 per cent), Tashkent (7.3 per cent), and even the Republic of Karakalpakistan (5.5 per cent). This may reflect the broader geographic demand for railway-related skills and/or indicate limited regional employment opportunities in the sector. (Table 8)

Since graduates seem to generally remain in their training region, it is crucial for VET programs to be designed in close coordination with local businesses and people. Strengthening this alignment would help improve employment outcomes and ensure that graduates have access to stable job opportunities without needing to seek work elsewhere. (Table 8)

Table 8– Graduate employment by job location and VET college (Per cent, %)

Job location	Almalyk Mining and Metallurgical Technical Vocational school of Tashkent region	Samarkand City Polytechnic No. 1	Syrdarya District Polytechnic school	Tashkent Transport Technical Vocational school
Tashkent city	13.7	0.0	6.2	47.7
Samarkand city	0.8	93.5	0.0	1.8
Syrdarya city	0.0	0.3	43.4	4.6
Republic of Karakalpakistan	0.0	0.0	0.0	5.5
Andijan region	0.0	0.0	0.0	0.9
Bukhara region	0.8	0.0	0.0	4.6
Jizzakh region	0.0	0.0	0.4	3.7
Kashkadarya region	0.0	0.0	0.0	1.8
Navoi region	0.0	0.0	0.0	2.8
Namangan region	1.5	0.0	0.0	0.0
Samarkand region	0.0	5.9	0.0	1.8
Surkhandarya region	0.0	0.3	0.0	10.1
Syrdarya region	0.0	0.0	48.3	3.7
Tashkent region	83.2	0.0	1.7	7.3
Fergana region	0.0	0.0	0.0	2.8
Abroad	0.0	0.0	0.0	0.9
Total	100.0	100.0	100.0	100.0

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

3.2.4. Wages

This section analyses the distribution of graduates' earnings based on their qualifications and the school they attended. For each institution and qualification, Tables 10–13 show the percentage of graduates in each salary range. This analysis is crucial for assessing the potential return on investment

in vocational education and training. By understanding how graduates' earnings vary by qualification and institution, policymakers and stakeholders can evaluate the economic benefits of VET programs and identify opportunities to enhance their effectiveness.

At Almalyk Mining and Metallurgical Technical Vocational school in the Tashkent region, a significant proportion of graduates in technical fields earn less than 1 million Uzbekistani UZS per month. Specifically, 60.0 per cent of metallurgical crane operators, 58.8 per cent of car repair mechanics and 44.4 of crushing and screening of minerals professionals fall into this category. For context, the average nominal monthly wage in Uzbekistan was approximately 5 million 357 thousand UZS in 2024[8]. Therefore, earnings below 1 million UZS per month are considerably lower than the national average. (Table 9)

Table 9– Distribution of graduates' wages based on their qualifications, Almalyk Mining and Metallurgical Technical Vocational school (Per cent, %)

	<1M UZS	1M–2.99M UZS	3M–4.99M UZS	5M–6.99M UZS	≥7M UZS	Total
Car repair mechanic	58.8	23.5	17.6	0.0	0.0	100
Welder (electric welding)	10.0	10.0	80.0	0.0	0.0	100
Turner	0.0	80.0	20.0	0.0	0.0	100
Locksmith	0.0	50.0	50.0	0.0	0.0	100
Repair of power plants and electrical equipment	8.3	83.3	8.3	0.0	0.0	100
Electrician for repair and maintenance of electrical equipment	0.0	50.0	35.0	5.0	10.0	100
Assistant locomotive driver	0.0	7.1	85.7	7.1	0.0	100
Preparation of mineral resources for enrichment	42.9	28.6	14.3	14.3	0.0	100
Installation of technological equipment (by industry)	0.0	50.0	25.0	0.0	25.0	100
Metallurgical crane operator	60.0	20.0	20.0	0.0	0.0	100
Metallurgy of non-ferrous metals	28.6	57.1	14.3	0.0	0.0	100
Geology	0.0	100.0	0.0	0.0	0.0	100
Equipment and technology for mineral exploration	14.3	0.0	85.7	0.0	0.0	100
Crushing and screening of minerals	44.4	22.2	22.2	11.1	0.0	100
Total	19.2	39.2	36.2	3.1	2.3	100

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

The notably lower average monthly wages earned by certain technical graduates, compared to the national average, may be influenced by several factors. The supply and demand for specific technical skills in the labour market significantly impact wage levels; an oversupply of graduates in certain fields can lead to increased competition for limited positions, potentially suppressing wages. Additionally, not all graduates are employed full-time, which can heavily affect average earnings. Furthermore, when individuals work in jobs where their skills are underutilized, their wages tend to be much lower than standard for their qualifications. Understanding these factors is crucial for addressing wage

8 See: https://kun.uz/en/news/2025/01/29/statistics-agency-reveals-average-monthly-salaries-by-region-and-sector-in-uzbekistan.

disparities and ensuring that investments in VET are economically viable, providing graduates with skills that meet labour market demands and lead to sustainable earnings.

Graduates in fields like geology and preparation of mineral resources for enrichment reported higher earnings potential. For example, 100 per cent of geology graduates earned on average between 1M and 2.99M UZS per month. Repair of power plants and electrical equipment graduates and turners show a higher percentage of individuals earning in the 1M–2.99M range. Across all graduates from Almalyk Technical Vocational school the highest wages are earned by graduates from the Installation of technological equipment (by industry) course, with 25 per cent of graduates earning more than seven million UZS. (Table 9)

At Samarkand City Polytechnic No. 1, the distribution of earnings is less diverse with 80.4 per cent of graduates earning in the 3M–4.99M UZS range, Car mechanics, diagnostics and repair of car engines and Welder (electric-gas welding) graduates achieve 100 per cent in the 3M–4.99M range, reflecting a stable wages and demand for skilled workers in these fields. Among graduates from the Samarkand Polytechnic, 9.1 per cent of seller controller and cashier graduates reported the highest monthly average wages in the 5M–6.99M UZS range. (Table 10)

Table 10– Distribution of graduates' wages based on their qualifications, Samarkand City Polytechnic No. 1 (Per cent, %)

	<1M UZS	1M–2.99M UZS	3M–4.99M UZS	5M–6.99M UZS	≥7M UZS	Total
Seamstress	0.0	66.7	33.3	0.0	0.0	100
Computer graphics and design operator	3.1	3.1	90.8	3.1	0.0	100
Seller, controller-cashier	0.0	4.5	86.4	9.1	0.0	100
Hairdresser (fashion designer)	0.0	22.7	77.3	0.0	0.0	100
Car mechanic	0.0	0.0	100.0	0.0	0.0	100
Diagnostics and repair of car engines	0.0	0.0	100.0	0.0	0.0	100
Master of operation and installation of	60.9	21.7	17.4	0.0	0.0	100
Welder (electric-gas welding)	0.0	0.0	100.0	0.0	0.0	100
Banking supervision	0.0	19.0	81.0	0.0	0.0	100
Total	4.7	13.6	80.4	1.2	0.0	100

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

The graduates of Syrdarya District Polytechnic school predominantly earn monthly salaries within the 1 million to 2.99 million UZS range, comprising 63.0 per cent of the graduates. A smaller group, 34.6 per cent, receive between 3 million and 4.99 million UZS. Notably, only a few “Master of Digital Information Processing” graduates reported earnings above the national average, specifically in the ≥7 million UZS bracket, despite the increasing demand for specialized technical and digital skills in the labour market. Additionally, noticeable proportions of graduates in sales (5.3 per cent), seamstresses (4.9 per cent) as well as and digital information processing (3.4 per cent) reported monthly wages below 1 million UZS. This underlines the potential wage disparities because of varying employment types (full-time vs. part-time) and the misalignment of job roles with graduates' qualifications. (Table 11)

Table 11– Distribution of graduates' wages based on their qualifications, Syrdarya District Polytechnic school (Per cent %)

	<1M UZS	1M–2.99M UZS	3M–4.99M UZS	5M–6.99M UZS	≥7M UZS	Total
Diagnostics and repair of car engines	0.0	50.0	50.0	0.0	0.0	100
Turner	0.0	65.2	34.8	0.0	0.0	100
Welder (gas-electric welding)	0.0	73.1	26.9	0.0	0.0	100
Electrician	0.0	85.7	14.3	0.0	0.0	100
Master of Digital Information Processing	3.4	87.9	6.9	0.0	1.7	100
Seamstress	4.9	41.5	53.7	0.0	0.0	100
Salesperson, cashier-controller	5.3	36.8	57.9	0.0	0.0	100
Wine production operator	0.0	70.6	29.4	0.0	0.0	100
Total	2.1	63.0	34.6	0.0	0.4	100

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

The wage distribution data for Tashkent Transport Technical Vocational school reveals that its graduates generally achieve higher earnings compared to the other VET schools that participated in the Tracer study. Specifically, 35.8 per cent of graduates reported average monthly salaries of 5 million UZS or more. Several factors may contribute to these higher wage outcomes. Firstly, it seems that there is overall labour demand for specialized technical roles in the railway transport sector which drives wages. Also, Tashkent, as the capital city, offers a dynamic economy with a higher concentration of businesses, leading to increased demand for skilled professionals and, consequently, higher wages. It is interesting to note that all graduates in "Maintenance of railway bridges and tunnels" earn between 5 million and 6.99 million UZS, reflecting strong demand for the specialized nature of the training. High wages could also be observed for maintenance and repair of locomotives railway cars, indicating that specialized skills in these areas are well-compensated. (Table 12)

Table 12– Distribution of graduates' wages based on their qualifications, Tashkent Transport Technical Vocational school (Per cent, %)

	<1M UZS	1M–2.99M UZS	3M–4.99M UZS	5M–6.99M UZS	≥7M UZS	Total
Accounting and auditing	15.4	30.8	30.8	0.0	23.1	100.0
Electrification and power supply in railway transport.	4.0	28.0	52.0	8.0	8.0	100.0
Automation and tele-mechanics in railway transport.	0.0	20.0	60.0	20.0	0.0	100.0
Organization and traffic management.	0.0	0.0	50.0	28.6	21.4	100.0
Maintenance of railway bridges and tunnels.	0.0	0.0	0.0	100.0	0.0	100.0
Maintenance and repair of locomotives	0.0	0.0	33.3	33.3	33.3	100.0
Maintenance and repair of railway cars	0.0	0.0	33.3	33.3	33.3	100.0
Maintenance of radio communication systems in railway transport	0.0	0.0	50.0	50.0	0.0	100.0

Maintenance of wired communication systems in railway transport	0.0	50.0	50.0	0.0	0.0	100.0
Electronic systems and equipment in railway transport	25.0	0.0	50.0	25.0	0.0	100.0
Construction of railways, track and track facilities	0.0	0.0	0.0	83.3	16.7	100.0
Customer service in railway transport	9.1	36.4	40.9	0.0	13.6	100.0
Total	5.5	19.3	39.4	21.1	14.7	100.0

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

The wage analysis in this section highlights significant disparities in earnings among VET graduates, influenced by the field of study, labour market demand and regional factors among others. Graduates in high demand, specialized technical fields tend to earn more, while those in traditional technical sectors face lower wages. These findings highlight the need for VET programs to align with labour market demands, ensuring that graduates secure well-paying jobs that justify the overall investments in vocational education.

3.3. Relevance of VET content for the labour market

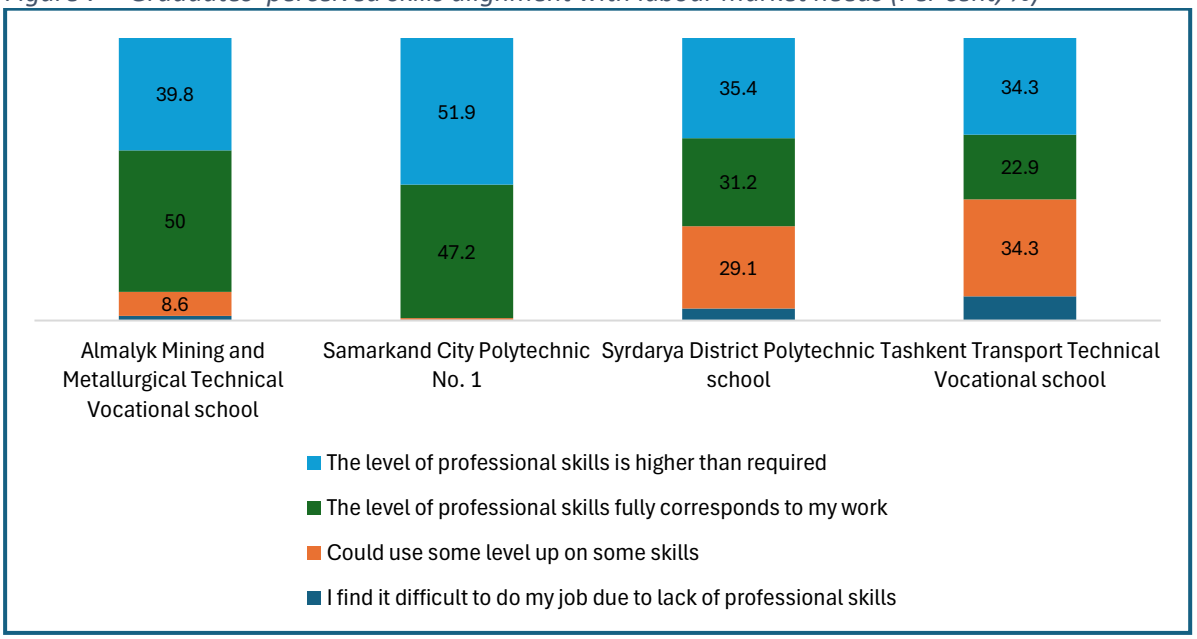
The alignment of vocational education and training (VET) content with the demands of the labour market is crucial for ensuring that graduates are equipped with the relevant skills needed to productively participate in labour market activities and to earn incomes that return their investment in VET. This section explores the correspondence between the professional skills acquired during VET programs and the actual requirements of the job market according to the graduates interviewed. By examining graduates' perceptions of their skill levels in relation to their job requirements, we can assess the relevance of VET curricula in preparing students for successful careers in various sectors.

3.3.1. Correspondence of acquired skills to the jobs

Figure 7 shows that graduates from vocational institutions experience varying levels of alignment between their skills and job requirements.

On average, 42.9 per cent of graduates feel their skills exceed job requirements, with Samarkand City Polytechnic having the highest proportion at 51.9 per cent. This suggests that some graduates are employed in roles where they feel overqualified. If job opportunities in their field of qualification are limited, graduates may accept positions that do not fully utilize their skills, leading to labour and skill underutilization. Additionally, when there is an oversupply of VET graduates in certain trades, particularly in fields where they compete with higher education graduates, VET students may be more likely to take on lower-grade roles that are not aligned with their training leading to a feeling of overqualification and underutilization.

Figure 7 – Graduates' perceived skills alignment with labour market needs (Per cent, %)



Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

It is also important to note that this data reflects graduates' subjective views, and they may overestimate their skills compared to employer expectations, given the idealized training environments they come from. This, along with limited professional experience, could inflate graduates' self-assessment. Perceptions may also be shaped by factors such as current job market conditions, personal career aspirations, and sector-specific challenges, adding further complexity to the overall picture (Figure 7).)

Approximately 39.8 per cent of graduates feel their skills fully match job requirements, with Almalyk Mining and Metallurgical Technical Vocational school showing the highest alignment at 50.0 per cent. In contrast, only 22.9 per cent of Tashkent Transport Technical Vocational school graduates report full alignment, and 34.3 per cent indicate a need for skill upgrades, the highest proportion among the institutions. Additionally, 8.6 per cent of Tashkent Transport Technical Vocational school graduates reported to face significant challenges in their jobs due to skill shortages, suggesting that the skills taught in the railway sector are increasingly outdated and do not meet the rapidly evolving demands of the industry (Figure 7).

It is important to recognize that many traditional technical qualifications in today's labour market require new technological and digital skills. This may help explain why graduates from certain technical colleges and fields are less aligned with labour market needs. As industries continue to integrate digital tools and technological updates, VET programs must revise their curricula regularly to better address these changes. (Figure 7)

Overall, these findings highlight the need for a comprehensive labour market demand analysis, not just a skills demand analysis, to ensure that VET programs align more relevantly with market needs, ultimately enhancing employment prospects for graduates (Figure 7).

3.3.2. Reasons for choosing jobs that might not correspond to the skills obtained

Table 13 provides insights into why individuals, regardless of gender, hold positions that do not directly correspond with their VET qualifications. The analysis reveals several factors that influence graduates to pursue jobs outside their field of training, including economic pressures and lifestyle considerations.

Table 13– Reasons for choosing the job, even if it is not closely related to your qualification (Per cent, %)

	Male	Female	Total
Not applicable, my work is closely related to my course of study	33.3	23.4	30.0
This is just a temporary launching pad to gain experience.	17.6	13.0	16.1
I have not found an appropriate job (yet)	6.8	7.7	7.1
I receive a higher salary in my current job	11.1	10.1	10.8
This job offers more security	6.6	7.4	6.9
My interests have changed	4.1	4.3	4.2
My current job allows a flexible time schedule	6.5	10.4	7.8
Good location, easier to get to	9.8	13.8	11.2
I can spend more time with my family/children	3.2	9.6	5.3
Other	0.9	0.3	0.7
Total	100.0	100.0	100.0

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

Overall, 30.0 per cent of respondents noted that their work is directly related to their course of study, with a higher share among males (33.3 per cent) compared to females (23.4 per cent). (Table 13)

For those in jobs not closely related to their qualifications, the most common reason is using the job as a temporary launching pad to gain experience (16.1 per cent overall, with 17.6 per cent of males and 13.0 per cent of females indicating this), followed by factors like higher salary (10.8 per cent) and job security (6.9 per cent), which are relatively consistent across genders. (Table 13)

However, lifestyle considerations appear more prominent among female graduates, with a higher proportion valuing flexible work schedules (10.4 per cent vs. 6.5 per cent for males), convenient job locations (13.8 per cent vs. 9.8 per cent), and the ability to spend more time with family (9.6 per cent vs. 3.2 per cent). These patterns suggest that while economic factors are important in job selection, non-economic factors such as work-life balance and family time play a significant role, particularly for female graduates. (Table 13)

3.3.3. Rating of VET relevance

Table 14 shows that graduates generally rate their VET training as highly useful. Across all categories, securing a relevant job, fulfilling professional tasks, career development, personal growth, and contributing to economic development, most graduates selected the highest rating (5), ranging from 64.4 per cent to 76.5 per cent. This overwhelmingly positive perception suggests that most graduates feel well-prepared by their training.

Table 14– Graduates perceived usefulness of VET rating, 1 – not at all, 5 – fully (Per cent, %)

	1	2	3	4	5	Total
	Usefulness to get a relevant job after graduation?					
Male	2.3	2.1	8.9	17.7	69.0	100.0
Female	4.8	1.6	6.3	17.8	69.5	100.0
Total	3.1	1.9	8.1	17.7	69.2	100.0
	Usefulness to fulfil your current professional tasks?					
Male	3.2	2.2	6.7	16.4	71.5	100.0
Female	5.1	2.2	6.0	12.7	74.0	100.0
Total	3.7	2.2	6.5	15.3	72.2	100.0
	Usefulness for your future professional development/career?					
Male	2.7	1.1	8.4	18.5	69.3	100.0
Female	5.1	1.3	4.1	25.1	64.4	100.0
Total	3.4	1.1	7.1	20.5	67.8	100.0
	Usefulness for personal development?					
Male	3.2	1.2	6.8	17.0	71.8	100.0
Female	4.4	1.6	5.1	12.4	76.5	100.0
Total	3.5	1.3	6.3	15.6	73.2	100.0
	Usefulness for the economic development of your country?					
Male	3.0	3.4	7.8	18.8	67.0	100.0
Female	4.1	0.3	6.0	16.2	73.3	100.0
Total	3.3	2.5	7.3	18.0	68.9	100.0

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

However, as noted earlier, these high ratings differ from our labour market alignment analysis, which indicates that many graduates are employed in roles that do not fully utilize their qualifications or where they face challenges in effectively applying their skills to job requirements. One possible explanation is that recent graduates, with limited work experience, may initially overestimate the value of their training. With minimal exposure to workplace challenges, they might assume their qualifications will automatically lead to professional success. Additionally, the VET system often fosters a strong sense of confidence by emphasizing the importance of the skills acquired. These findings suggest that VET programs should focus not only on delivering technical skills but also on providing a realistic understanding of workplace expectations and career progression.

3.4. Future aspirations of graduates

Understanding graduates' future aspirations is crucial for anticipating career trends and ensuring that vocational education adapts to the evolving demands of the labour market. By gaining insights into these aspirations, policies and programs can be developed to better support graduates in their transition into productive jobs and foster their professional growth.

The analysis of graduates' future aspirations reveals that the most common goal is to change employers, with 31.5 per cent of males and 22.3 per cent of females, indicating a desire for better positions or working conditions. Changing work assignments follows closely, with 10.5 per cent of males and 12.3 per cent of females, suggesting a need for more varied or fulfilling job roles (Table 15).

Table 15 –Future aspirations of graduates (Per cent, %)

	Male	Female	Total
to change my employer	31.5	22.3	28.6
to obtain higher income	6.7	8.9	7.4
to change my area of work assignment	10.5	12.3	11.0
to restart full-time study	4.4	5.5	4.8
to study part-time	5.5	5.2	5.4
to start my own business	7.6	10.9	8.7
to get employed, start working	8.6	12.5	9.8
to discontinue employment	8.8	7.5	8.4
to achieve more secure employment	1.3	1.1	1.2
to achieve better use of my knowledge	1.4	1.8	1.5
to take over a job more closely linked to my study	6.4	6.2	6.4
Other	6.9	5.5	6.4
I have no major changes in mind	0.5	0.2	0.4
Total	100	100	100

Source: Pilot Tracer Study Uzbekistan. NOTE: Percentages may not total 100 per cent exactly due to rounding.

A significant proportion of graduates also aspires to secure employment or begin working, particularly among females. Additionally, many graduates are interested in starting their own business, with 7.6 per cent of males and 10.9 per cent of females. Seeking higher income is another key goal, with 6.7 per cent of males and 8.9 per cent of females, underscoring the importance of financial growth, particularly among female graduates. (Table 15).

Further education is also an aspiration for some graduates, with 4.8 per cent interested in full-time studies and 5.4 per cent considering part-time study. Discontinuing employment is a consideration for 8.4 per cent of graduates, possibly due to dissatisfaction with their current roles. Interestingly, job security is not a primary concern, with only 1.2 per cent seeking more secure employment. (Table 15).

In a nutshell, the analysis shows that many graduates are focused on improving their economic situation, whether through changing employers, seeking higher income, or pursuing entrepreneurship. This indicates that, while vocational education provides technical training, graduates are also prioritizing broader career goals, such as job satisfaction and financial stability. Overall, it suggests that graduates are aiming for more fulfilling and financially rewarding career paths.

4. Interpretation of key findings

This section interprets the findings from Chapter 3 in relation to the analytical objectives outlined in Section 1.2 of this report.

Objective 1: VET Program Quality: Evaluating graduates' perspectives on the quality and effectiveness of the VET programs, including aspects such as teaching methods and job search support.

The findings reveal significant disparities in the perceived efficiency of VET provision across institutions in Uzbekistan, particularly in governance and institutional performance. The Samarkand City Polytechnic No. 1, based on the feedback from its graduates, demonstrates the highest level of effectiveness, consistently receiving positive evaluations from graduates. High satisfaction rates in training quality, teacher expertise, and student support suggest that the institution has strong governance structures, effective monitoring mechanisms, and a well-functioning internal quality assurance system. These factors contribute to maintaining high standards in training delivery and institutional operations.

In contrast, Almalyk Mining and Metallurgical Technical Vocational school and Tashkent Transport Technical Vocational school exhibit weaker governance and institutional effectiveness. Almalyk's inconsistent program ratings, with some qualifications receiving perfect satisfaction while others are rated poorly, suggest a lack of standardized quality control and uneven implementation of training programs. Similarly, the Syrdarya District Polytechnic school shows lower training satisfaction rates, pointing to deficiencies in performance monitoring and instructional oversight. Tashkent Transport Technical Vocational school faces some challenges, as graduates have expressed lower satisfaction with job search support, internship placements, and overall training quality, highlighting opportunities for enhancement in institutional governance and student services. Disparities in teacher expertise further highlight governance challenges in maintaining instructional quality. While the Samarkand City Polytechnic No. 1 receives nearly universal approval for its instructors' practical experience, Almalyk Mining and Metallurgical Technical Vocational school receives lower ratings, suggesting some limitations in professional development and institutional oversight of faculty training. The lower ratings for educational materials and teaching methods at Tashkent Transport Technical Vocational school further indicate governance challenges in curriculum oversight and instructional quality control.

A critical indicator of institutional effectiveness is graduate willingness to return to the same VET institution. The Samarkand City Polytechnic No. 1, with 98 percent of graduates expressing a willingness to return, demonstrates strong institutional governance and trust in its ability to provide high-quality education. In contrast, only 65.8 percent of graduates from Tashkent Transport Technical Vocational school would choose the same institution again, reflecting less confidence in its governance, training quality, and student support services.

In the broader context these findings suggest that while some VET institutions have well-established governance structures and effective institutional management, others face inefficiencies in quality assurance, faculty development, and program oversight. To improve VET efficiency, weaker institutions must strengthen their governance frameworks, enhance internal performance monitoring, and implement more rigorous mechanisms for ensuring consistency in training delivery.

Objective 2: Labour Market Integration: Assess the alignment of their VET training with their current job roles, and the applicability of the skills learned during training.

The analysis of labour market integration among graduates from vocational education and training programs also reveals significant disparities in employment outcomes, underscoring the need for stronger alignment between training programs and market demands.

For example, graduates from the Samarkand City Polytechnic No. 1 experience a high full employment rate of 94.8 percent, suggesting that their programs translate into decent income opportunities. However, it is important to note that many of these graduates, although fully employed, are not working in productive positions that align with their qualifications. This issue is discussed in detail in the section on labour market relevance. Further, graduates from Tashkent Transport Technical Vocational school have a much lower full employment rate (18.3 percent) and a higher job-seeking rate (23.8 percent), highlighting a discrepancy between observed the training provided and the regional employment opportunities available. Similar issues are at Almalyk Mining and Metallurgical Technical Vocational school and Syrdarya Polytechnic School, where full employment rates are also relatively low. This suggests that these institutions may need to reassess their programs to better align them with market demands.

The analysis also reveals gender-based trends in post-graduation employment. While both male and female graduates engage in full-time employment at similar rates, males are more likely to pursue temporary or seasonal work or further education, whereas females are more inclined to take on family roles. Additionally, female graduates participate in internships at higher rates, suggesting increased challenges in securing decent and productive employment. This trend highlights the influence of societal norms on labour market integration and underscores the need for a gender-sensitive approach in VET programs to promote gender equity in labour market participation.

Qualification-specific employment outcomes also vary, with technical skills in fields such as automotive repair, digital information processing, and seamstress training associated with higher employment rates. Conversely, specialized fields like metallurgy and railway maintenance show lower employment rates, likely due to shifts in market demand driven by technological advancements. This underscores the importance of adjusting curricula to incorporate a broader set of skills to enhance employability.

Regional employment patterns reveal that most graduates tend to stay in the regions where they were trained, indicating the importance of aligning VET programs with local labour market needs. Graduates from institutions like Almalyk Mining and Metallurgical Technical Vocational school and Samarkand City Polytechnic No. 1 show a clear preference for local employment, suggesting that VET programs should strengthen their connections with local industries to enhance graduate employment outcomes.

Wage disparities are another key issue. Many graduates, particularly those in technical fields at Almalyk Mining and Metallurgical Technical Vocational school, earn significantly below the national average, with a large proportion earning less than 1 million UZS per month. This suggests that factors such as oversupply of graduates, in traditional VET fields and skill mismatches contribute to lower wages. On the other hand, graduates in fields like geology and electrical equipment repair report higher earnings, indicating that specialized technical skills can lead to better-paying employment opportunities.

The findings underscore the need for VET programs to continuously adapt to evolving market demands and conditions. Institutions should strengthen their links with local businesses and industries to ensure that training programs remain relevant and responsive to job market needs. Additionally, addressing

gender disparities and aligning curricula with in-demand skills could improve the labour market integration of graduates, ensuring better job stability and higher wages.

Objective 3: Skills Relevance: Gathering insights into graduates' perception on the relevance of acquired skills to their current employment and professional development.

The analysis of Pilot Tracer Study data reveals several key insights related to Objective 3. Firstly, the findings indicate a significant mismatch between acquired skills and job requirements, with 42.9 percent of graduates feeling overqualified for their jobs. This suggests that many graduates are employed in roles that do not fully utilize their qualifications, possibly due to a lack of decent job opportunities for VET graduates in their specific fields. In contrast, only 39.8 percent of graduates believe their skills fully match job requirements, with Almalyk Mining and Metallurgical Technical Vocational school achieving the highest alignment.

Graduates' reasons for working in jobs that do not directly align with their qualifications vary. Many view their current positions as steppingstones to gain experience, while others prioritize factors such as higher salaries and job stability. Notably, female graduates place greater emphasis on work-life balance, selecting jobs based on location, flexible schedules, or the ability to spend more time with family. These findings suggest that, beyond skill relevance, economic and lifestyle considerations play a significant role in employment decisions.

Despite the misalignment between training and job placement, graduates generally rate their VET education as highly useful for securing employment, career growth, and contributing to economic development, with the majority assigning the highest rating. One possible explanation for this discrepancy is that recent graduates, with limited workplace experience, may initially overestimate the usefulness of their training, as they have yet to encounter the complexities and demands of real-world employment.

Future aspirations further illustrate graduates' career expectations. Many express a desire to change employers in search of better working conditions, while others prioritize financial growth, with some aiming to start their own businesses. A notable percentage also consider further education, recognizing the need for continuous skill development. These findings suggest that while VET programs provide technical training, graduates seek more fulfilling and financially stable career paths.

This analysis underscores the need for VET programs to better align with both labour market demands and graduates' career aspirations. It highlights a gap between graduate expectations and actual employment realities, emphasizing the importance of curriculum updates, career guidance, and a stronger focus on enhancing employability and long-term job satisfaction.

5. Recommendations

5.1. Policy recommendations

The analysis clearly indicates that, to enhance the effectiveness and relevance of Vocational Education and Training (VET) across schools in Uzbekistan, it is essential to focus on three key areas: (1) addressing imbalances and institutional differences in the quality of training delivery and career guidance, (2) aligning curricula with regional labour market needs, and (3) ensuring the relevance of the skills and content taught to graduates' career aspirations and the evolving demands of the market. These areas collectively ensure that graduates are well-prepared to meet the demands of an increasingly dynamic and evolving job market.

Quality of training

Training standards should be consistent across all vocational training institutions to ensure that the quality of education is uniform and equitable nationwide. This consistency is crucial for maintaining a high standard of vocational education and training and ensuring that all students have access to the same level of training and opportunities.

Instructors should not only be subject matter experts but also mentors, helping students navigate the complexities of modern professional environments. To support this, professional development programs for teachers and instructors should be prioritized. These programs should focus on enhancing teachers' technical expertise while also cultivating their coaching skills, ensuring they can support students in ways that reflect the realities of the current and future labour market. Continuous professional development will ensure that instructors stay current with emerging technologies, industry trends, and modern teaching strategies. The tracer study highlighted mixed perceptions of teaching staff, with some graduates rating their instructors highly, while others indicated a need for further professional development.

Professional development

Further, VET programs must go beyond imparting traditional technical and practical skills; they need to prepare students with broader competencies that are critical for success in today’s labour market, such as digital skills, adaptability, critical thinking, problem-solving, and learn-to-learn abilities. The days of learning one set of technical skills for a lifetime career are long gone. Students need to develop a mindset of lifelong learning, where they’re constantly seeking out new knowledge and improving their skill set.

Curriculum alignment with labour market needs and relevance

VET curricula must be closely aligned with the evolving needs of local labour markets. As businesses continuously adapt to new technologies and economic shifts, and as more people find employment in the gig or platform economy or become self-employed, it is vital for VET institutions to collaborate closely with students, employers, labour market experts, and government bodies to ensure their programs reflect these changes. The tracer study found that graduates from certain fields expressed concerns that their programs did not fully address changing employment patterns and the technical requirements of specific sectors, particularly those in high demand such as rail transport. This underscores the need for ongoing alignment between curricula and the immediate and sector-specific demands of the labour market.

Curricular flexibility

In addition to alignment, the content taught in VET programs must remain relevant to emerging job roles and trends. Curricula should be flexible enough to accommodate rapid shifts in labour market demands, ensuring that graduates have the right mix of skills and expertise required to succeed in a rapidly evolving economy. This flexibility will allow VET institutions to adapt to new technologies, emerging sectors, and unpredictable labour market changes, keeping programs responsive to both present and future employment opportunities. It is well known that most skills will be required for jobs that do not yet exist.

Regional collaboration and support services

Along with updating curricula, it is crucial to foster collaboration with local communities and businesses to improve VET relevance. The Pilot Tracer study highlighted that many graduates face challenges in finding relevant local employment opportunities due to a disconnect between regional job availability and the skills they acquired during their training. It is important to highlight that VET should not just align with the skill needs in terms of quality but also with the quantity of labour needed.

Career guidance

Strengthening job search support services, career counseling, and employer networks is key to helping graduates' transition more successfully from training to productive employment. The study's findings also show that graduates who accessed employment services were more successful in securing stable, quality jobs, underscoring the vital role these services play.

Use tracer studies to inform continuous VET improvement

Lastly, tracer studies and systems that track graduates' career progression and labour market activity are invaluable for ensuring that VET improves effectiveness and relevance. Tracer studies provide critical data on how the VET system performs and how graduates fare in the labour market, helping institutions identify areas where training may need to be adjusted or improved. By using this data to inform decision-making, VET institutions can ensure their programs remain responsive to labour market needs and continue to equip graduates with the skills necessary to succeed in an increasingly digital and rapidly changing economy.

By focusing on the quality of VET training, aligning curricula with labour market needs, and ensuring the relevance of content, Uzbekistan's VET system can better prepare graduates to succeed in a diverse and fast-evolving job market.

5.2. Practical suggestions for stakeholders

To enhance the effectiveness and relevance of Vocational Education and Training in Uzbekistan, it is crucial that all relevant stakeholders collaborate and take targeted actions. All stakeholders, policymakers, educational institutions, employers, and students should continuously engage in dialogue to ensure that the VET system remains relevant and responsive to labour market needs. Below are practical suggestions for the various stakeholders involved in the VET system.

Policymakers and government bodies

To address the differences in training quality among VET institutions, it may be important for policymakers to continue their efforts in implementing a national framework for quality assurance. This framework sets clear, consistent quality standards for all institutions, ensuring that all schools adhere to minimum benchmarks. Regular monitoring and evaluation through a centralized

accreditation system could help maintain uniformity across the sector. For institutions in regions with fewer resources, additional support may be necessary, such as targeted funding for infrastructure, teaching materials, and technology. Encouraging the creation of a peer support network could also help facilitate knowledge sharing, where higher-performing institutions collaborate with others facing challenges.

Educational institutions (VET Providers)

VET providers should consider regularly reviewing and updating their curricula to ensure they align closely with the evolving needs of the labour market. Maintaining this alignment, particularly in high-demand sectors, is critical. Close collaboration with local employers and sector associations can provide valuable insight into regional job requirements, allowing institutions to tailor their training programs to meet specific local needs. Institutions might also consider integrating more hands-on learning opportunities and project-based learning into the curriculum, helping students gain practical experience and improve their employability. Additionally, offering flexible and modular training options can enable graduates to continue their education and skill development throughout their careers, fostering a culture of lifelong learning.

When discussing curriculum updates, it is essential to emphasize the importance of sustainability. Ensuring continuous funding, ongoing dialogue with employers, and regular updates to curricula will help ensure that improvements are not one-off efforts but become ingrained into the system, making the VET model more adaptable and resilient in the long term.

Instructors and educators

Instructors could benefit from engaging in ongoing professional development, both in terms of enhancing their technical knowledge and improving their teaching methods. Keeping up to date with market trends and emerging technologies would allow instructors to provide the most relevant and contemporary instruction to students. In addition, instructors might take on mentoring roles, offering valuable career guidance to students and helping them make the transition from classroom learning to practical application.

Employers and business leaders

Employers may find it beneficial to collaborate more closely with VET institutions to ensure that training programs remain relevant to industry needs. Offering hands-on learning opportunities, such as internships and apprenticeships, could provide students with invaluable real-world experience. Employers may also consider providing regular feedback on the preparedness of VET graduates, helping institutions to make necessary adjustments to their programs. Additionally, clear pathways for VET graduates, such as entry-level positions, apprenticeships, or mentorships, could ease the transition from education to employment and support graduates as they embark on their careers.

Students and Graduates

Students could be encouraged to actively engage with the career support services offered by their VET institutions. Taking advantage of job search assistance, career counseling, and internship opportunities could help them gain a clearer understanding of their skills and potential job prospects. Furthermore, focusing on developing soft skills, such as communication, problem-solving, and teamwork, might make students more competitive in the labour market. Graduates may benefit from embracing the idea of lifelong learning, continuously seeking opportunities to upskill or reskill through additional

training programs, certifications, or online courses, which would help them stay adaptable and competitive in an evolving job market.

By considering and implementing these suggestions, stakeholders can contribute to a more effective and equitable VET system in Uzbekistan. The combined efforts of policymakers, educational institutions, instructors, employers, and students can ensure that VET programs are better aligned with the evolving needs of the labour market, ultimately leading to a skilled, adaptable, and competitive labour force.

6. Conclusion

This pilot tracer study has been an essential initiative for developing and refining the methodology to assess the effectiveness of Uzbekistan's Vocational Education and Training system. It has demonstrated the potential of tracer studies as a valuable tool for evaluating VET performance and its alignment with labour market needs.

By tracking the feedback and experiences of graduates, the study underscores the importance of continuous evaluation in ensuring that VET programs remain responsive to the evolving demands of the labour market. As technological advancements reshape economies and employment patterns, evaluating how well VET prepares graduates to enter the workforce becomes even more critical.

This pilot study has provided valuable lessons that will help improve the methodology for future tracer studies in Uzbekistan and strengthen their ability to inform evidence-based policy decisions. Continued use of such studies will support VET institutions and policymakers in making informed decisions to improve VET quality, enhance employability outcomes, and align vocational education with the needs of a changing economy.

7. Resources

European Training Foundation. International Labour Organization and Cedefop. 2016. Carrying out tracer studies - Guide to anticipating and matching skills and jobs Vol. 6. Available at: https://www.etf.europa.eu/en/publications-and-resources/publications/carrying-out-tracer-studies-guide-anticipating-and-matching

European Training Foundation. Skills Anticipation and Matching Systems. 2012. in Transition and Developing Countries. Available at: https://www.etf.europa.eu/sites/default/files/m/84E964F6CBD16532C1257AAD0038EC27_Skills%20matching%20systems.pdf

EU – VET Toolbox. 2022. Tracer studies for VET: supporting their creation and implementation. Available at: https://vettoolbox.eu/publications/tracer-studies-for-vet-supporting-their-creation-and-implementation/