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Tracer Study of

TVET Graduates

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Contents

List of Figures

List of Tables

1. Preface

The Technical and Vocational Education and Training (TVET) sector in Pakistan plays a pivotal role in equipping individuals with the skills necessary to meet the demands of an evolving labour market and contribute meaningfully to the country's socio-economic development. Over the years, the sector has undergone substantial reforms aimed at enhancing the quality, accessibility, and relevance of training programmes. This report is the conclusion of efforts undertaken during the project, a comprehensive initiative aimed at evaluating the outcomes of TVET programmes and understanding their impact on graduates' employability, income generation, and contributions to Pakistan's labour force.

This study, commissioned by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and conducted by the International Consulting Associates (IConsult), provides critical insights into the effectiveness of TVET initiatives. It explores key areas such as employment trends among graduates, the alignment of training programmes with industry requirements, and the perceived quality and utility of acquired skills. By examining both Conventional and competency-based training (CBT) programmes, the study sheds light on their comparative performance, challenges, and opportunities for improvement.

The study covers a total population of 298,924 TVET graduates that graduated in 2023 through programmes covered under the scope of this study. For this study, the consultant conducted a comprehensive survey of 30,975 graduates, representing approximately 10% of the national cohort, based on stratified sampling, including 36.70% graduates from Competency-Based Training (CBT) programmes and 63.30% from conventional training programmes. Among surveyed graduates, approximately 61% were male (19,036 individuals), and 39% were female (11,939 individuals).

The findings of this report are rooted in a thorough research process, which includes qualitative and quantitative methodologies, extensive stakeholder engagement, and comprehensive data analysis. The project has drawn on the expertise of researchers, trainers, policymakers, and industry representatives, ensuring a complete understanding of the TVET ecosystem. From the initial inception phase, which outlined the study's framework, to the execution and final analysis, the project reflects a collaborative effort to address critical gaps in evidence-based policymaking within the sector.

This report is intended not only to fulfil the objectives outlined in the Study design but also to serve as a strategic resource for guiding future developments in the TVET sector. It offers actionable recommendations to enhance program design, improve the employability of graduates, and strengthen linkages between training institutions and the labour market. By fostering an environment of continuous learning and adaptation, the TVET system can better address emerging challenges, such as the integration of green skills, digital transformation, and gender inclusivity.

The importance of this endeavour extends beyond its immediate findings. The insights provided here will contribute to shaping policies and practices that promote a more inclusive, equitable, and demand-driven TVET system, ensuring that no demographic is left behind. Furthermore, the emphasis on evidence-based decision-making underscores the commitment of all involved parties to foster a culture of accountability and innovation in technical and vocational education.

We express our deepest gratitude to all the individuals and organizations that have contributed to this project. Their active participation, thoughtful feedback, and unwavering support have been instrumental in the successful completion of this study. We also acknowledge the dedication of the researchers, enumerators, and analysts who worked diligently to ensure the quality and reliability of the findings presented in this report.

As the TVET sector continues to evolve, this report aims to act as a cornerstone for future initiatives, inspiring meaningful advancements in vocational education and training across Pakistan. It is our sincere hope that the outcomes presented here will serve as a foundation for transformative change, empowering individuals, strengthening communities, and contributing to the nation's broader development goals.

2. List of Acronyms

AJK	Azad Jammu and Kashmir
CBT	Competency Based Training
CCJP	Career Counselling and Job placements
CONV	Conventional Training
DAE	Diploma of Associate Engineer
DIT	Diploma in Information Technology
FBR	Federal Board of Revenue of Pakistan
GB	Gilgit Baltistan
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GTTTC	Government Technical Teachers Training College
HVAC	Heating, Ventilation, and Air Conditioning
HVACR	Heating, Ventilation, Air Conditioning and Refrigeration
ICONSULT	International Consulting Associates
IT	Information Technology
KP	Khyber Pakhtunkhwa
LGITE	Lahore Garrison Institute of Technical Education
NAVTTC	National Vocational and Technical Training Commission
NVC	National Vocational Certificate
PEC	Pakistan Engineering Council
PKR	Pakistani Rupees
QA	Quality Assurance
SEO	Search Engine Optimization
TEVTA	Technical Education and Vocational Training Authority
TVET	Technical and Vocational Education and Training
UI	User Interface
UX	User Design

3. Key Definitions

Employment Rate:

The percentage of individuals actively participating in the Labor market who have secured employment. It is calculated using the formula:

Employment Rate

$$= \frac{(\text{Employed} + \text{Self-Employed})}{(\text{Employed} + \text{Self-Employed} + \text{Unemployed})}$$

This metric **excludes individuals** who are not seeking work, including those who indicate they **"do not want or need to work"** or are engaged in **"further education or training."**

Average Income:

The mean monthly earnings of individuals who report income from employment or self-employment. It is calculated by summing the total reported monthly incomes and dividing by the number of income-earning individuals.

Job Alignment:

The extent to which an individual's current employment (for wage earners) or business activity (for the self-employed) corresponds to the trade, field, or skillset in which they received formal training. This is based on response given by graduates.

Self-Employment:

A form of work in which individuals operate their own businesses or trades, rather than being employed by an organization. It includes freelance, entrepreneurial, and informal economic activities.

Employed:

An individual is considered employed if they are engaged in any form of paid work, whether full-time, part-time, contractual, or self-initiated. Employment status typically includes both formal and informal jobs.

Internship:

A temporary work placement, often undertaken by students or recent graduates, that provides exposure to professional environments and allows for the application of academic learning in real-world settings.

Theory-Practical Ratio:

The perceived balance between theoretical instruction and hands-on practical training, as reported by graduates. It reflects how well training programs integrate conceptual knowledge with applied skills.

Job Satisfaction:

The level of contentment reported by graduates regarding their current job or work. It captures their perceptions of income, working conditions, skill use, and overall fulfillment in their employment or self-employment.

CCJP Guidance:

Career Counselling and Job Placement (CCJP) guidance refers to support services provided by training institutes to help graduates explore career options, prepare for employment, and connect with job opportunities. It includes counselling sessions, job search assistance, and referrals to employers.

Job Search Duration:

The amount of time it takes for graduates to find employment after completing their training. It reflects the efficiency of Labor market entry and is influenced by industry demand, job readiness, and support services.

Daily Wage Labor:

A form of employment where individuals are paid on a daily basis for work performed, typically without formal contracts, job security, or employment benefits. It is common in informal sectors and short-term manual jobs.

4. Executive Summary

The "Tracer Study of TVET Graduates (2023)," commissioned by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and conducted by International Consulting Associates (IConsult), provides an extensive evaluation of employment outcomes, socio-economic impacts, and training alignment with labor market demands among TVET graduates in Pakistan. Utilizing a robust mixed-method approach, this study surveyed 30,975 graduates—representing approximately 10% of the total 298,924 graduates from 2023—via stratified random sampling across diverse regions, trades, and demographic categories.

The surveyed cohort exhibited notable gender diversity, with 61% male and 39% female participation, reflecting progressive strides toward gender inclusivity within a traditionally male-dominated sector. Predominantly young adults aged 19–25 comprised 72% of respondents, indicating TVET's crucial role in facilitating early-career employment opportunities. Educational backgrounds were relatively strong, with 72% having at least secondary education. Moreover, approximately 20% of graduates had already earned university degrees, demonstrating TVET's complementary role in enhancing practical skill sets alongside traditional academic qualifications.

Overall, the employment rate for TVET graduates stood at 50%, with males and females both reporting an average employment rate of 50%. However, a notable gender income gap persists: average monthly income for male graduates is PKR 32668, compared to PKR 20,876 for female graduates. Employment outcomes varied across training types. Competency-Based Training (CBT) graduates recorded a 52% employment rate with an average income of PKR 26,355. Conventional training graduates reported a slightly lower employment rate of 48%, but with higher earnings at PKR 29,552 per month. Diploma of Associate Engineer (DAE) graduates achieved a 49% employment rate, with an average monthly income of PKR 30,585. Diploma in Information Technology (DIT) graduates reported a 49% employment rate and earned PKR 31,691 on average per month. Notably, High-Tech training graduates had an employment rate of 53%, and while this figure aligns with the overall average, their earnings were significantly higher—averaging PKR 42,595 per month. This reinforces the increasing market premium for specialized digital and technical skills in Pakistan's evolving labor market.

Regional disparities were notably pronounced, with Punjab accounting for the majority (65%) of graduates. Urban centers such as Islamabad, Karachi, and Lahore provided markedly higher income opportunities compared to rural regions, underscoring uneven economic opportunities. Trade-wise regional disparities further amplified these inequalities. For instance, DAE and High-Tech graduates in urban regions such as Lahore, Karachi, and Islamabad consistently reported higher employment rates and income levels compared to their rural counterparts.

Similarly, CBT and conventional trade graduates from urban districts enjoyed better employment prospects and earnings due to stronger industry linkages and market demand.

Most graduates secured employment within six months post-training; however, approximately 9% faced prolonged job searches exceeding one year, emphasizing the need for improved market linkages and career counseling services. Overall job satisfaction was relatively high at 82%, although a significant minority expressed dissatisfaction, primarily driven by low wages and limited opportunities for career advancement. Furthermore, approximately 40% of graduates ventured into self-employment, underscoring the critical need for robust entrepreneurial support mechanisms.

Employer feedback highlighted strong general preparedness (74%) of TVET graduates, although notable gaps were observed in theoretical knowledge, practical skills, and digital competencies. Employers recommended enhancing practical training, incorporating advanced digital skills, and strengthening industry-academia linkages to better align graduates' capabilities with evolving industry demands.

Institutional assessments revealed challenges in accreditation, institutional capacity, and effective industry collaboration. There was a clear need for improved entrepreneurship support mechanisms, particularly given the high self-employment rates among graduates. Institutional capacity-building, including upgrading infrastructure, updating curricula, and improving instructor quality, was strongly recommended.

The study emphasizes several key recommendations aimed at addressing identified challenges: bolstering practical, industry-aligned training; enhancing career counseling and job placement services; addressing regional and gender disparities through targeted, inclusive policies; and promoting entrepreneurship training and support.

In conclusion, TVET programs are making substantial contributions to improving employability and income generation in Pakistan. However, achieving optimal socio-economic impact requires strategic interventions focused on curriculum modernization, enhanced industry collaboration, targeted gender inclusivity, improved regional accessibility, and strengthened institutional capacities.

5. Objectives of the Study

The key objective of the assignment was a comprehensive evaluation to systematically analyse employment outcomes, industry alignment, and socio-economic impacts of TVET programs in Pakistan, thereby contributing to evidence-based policy formulation and program enhancement.

The key research questions which are covered in this study are as follow:

1. What is the rate of employment and the average income of the graduates across different trades, districts and gender-wise?
2. What types of job positions do TVET graduates typically hold, and how do these positions align with their training?
3. How well do TVET graduates perceive the alignment between their training and the skills demanded by the industry?
4. How satisfied are the graduates with the quality of training and services provided?
5. What are the outcomes of graduate employment on household economy?

The specific objectives of the assignment are as under:

- Determine the percentage of TVET graduates who have secured employment within a specified timeframe after completing their programs.
- Identify the types of jobs and industries in which TVET graduates are employed.
- Examine the level of alignment between graduates' employment and their field of study.

- Measure the level of job satisfaction among TVET graduates in their current employment.
- Evaluate how well graduates perceive their acquired skills and knowledge being utilized in their professional roles.
- Determine the percentage of TVET graduates pursuing further education or additional training.
- Explore the percentage of TVET graduates who venture into entrepreneurship or self-employment.
- Examine the average salary range and income levels of TVET graduates and compare it with other levels or trades.
- Assess how well TVET graduates perceive the alignment between their training and the skills demanded by the industry.
- Gather feedback from employers regarding the relevance of TVET training to current industry requirements.

6. Limitations for the Study

The Tracer Study of TVET Graduates (2023) provides valuable insights into employment outcomes, but several limitations were encountered during data collection. These challenges, ranging from incomplete data to methodological constraints, must be considered when interpreting the findings.

A major challenge was the poor quality of contact information provided by institutions. Many phone numbers were outdated, incorrect, or disconnected, particularly in Khyber Pakhtunkhwa (KP), Punjab, and rural areas. Although the study aimed to reach 10% of around 300,000 graduates, data inaccuracies led to significant outreach difficulties. Alternate respondents were identified where possible, but maintaining accurate graduate records remains a challenge.

Telephonic surveys, while practical for large-scale data collection, had several limitations. Respondents often gave brief, incomplete answers due to time constraints or discomfort with phone interactions. In regions unfamiliar with such surveys, trust issues led to hesitancy in sharing information. Network connectivity problems in remote areas frequently interrupted calls, requiring multiple attempts, while poor audio quality in some locations affected response accuracy. Additionally, the lack of non-verbal cues restricted the enumerators' ability to gauge engagement and probe deeper into responses, limiting qualitative insights.

Many graduates were reluctant to share employer details, making it difficult to directly contact organizations for feedback. Privacy concerns led to minimal employer participation, restricting insights into skills utilization, workplace challenges, and training alignment with industry needs. The lack of institutional engagement also limited the depth of evaluation regarding training effectiveness and industry relevance.

The study relied on self-reported data, introducing the risk of response bias. Graduates may have overstated satisfaction levels or employment success to project a positive image, while employers could have withheld critical feedback to maintain good relations with training institutions. Cultural factors and the telephonic format may have further influenced responses, with participants providing socially desirable answers rather than candid feedback. The absence of in-person interviews also reduced opportunities for clarification and probing deeper into ambiguous responses.

Despite these limitations, the study offers a comprehensive overview of TVET graduate employment outcomes, identifying key trends and areas for improvement in Pakistan's vocational training landscape.

7. Methodology

The project adopted a structured methodology to ensure efficient and comprehensive data collection.

1. Tool Development and Questionnaire Design

The first step involved designing three targeted questionnaires for graduates, employers, and institutions. The graduate survey focused on employment outcomes and feedback for program improvement, while the employer and institutional surveys captured insights into job market alignment and institutional performance. These questionnaires were reviewed and validated by the National Vocational and Technical Training Commission (NAVTTC), ensuring alignment with national TVET priorities and data standards. Additionally, a customized data collection software was developed—with NAVTTC's strategic guidance—to enable real-time data entry, secure storage, and streamlined survey management.

2. Sampling Approach

A Stratified Sampling Approach was used to select a representative sample, ensuring balanced representation across key variables such as region, gender, trades and district. The sample was categorized into two key training types—CBT and Conventional Trades—to facilitate comparative analysis.

Detailed sampling plan is attached as annex to the report.

Survey Type	Sampling Approach	Selection Criteria	Sample In Numbers
Graduates Survey	Stratified Random Sampling (10% of total graduate population)	10% stratification by region, gender, Trades and district	Total Graduates Surveyed **30,975**
Employers Survey	10% of employed graduates identified in the Graduate Survey	Employer details provided by graduates.	Total Employers Surveyed **658**
Institutes Survey	Two institutes per region considering high as well as low performing	Institutes with at least 50 graduates	Total **10** Institutes Surveyed

3. Enumerator Selection and Training

Enumerators were carefully selected based on their experience in survey research and similar nature assignment to ensure high-quality data collection. A two-day intensive training exercise was conducted, covering key areas such as project objectives, questionnaire structure, software usage, and data recording procedures. Enumerators were also trained in best practices for telephonic surveys, response handling techniques, and cultural sensitivity to enhance engagement and data accuracy. Given Pakistan's linguistic diversity, enumerators were strategically assigned datasets based on their regional language proficiency to facilitate clear communication with respondents. Urdu-speaking enumerators managed surveys in Sindh, Gilgit-Baltistan, AJK, and ICT, while Punjabi-speaking enumerators covered Punjab. In KP and Balochistan, Pashto-speaking enumerators were deployed, and Chitrali-speaking enumerators handled data collection in Chitral. This language-based allocation ensured that respondents could comfortably participate in the survey, leading to improved response rates and data reliability.

4. Pilot Testing and Adjustments

A one-week pilot was conducted before full-scale implementation to test survey feasibility, response rates, and the logical flow of the questionnaire. Supervisors monitored enumerator engagement techniques, response accuracy, technical and operational challenges, and the average survey completion time. The feedback from this phase led to necessary refinements, improving question clarity and optimizing data collection strategies. The pilot phase helped address potential challenges and ensured the smooth execution of the survey.

5. Full-Scale Data Collection and Monitoring

Following the successful pilot test and training, full-scale telephonic data collection was launched across various regions of Pakistan. Enumerators were assigned structured datasets containing TVET graduates' details and conducted telephone-based surveys using a real-time survey platform. This system enabled immediate data entry, minimizing data loss and entry errors. To maintain accuracy and transparency, survey operations were closely monitored, tracking key performance metrics such as the number of calls made, the number of graduates reached, and the number of completed survey responses. All calls were recorded to ensure quality control and allow for audit and verification of survey interactions. Additionally, non-response reasons such as inactive phone numbers and refusals were recorded to assess data collection efficiency. Enumerators accessed their datasets through secure logins to ensure confidentiality and data security.

6. Quality Assurance and Data Validation

A dedicated QA team played a crucial role in maintaining data integrity by conducting randomized response verifications and consistency checks. Weekly reports were generated to track survey progress, enumerator performance, response accuracy, and potential data quality issues. The QA team identified errors and provided corrective feedback to ensure high data reliability. Enumerators meeting accuracy and response targets with minimal errors were recognized and rewarded, reinforcing quality standards and encouraging best practices in data collection.

7. Data Analysis and Finalization

Upon the completion of data collection, a comprehensive statistical analysis was conducted to assess employment trends, income variations, and training effectiveness. The analysis included pre- and post-training employment comparisons to evaluate the impact of TVET programs on employability and income growth. Gender-based employment trends, regional employment variations, and trade-specific employment outcomes were examined to provide a holistic view of job market alignment. The findings were structured to present quantitative insights alongside contextual explanations, making the data easily interpretable. The final dataset highlighted employment outcomes, identified gaps, and provided evidence-based recommendations to enhance the effectiveness of TVET programs in improving graduate employability and economic stability.

8. Results and Findings

The study covers a total population of 298,924 TVET trainees that graduated in 2023 through programmes covered under the scope of this study. For this study, the consultant conducted a comprehensive survey of 30,975 graduates, representing approximately 10% of the national cohort, based on stratified sampling, including 36.70% graduates from CBT programmes and 63.30% from conventional training programmes.

8.1 Demographic Analysis Overview

This section provides a detailed demographic breakdown of the TVET graduates surveyed. It covers gender, age, education level, geographic distribution, trade specialization, socioeconomic background, urban/rural origin, and prior work experience. Each aspect is analysed with statistical summaries to set the stage for deeper insights in subsequent research questions

8.1.1 Gender representation

Gender balance in the graduate pool leans towards male, though females form a substantial minority. Out of 30,975 total graduates surveyed, approximately 61% are male (about 19,036 individuals) and 39% are female (around 11,939 individuals).

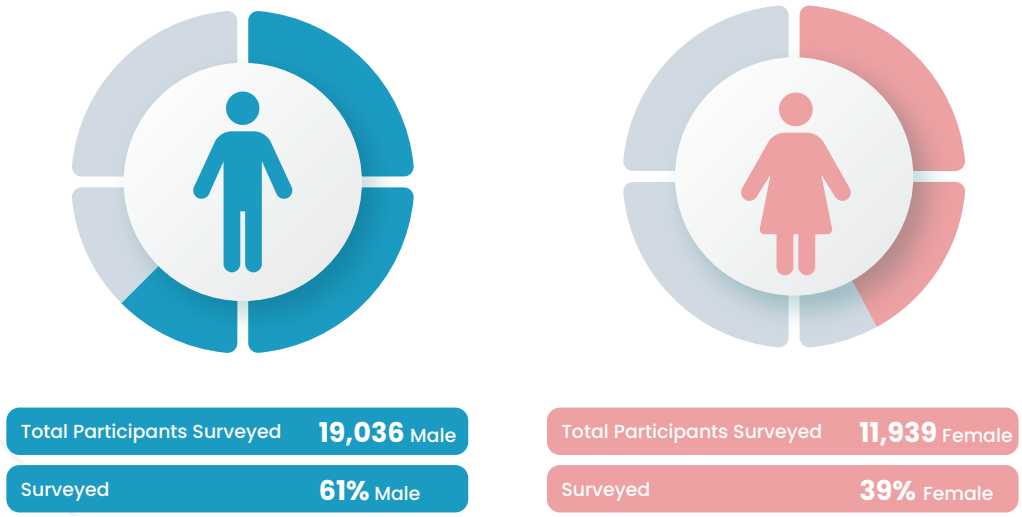


Figure 1: Gender Representation of Graduates

The data indicates a male majority in TVET enrolment, with roughly a 3:2 ratio of males to females. This suggests that while men participate more in these technical and vocational programs, women's representation is significant – nearly two out of every five graduates are female. Such female participation is notable in a traditionally male-dominated technical training sector, reflecting efforts to include women in skill development. The gender gap is present but not extreme, pointing to progress toward gender inclusion, though there is still room to improve female enrolment to reach parity.

8.1.2 Age Distribution

The graduates are predominantly young, with the vast majority falling into youth and early adult age ranges. The most common age group is 19–25 years, comprising about three-quarters of the graduates. There is a smaller representation of older adults.
This distribution shows that the TVET program is primarily serving young adults (18-25). The 19–25 age bracket dominates, suggesting most trainees join shortly after secondary education. A significant number of late teens (15–18) are also enrolling, possibly those who started skills training instead of or alongside higher secondary school. Participation drops sharply beyond age 35 – older individuals are very few, indicating that mid-career adults or seniors rarely engage in these training programs. Overall, the age profile highlights a youth-centric enrolment, which is typical for vocational training initiatives targeting school-leavers and early-career individuals

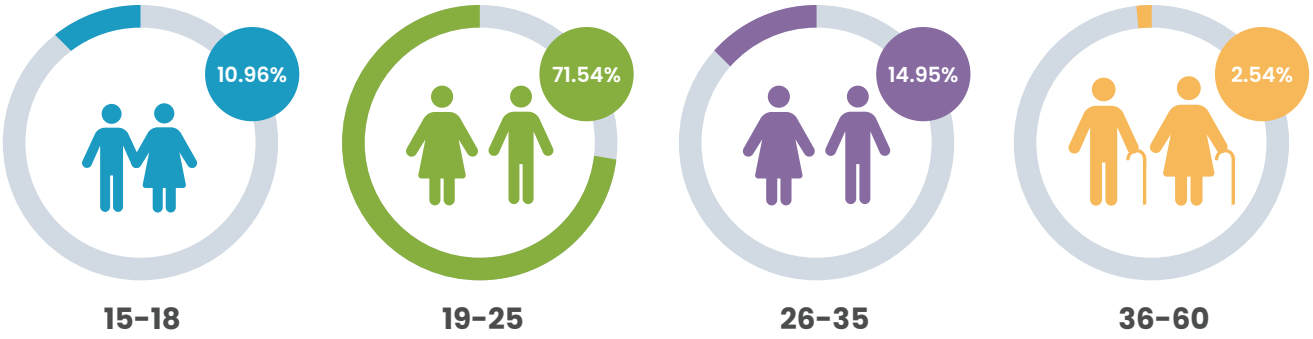


Figure 2: Age distribution of Graduates

8.1.3 Educational Background (pre-TVET)

The highest education level completed before enrolling in TVET varies, but most graduates had at least a secondary school qualification. A large majority finished high school, and a considerable segment even held college degrees, whereas only a small fraction had minimal education. Below is the breakdown of participants' education before joining the TVET program

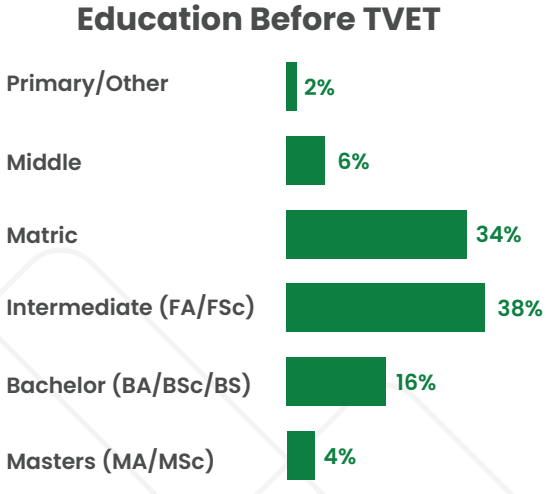


Figure 3: Education Before TVET

- **Secondary education (Matric or Intermediate)**

72% of graduates. The largest group had completed Matric (10th grade) or Intermediate (12th grade FA/FSc). Specifically, about 34% were Matric pass and 38% had Intermediate qualifications. This indicates that most trainees entered TVET after finishing high school.

- **Tertiary education (Bachelor's or Master's)**

20% of graduates. About 16% held a Bachelor's degree (BA/BSc/BS) and an additional ~4% had a Master's (MA/MSc). A significant minority pursued TVET despite already having higher education, perhaps to gain practical skills or due to limited job opportunities with their degrees.

- **Below secondary (Middle school or less)**

Around 6% had only a Middle school education (roughly 8th grade), ~0.7% primary education, and ~0.3% were illiterate with no formal schooling. This is a small subset, indicating the program had relatively few trainees with very low education levels.

- **Others/Unspecified**

1% indicated "Others" or did not specify their education level.

The educational profile suggests that TVET programs primarily attract individuals with a basic high-school level education. Nearly three-quarters had completed secondary school, meaning they had the foundational schooling to build upon with technical skills. It's notable that one in five graduates were actually college-educated – these individuals might have sought vocational training to supplement their academic degrees or to switch to a more job-oriented skill. Meanwhile, those with less than matric-level education was a small minority, implying either that entry requirements or self-selection favoured those with more schooling, or that outreach to the less educated might be limited. Overall, the cohort had a solid educational foundation, with very few coming in completely uneducated, which could influence how they absorbed technical training.

8.1.4 Regional & District-Wise Representation

Geographic distribution of the graduates spans all major regions of the country, though it is not even – some provinces contributed far more graduates than others. Participation by region/province is heavily skewed toward Punjab, followed by KP, with fewer from Sindh and Balochistan, and minimal numbers from the northern territories. Here is the regional breakdown:

Punjab	62.4% (19,332 Individuals)
KP	21.4% (6,625 graduates)
Sindh	8.0% (2,467 graduates)
Balochistan	3.8% (1,173 graduates)
Islamabad	2.8% (868 graduates)
AJ&K	1.2% (372 graduates)
GB	0.4% (138 graduates)

Figure 4: Regional Wise Representation

This shows Punjab dominating the cohort – almost two-thirds of all graduates are from Punjab. KP also has strong representation (about one-fifth). In contrast, Sindh and Balochistan together make up only ~12% of the graduates, which is relatively low given their population shares, possibly indicating lower enrolment or fewer programs in those areas. The federal capital and the two smaller regions (AJK, GB) contribute only a small fraction of the graduates.

Looking more granularly at the district-level, the data includes graduates from 145 different districts across the country, illustrating wide outreach. However, the numbers per district vary widely. The highest concentrations of graduates are from major urban/metropolitan districts:

Lahore – 2,452 graduates
(the single largest source district)

Rawalpindi – 1,644 graduates

Peshawar – 1,443 graduates

Faisalabad – 1,376 graduates

Karachi – 1,265 graduates
(note: Karachi's total may be split across multiple districts in reality, but collectively a large number)

These top five districts alone account for about 8,180 graduates (~26% of all graduates). Other notable districts in the top 10 include Multan (~906), Rahim Yar Khan (~872), Islamabad (868), Gujranwala (~765), and Sargodha (~707). Most of these are well-populated cities, indicating that the program had a strong urban footprint.

On the other end, many smaller or remote districts have very few graduates. Dozens of districts have only single-digit graduate counts. For instance, districts like Harnai, Hunza, Jhal Magsi, or Barkhan have fewer than 5 graduates each (in fact some have only 1 graduate in the dataset). This suggests that while the program reached a broad geography, the depth of penetration in remote rural districts was limited. The bulk of participants came from key cities and towns.

Geographically, the TVET graduates are widespread, covering all provinces/regions, but the participation is concentrated. Punjab's outsized share could reflect its larger population and greater number of training institutes or programs available there. KP's strong showing is notable, possibly due to targeted efforts or high youth interest in that province. Balochistan, being sparsely populated and with fewer training facilities, unsurprisingly has a small share. The presence of graduates from nearly 145 districts – including far-flung areas of AJK, GB, and Balochistan – is encouraging for national reach, but the distribution highlights the need for more balanced regional development. Major urban districts clearly served as hubs for TVET enrolment, whereas rural and less developed districts saw relatively fewer participants, possibly due to access issues or fewer training centres in those areas.

8.1.5 Trade Specialization Breakdown

The dataset covers a wide range of training trades and specializations pursued by graduates. It includes 72 distinct trades under CBT, 313 under conventional training, 48 under DAE, 64 under High-Tech, and one DIT specialization—totalling 498 unique trade types. There is a clear disparity in the popularity of these trades—while a few courses attracted thousands of students, many others had only a handful of

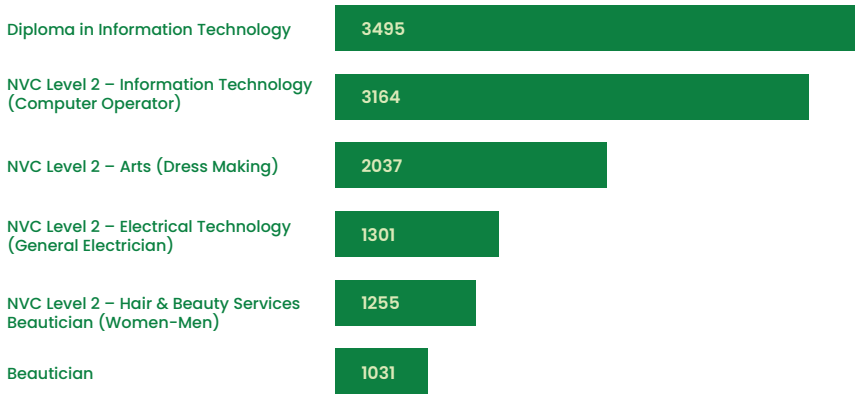


Figure 5: Trade Specialization Breakdown

enrolees. Below are the most popular training fields (by specific course name), along with the number of graduates in each:

- **Diploma in Information Technology (DIT)**

3,495 graduates – the single most popular course. This reflects a high interest in comprehensive IT skills.

- **NVC Level 2 – Information Technology (Computer Operator) – (CBT)**

3,164 graduates – another IT-related certification, indicating the strong demand for computer skills.

- **NVC Level 2 – Arts (Dress Making) – (CBT)**

2,037 graduates – a very popular vocational skill, especially among women, focusing on sewing and dressmaking.

- **NVC Level 2 – Electrical Technology (General Electrician) – (CBT)**

1,301 graduates – a popular trade in the electrical field, training general electricians.

- **NVC Level 2 – Hair & Beauty Services (Beautician) – (CBT)**

1,255 graduates – a cosmetology/beauty parlour skills course, also highly sought after.

Close followers include ***Beautician (Conventional)*** with 1,036 graduates (3%), and High-Tech courses such as ***Digital Marketing & Search Engine Optimization – SEO*** (906 graduates, 3%), ***Certificate in Computer Applications*** (824 graduates, 3%), ***E-Commerce*** (695 graduates, 2%), and ***Graphic Designing (UI/UX Designer)*** (694 graduates, 2%).

These figures confirm that IT and computer-related trades dominate graduate interest, capturing several top positions (e.g., DIT, computer operator, digital marketing). Meanwhile, traditional trades like tailoring, electrical work, and beauty services also remain highly relevant, indicating strong market demand across both digital and conventional domains.
Conversely, the least popular training fields were highly specialized or niche, often with fewer than 50 graduates each. Trades such as "Fitter (Pipe)," "Cabinet Making (Grade II)," "Laboratory Analyst," or "Auto Mechanic (Petrol)" reflect low enrolment, possibly due to limited market demand, awareness, or geographic concentration. These may have been localized pilots or less promoted offerings.

Overall, the specialization landscape reveals that TVET interest is concentrated around a focused cluster of trades. Digital and IT skills emerge as the clear frontrunners, supported by traditional self-employment-enabling trades like tailoring and beautician services. Meanwhile, the very low uptake of many specialized trades points to the need for either better targeting or market demand validation. The dataset suggests that while the program's diversity was wide-ranging, its practical impact and appeal were concentrated in a handful of high-demand, high-accessibility trades.

8.1.6 Socioeconomic Background

Most graduates came from low-income or lower-middle-income backgrounds, as evidenced by their self-reported average monthly income before starting the TVET program. Notably, a large portion of respondents had no personal income at all prior to TVET (since many were students or unemployed). Among the ~2,190 graduates who did report an income before training (i.e., those who had been working in some capacity pre-TVET), the distribution is as follows:

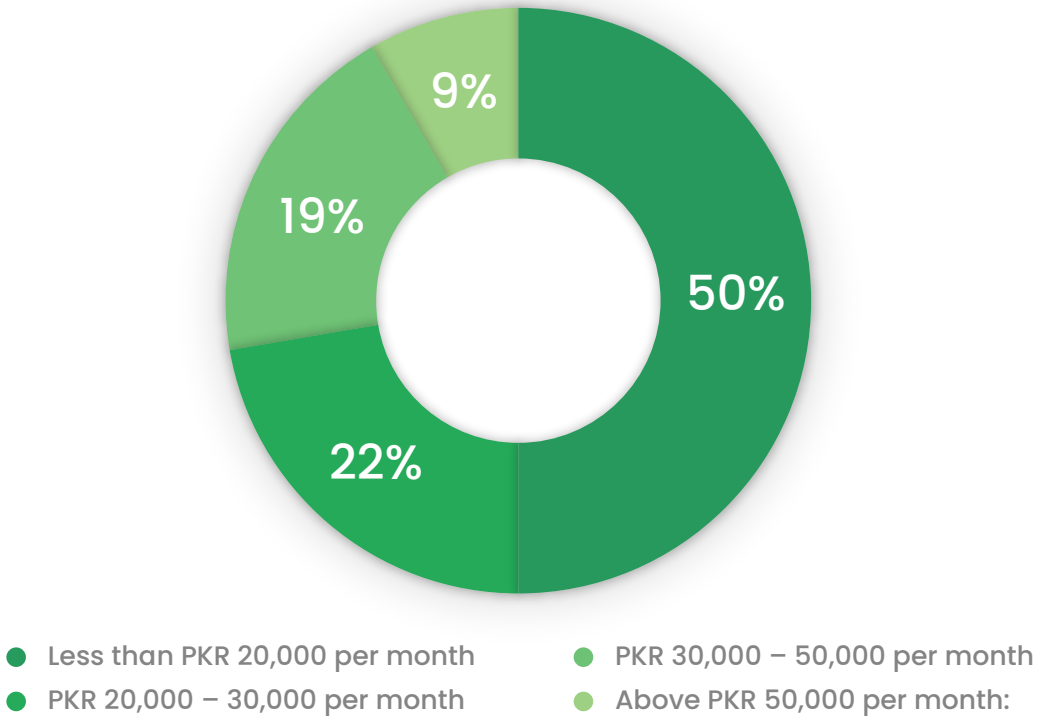


Figure 6: Average Income Level (Pre-TVET)

- **Less than PKR 20,000 per month**

~50% of those who had prior income (about 1,084 individuals). This indicates that half of the employed entrants were earning under 20k, which is a relatively low monthly income, suggesting a modest economic background.

- **PKR 20,000 – 30,000 per month**

~22% (around 479 individuals). So roughly an additional one-fifth were in this slightly higher, but still low, income bracket.

- **PKR 30,000 – 50,000 per month**

~19% combined. About 12% earned 30k–40k and 7% earned 40k–50k. These can be considered middle-income earners by local standards, but they form less than a fifth of those with prior income.

- **Above PKR 50,000 per month**

~9% combined. Only around 9% of pre-TVT earners (approximately 206 people) made more than 50k monthly, and within that, a very small subset (just ~2.5% of all who reported income, about 55 individuals) earned more than PKR 90,000. High income earners were rare in this graduate group.

It's important to note that the majority of the 30,975 graduates did not report any income before TVET, because they were not working (they were unemployed or full-time students prior to enrolling). This implies that many were financially dependent (on family or others) before joining the program. The fact that among those who did work, nearly 3 in 4 were making below 30k, underscores that most trainees came from financially constrained backgrounds.

Overall, the socioeconomic profile painted a financially modest background. The bulk of TVET graduates either had no prior earnings or very low earnings, indicating that the program is serving individuals who might be economically vulnerable or at the start of their earning potential. This highlights the importance of these vocational programs in potentially uplifting income prospects. The lack of high-income individuals suggests that wealthier or securely employed people are less likely to enrol in TVET (they may pursue higher education or not need vocational retraining). The inference suggest that many students likely relied on either family support or the relatively low cost of these programs to participate.

8.1.7 Urban vs Rural Enrolment

The urban or rural origin of graduates were examined to assess the balance between those coming from major cities and those from smaller towns or villages. The evidence suggests a broad mix, with a substantial portion from urban centres and also a large number from rural areas. Roughly, the split is about 2:3 between urban and non-urban backgrounds:

40%
Urban backgrounds

A significant number of graduates hail from major cities or urban districts. In fact, about 40% of all graduates come from the top 10 districts by count, which are mostly large cities (Lahore, Karachi, Rawalpindi, Faisalabad, Peshawar, Multan, etc.). This indicates that nearly half of the graduates can be considered from urban areas. These urban-origin students benefit from proximity to training institutes and greater awareness of programs, which likely contributed to their high numbers.

60%
Rural or small-town backgrounds

The remaining 60% of graduates come from outside the big metropolitan hubs. They are spread across a multitude of smaller cities, towns, and rural districts nationwide. The long tail of districts with smaller counts (from a few dozens to single digits of graduates) signifies the rural reach of the TVET initiative. Many participants from these areas might have travelled to nearby towns for training or participated in local vocational centres if available.

Table 1: Urban vs Rural Enrolment
Note: Urban and rural district are specified in annexure 10.5

The urban-rural enrolment balance shows that TVET programs attracted a broad demographic, not just city dwellers. There is a strong urban representation, which is expected since cities have more training centres and larger youth populations. However, the fact that 60% of the participants are from non-urban areas is encouraging in terms of inclusivity and outreach. This means the program did manage to enrol thousands of rural youths, which is important for equitable development. It also implies potential differences in context – urban students might have had better prior education and exposure, whereas rural students might have faced more challenges in access.

8.1.8 Prior Work Experience

Finally, we consider how many graduates had work experience before joining the TVET program versus how many were entering the workforce for the first time through this training. The data on "Employment Before TVET" categorizes each person's status prior to enrolment. The clear result is that the vast majority of these graduates were first-time job seekers, with only a minority having any prior employment.

85% of graduates had no job experience

First-time entrants (No prior work): Roughly 85% of graduates had no job experience before starting their TVET training. This group includes those who were recorded as "Student" or "Unemployed" prior to TVET – in numbers, about 21,177 were students and 4,850 were unemployed. These individuals essentially used the TVET program as their entry point into the job market, as they had not held a job before. They likely joined right after schooling or after a period of joblessness, hoping to gain skills for their first employment.

15% of graduates had some form of employment experience

Only about 15% of graduates had some form of employment experience before enrolling. Within this, approximately 1,749 (5.7%) were previously employed in jobs, 1,233 (4.0%) were self-employed (perhaps running small businesses or family trades), and 445 (1.4%) worked as daily wage labourers before TVET. An additional small category (around 4.3% labelled "Other" prior status, ~1,322 people) could include miscellaneous situations (perhaps informal work, homemakers, etc.). Even if we include those "Other" cases as part of having some prior engagement, the total with any work experience does not exceed 15–16%.

This indicates that the TVET program largely catered to new workforce entrants. The fact that about five out of every six graduates had never held a job before implies that the training was their first practical step toward employment. Many were likely fresh out of school (as reflected by the large "Student" category) and used the vocational training to become job-ready. The relatively small segment that had prior jobs might have joined to up-skill or re-skill – for example, someone employed in a low-skill job or a self-employed individual (like a small shop owner) might enrol in TVET to gain additional skills for a better livelihood. The dominance of first-time workers underscores the importance of these programs in youth employment strategies. It also means that outcomes for most graduates will be about obtaining that first job post-training. Those few with prior experience might have different outcome patterns (e.g., improvement in job quality or income). But as a foundational observation, we see the TVET graduate pool is primarily composed of inexperienced youth gearing up for their entry into the job market.

8.2 Employment Rate and Average Income

The employment survey data provides a detailed overview of job outcomes for TVET graduates across Pakistan, distinguishing between graduates of conventional trades and CBT trades. Overall, a significant portion of graduates have entered employment or self-employment, though outcomes vary considerably by region, trade, and gender. Below is detailed analysis of employment rate and average income across different trades, regions and genders:

8.2.1 Employment Rate and Income Trends Across Regions, Trades and Genders

A comparative analysis of employment rates and average incomes across provinces reveals substantial regional disparities between CBT, Conventional, DAE, DIT and High-Tech graduates

CBT						
Provinces	Male		Female		Total	
	Employment rate	Average Income	Employment rate	Average Income	Employment rate	Average Income
KP	50%	27,914	44%	17,344	47%	22,629
PUNJAB	51%	27,871	46%	16,875	49%	22,373
SINDH	61%	35,745	43%	22,027	52%	28,886
AJ&K	49%	27,500	59%	21,354	54%	24,427
GB						
ICT	58%	41,786	52%	28,846	55%	35,316
BALOCHISTAN	56%	19,000	50%	30,000	53%	24,500
AVERAGE CBT	**54%**	**29,969**	**49%**	**22,741**	**52%**	**26,355**

Conventional						
KP	44%	31,560	41%	20,781	43%	26,171
PUNJAB	56%	34,522	50%	20,139	53%	27,331
SINDH	57%	33,860	44%	21,260	51%	27,560
AJ&K	42%	37,500	32%	35,000	37%	36,250
GB	48%	47,750	69%	18,182	59%	32,966
ICT	46%	41,500	54%	23,000	50%	32,250
BALOCHISTAN	47%	30,373	46%	18,304	47%	24,339
AVERAGE CON	**49%**	**36,724**	**48%**	**22,381**	**48%**	**29,552**

Table 2: Employment Rate and Income Trends -CBT vs Conventional

Indicates lowest value in the column

Indicates highest value in the column

DAE						
Provinces	Male		Female		Total	
	Employment rate	Average Income	Employment rate	Average Income	Employment rate	Average Income
KP	46%	31,000	67%	20,000	57%	25,500
PUNJAB	54%	38,021	42%	31,154	48%	34,588
SINDH						
AJ&K						
GB						
ICT	43%	31,667			43%	31,667
BALOCHISTAN						
AVERAGE DAE	**48%**	**33,563**	**55%**	**25,577**	**49%**	**30,585**

DIT						
KP	48%	33,150	51%	21,992	49%	31,691
PUNJAB						
SINDH						
AJ&K						
GB						
ICT						
BALOCHISTAN						
AVERAGE DIT	**48%**	**33,150**	**51%**	**21,992**	**49%**	**31,691**

High Tech						
KP	48%	45,857	60%	31,176	54%	38,517
PUNJAB	61%	44,310	43%	23,845	52%	34,078
SINDH	65%	46,239	52%	26,714	59%	36,477
AJ&K	31%	55,000	55%	30,000	43%	42,500
GB	56%	71,000			56%	71,000
ICT	63%	55,232	68%	32,414	66%	43,823
BALOCHISTAN	47%	39,191	42%	24,355	45%	31,773
AVERAGE High Tech	**53%**	**50,976**	**53%**	**28,084**	**53%**	**42,595**
TOTAL AVERAGE	**50%**	**36,876**	**50%**	**24,155**	**50%**	**32,156**

Table 3: Employment Rate and Income Trends - DAE, DIT and High-Tech

Note: Data from other provinces is excluded based on a minimum threshold of 20 graduates per region for valid comparison, which prevents meaningful cross-regional assessment.

Indicates lowest value in the column

Indicates highest value in the column

Employment rates and income levels for TVET graduates vary significantly across provinces, training types (CBT, Conventional, DAE, DIT, High Tech), and gender.

In CBT, employment rates range from 47% in KP to 55% in ICT. ICT tops income levels with PKR 35,316, followed by Sindh at PKR 28,886. Balochistan, while showing a decent employment rate of 53%, registers the lowest average income at PKR 24,500. Punjab (49%, PKR 22,373), KP (47%, PKR 22,629), and AJK (54%, PKR 24,427) all reflect relatively modest labour market absorption. These figures suggest that urban-industrial centers like ICT and Sindh provide better wage opportunities, while employment in more remote areas may skew toward lower-income segments.

In Conventional training, GB leads with a 59% employment rate and an average income of PKR 32,966. Punjab (53%, PKR 27,331) and Sindh (51%, PKR 27,560) follow with stable outcomes. ICT, while at 50% employment, shows strong earnings at PKR 32,250—underscoring high-value digital work opportunities. AJK presents a unique picture: despite just 37% employment, it reports a solid average income of PKR 36,250. In contrast, Balochistan again trails (47% employment, PKR 24,339 income), reflecting persistent structural constraints.

Gender disparities are evident across both tracks. In CBT, male employment is highest in Sindh (61%) and ICT (58%). Female employment peaks in AJK (59%) but is lowest in Sindh (43%). ICT reveals a sharp wage gap: PKR 41,786 for males vs. PKR 28,846 for females. In Balochistan, females earn more (PKR 30,000) despite lower average male earnings (PKR 19,000)—suggesting niche employment for women in fewer but better-paying jobs.

In Conventional training, male employment is highest in Sindh (57%) and Punjab (56%), with females again peaking in GB (69%) and lowest in AJK (32%). GB shows the widest wage gap: PKR 47,750 for men vs. PKR 18,182 for women. AJK females, however, earn PKR 35,000 despite low participation, pointing to better-paying specialized roles. ICT males earn PKR 41,500 vs. PKR 23,000 for females, confirming persistent gender gaps in high-income segments.

DAE graduates show strong employment in KP and Punjab, with KP male employment at 46% and female employment at 67%. Punjab performs well (48% overall, PKR 34,588), while ICT remains modest (43%, PKR 31,667). Gender disparities persist: female income is PKR 31,154 in Punjab and PKR 20,000 in KP, while ICT records uniform male-female employment and income, though at a low 43%, suggesting limited sectoral absorption.

DIT graduates display more uniform but limited outcomes. KP reports 49% employment and PKR 31,691 income. Female employment stands at 51%, suggesting a degree of gender parity.

High-Tech programs outperform others in both employment and income. ICT tops the income chart at PKR 43,823 and employment at 66%. Sindh follows with 59% employment and PKR 36,477 income. GB males report an exceptionally high income of PKR 71,000, though female employment there is 0%. Punjab (52%) and KP (54%) show robust performance, but female income in Punjab is still much lower (PKR 23,845 vs. PKR 44,310 for males), reinforcing wage gaps.

At the national level, the average employment rate across all training types is 50%, with males at 50% and females at 50%. Average male income stands at PKR 36,876, while female income lags at PKR 24,155—highlighting a significant wage gap. Overall average income for all graduates is PKR 32,156.

These trends reveal how regional economic structures, industrial maturity, and socio-cultural norms shape outcomes. Urban centers such as ICT, Sindh, and Punjab consistently deliver stronger results. In contrast, Balochistan and AJK face structural bottlenecks that limit both employment and income growth. Gender disparities remain a persistent challenge, particularly in traditional regions with limited institutional support. These findings underscore the urgent need for labour-market aligned curricula, targeted gender inclusion, and robust employer engagement strategies to maximize the impact of TVET.

8.2.2 Employment Rate Trade Wise – Top 10

This section presents a comparative analysis of employment outcomes for graduates across CBT, Conventional, DAE, and High-Tech programs, based on the top 10 most popular courses in each stream (ranked by employment rate). It highlights key trends in employability and income disparities across technical, service-oriented, and digital trades, offering insights into Labour market performance.

CBT	Average Income	Employment rate		Average Income	Conventional
NVC Level 2 in Hand Embroidery	15,556	62%	54%	35,179	Graphic Designing (UI/UX Designer)
NVC Level 2 in Electrical Technology (General Electrician)	30,525	55%	50%	18,933	Beautician
NVC Level 2 in Automobile Technology (Motorcycle Mechanic)	24,329	55%	49%	22,206	Clinical Assistant (14 Months)
NVC Level 2 in Arts (Dress Making)	15,960	52%	48%	31,099	Graphic Design and Video Editing
NVC Level 2 in Mechanical Technology HVACR	27,480	50%	47%	16,493	Fashion Design & Dress Making
NVC Level 2 in Electronic Home Appliances Technician (Electronic Technician)	25,432	50%	46%	18,060	Domestic Tailoring
NVC Level 2 in Hair & Beauty Services - Beautician (Women-Men)	17,661	47%	46%	25,000	Computer & Electronics
NVC Level 2 in Information Technology (AutoCAD)	38,403	46%	45%	27,895	Graphic Design (Print Media)
NVC Level 3 in Information Technology (Web Designing and Development)	28,191	44%	43%	18,036	Beauty Therapy, Hair Styling and Skin Care
NVC Level 2 in Information Technology (computer Operator)	26,194	41%	36%	30,098	Computerized Accounting (Peachtree; QuickBooks)

Table 4: Employment Rate Trade Wise - CBT vs Conventional
Note: These trades are sorted in descending order based on employment rate, from highest to lowest.

CBT Trades

The employment and income trends in CBT trades reveal a mixed performance across fields, with technical trades generally offering stronger job market returns. The highest employment rate is seen in NVC Level 2 in Hand Embroidery at 62%, yet the average income is low at PKR 15,556—indicating high absorption but in low-paying or informal segments, likely self-employment.

More technical CBT trades show balanced outcomes in both employment and income.

NVC Level 2 in Electrical Technology (General Electrician) and NVC Level 2 in Automobile Technology (Motorcycle Mechanic) both report employment rates of 55%, with average incomes of PKR 30,525 and PKR 24,329 respectively. These reflect steady demand for practical

Conventional Trades

The employment and income trends in conventional trades highlight a clear advantage for digitally oriented and service-based fields, which tend to offer higher market demand and better income potential. The highest employment rate is observed in Graphic Designing (UI/UX Designer) at 54%, with an average monthly income of PKR 35,179, reflecting strong absorption in freelance, remote, and creative economies tied to tech platforms.

Trades in Graphic Design and Video Editing and Computerized Accounting (Peachtree; QuickBooks) show strong dual performance. Graphic Design and Video Editing records a 48% employment rate and a notably high income of PKR 31,099, while Computerized Accounting has a slightly lower employment rate at 36% but a robust income of PKR 30,098. These trades reflect the rising demand for digital

mechanical and electrical skills across industrial and urban markets.

Consumer-focused and artistic trades, while accessible, yield modest results. NVC Level 2 in Arts (Dress Making) has a 52% employment rate but an average income of just PKR 15,960. Similarly, NVC Level 2 in Mechanical Technology HVACR and NVC Level 2 in Electronic Home Appliances Technician show 50% employment each, with incomes of PKR 27,480 and PKR 25,432 respectively—pointing to fair employment outcomes in household tech maintenance, but with limited wage scalability.

Some IT-oriented trades also register moderate-to-low outcomes. NVC Level 2 in Information Technology (AutoCAD) shows 46% employment and PKR 38,403 income, whereas NVC Level 3 in Information Technology (Web Designing and Development) and NVC Level 2 in Information Technology (Computer Operator) report lower employment rates of 44% and 41%, with incomes of PKR 28,191 and PKR 26,194, respectively—signalling the need for stronger market linkages or upskilling.

Notably, NVC Level 2 in Hair & Beauty Services - Beautician shows a 47% employment rate and income of PKR 17,661, indicating female-dominated service trades continue to face challenges in formal wage growth despite demand in informal markets.

Overall, CBT trades perform well in mechanical, electrical, and household repair domains, with relatively better income opportunities in AutoCAD and welding. However, trades linked to artistic skills and basic IT face wage suppression, signaling the need for improved certification, digital skills integration, and access to higher-value platforms. To unlock better income trajectories, alignment with industry demand, specialization in green/technical sectors, and entrepreneurship support remain critical.

content creation and financial tech skills in both formal and freelance sectors.

Clinical Assistant (14 Months) and Beauty Therapy, Hair Styling and Skin Care offer moderate employment rates (49% and 43%, respectively) with average incomes of PKR 22,206 and PKR 18,036. While these are relatively accessible and popular among female participants, income levels indicate that many are employed in entry-level or informal service roles.

Fashion Design & Dress Making reports a 47% employment rate with PKR 16,493 in monthly income, suggesting limited wage growth despite steady demand. Similarly, Domestic Tailoring and Beautician show 46% employment, with monthly earnings of PKR 18,060 and PKR 18,933, respectively. These trades, though offering accessible self-employment routes, continue to face income stagnation due to informal market saturation.

Interestingly, Computer & Electronics and Graphic Design (Print Media) show decent employment levels (46% and 45%) and average incomes of PKR 25,000 and PKR 27,895, respectively, signaling moderate success in mid-skill tech-adjacent occupations where basic digital competencies are paired with vocational skills.

On the lower-performing end, Beauty Therapy, Hair Styling and Skin Care shows both moderate employment and lower income outcomes (43%, PKR 18,036), reinforcing the gap between participation and economic return in female-dominated manual services without premium market access.
Overall, conventional trades are most successful when aligned with digital economy trends, such as UI/UX design, video editing, accounting software, and electronics. These fields offer higher income potential and growing employment opportunities. In contrast, traditional service-oriented trades remain popular but under-monetized. The data reinforces the need to integrate market-relevant digital skills and certified pathways into conventional training to ensure sustainable livelihoods and access to higher-value employment opportunities.

Key Takeaways

- **Higher Employability in CBT Trades**
  Hand Embroidery (62%), Electrical Technology (55%), and Automobile Mechanic (55%) show strong employment uptake, reflecting sustained demand in both traditional crafts and technical service sectors.

- **Digital Design and Accounting Dominate Conventional Earnings**
  UI/UX Design (PKR 35,179), Graphic & Video Editing (PKR 31,099), and Computerized Accounting (PKR 30,098) lead in income, driven by demand for freelance-ready and software-integrated skills.

- **Artisan and Service Trades Face Wage Suppression**
  Dress Making (PKR 15,960), Hand Embroidery (PKR 15,556), and Beautician roles across both tracks (PKR 17,000–19,000) maintain moderate employment but struggle with income growth due to informality.

- **IT-Oriented CBT Trades Underperform in Employment**
  Despite income potential (AutoCAD at PKR 38,403), lower employment rates in Web Design (44%) and Computer Operator (41%) suggest weak market connections or oversupply in entry-level digital skills.

- **Mid-Tier Conventional Tech Trades Show Steady Gains**
  Graphic Design (Print Media) (PKR 27,895) and Computer & Electronics (PKR 25,000) combine moderate employment (45–46%) with improving income, indicating growth potential with further skill integration.

DAE	Average Income	Employment rate		Average Income	Conventional
Chemical (DAE)	41,591	63%	61%	52,843	Digital Forensic & Cyber Security
Auto & Diesel (DAE)	35,588	59%	59%	44,600	Network Administrator (CISCO, HUAWEI, IBM)
Computer Information Technology (DAE)	18,333	57%	58%	40,250	Advance Python Programming & Applications
Electrical (DAE)	34,935	55%	56%	37,767	Digital Marketing & Search Engine Optimization (SEO)
Civil (DAE)	42,183	52%	55%	37,169	Amazon Virtual Assistant
Electronics (DAE)	31,471	50%	54%	29,863	Certificate in IT (Web Development)
Electrical Technology	30,437	49%	52%	37,619	Artificial Intelligence (Machine Learning; Deep Learning; Communication)
Mechanical (DAE)	38,990	49%	50%	38,122	E-Commerce
Mechanical Revised 2013	32,500	48%	50%	43,173	Advance Web application Development
Civil Revised 2013	36,182	37%	49%	26,458	Certificate in Computer Applications

Table 5: Employment Rate Trade Wise - DAE vs High-Tech

Note: These trades are sorted in descending order based on employment rate, from highest to lowest.

DAE Trades

The employment and income trends in DAE programs show stable outcomes in core engineering fields, with a few standout performers. The highest employment rate is observed in Chemical (DAE) at 63%, paired with a strong income of PKR 41,591, reflecting sustained demand in the industrial and manufacturing sectors.

Similarly, Auto & Diesel (DAE) maintains a solid employment rate of 59% with an average income of PKR 35,588, indicating consistent relevance across logistics and automotive service markets. This trend continues in Electrical (DAE) with 55% employment and PKR 34,935 average income—pointing to steady demand in infrastructure maintenance.

The Computer Information Technology (DAE) stream shows a decent employment rate of 57%, but income lags significantly at PKR 18,333, suggesting that foundational IT skills may not command strong wage premiums without specialization.

Civil and Electronics DAEs show moderate but stable performance. Civil (DAE) reports 52% employment and PKR 42,183 income, while Electronics (DAE) sees 50% employment and PKR 31,471—reflecting reliability but highlighting the need for upskilling to reach higher income brackets.

Revised versions of traditional trades (e.g., Mechanical Revised 2013 and Civil Revised 2013) show slightly lower employment rates of 48% and 37% respectively, though still competitive income bands (PKR 32,500 and PKR 36,182), suggesting incremental curriculum updates may not significantly improve job market traction without demand-aligned skills.

Overall, DAE trades remain foundational for Pakistan's technical workforce. While engineering fields like Chemical, Auto & Diesel, Electrical, and Mechanical yield strong employability and income, the growing digital economy requires that DAE curricula integrate more advanced, market-linked digital competencies to remain competitive.

High-Tech Trades

High Tech trades show a clear income advantage and increasingly competitive employment outcomes, especially in digital and AI-driven domains. The top performer is Digital Forensic & Cyber Security, offering 61% employment and the highest monthly income of PKR 52,843—highlighting premium demand for data security across industries.

Network Administrator (CISCO, HUAWEI, IBM) closely follows, reporting 59% employment and PKR 44,600 income, showcasing the payoff of international certifications and cloud infrastructure management skills.

In the programming domain, Advance Python Programming & Applications records 58% employment and PKR 40,250 income, while Advance Web Application Development achieves 50% employment and a higher-than-average income of PKR 43,173—emphasizing the scalability of full-stack and backend development capabilities.

Mid-performing trades include Digital Marketing & SEO (56%, PKR 37,767), Amazon Virtual Assistant (55%, PKR 37,169), and AI (Machine Learning, Deep Learning) (52%, PKR 37,619), signalling strong demand in global freelance markets and enterprise-level digital automation.

At the base of the spectrum, Certificate in Computer Applications reports a 49% employment rate but only PKR 26,458 income—highlighting saturation in basic IT literacy programs and the limited wage potential of entry-level tech roles.

Overall, High Tech trades outperform traditional streams in income generation, particularly when linked to globally demanded skills such as cybersecurity, networking, programming, and e-commerce. The data underscores the urgency of embedding advanced digital content and real-world certification pathways to future-proof training programs and ensure graduates remain competitive in both local and international markets.

Key Takeaways

- **DAE Trades Ensure Consistent Employability, but Income Gaps Persist**
  Chemical (63%), Auto & Diesel (59%), and Electrical (55%) demonstrate strong employment traction, yet average monthly incomes remain below PKR 42,000, highlighting limited wage mobility in traditional engineering streams.

- **High Tech Skills Drive Premium Earnings**
  Digital Forensics & Cybersecurity (PKR 52,843), Network Administration (PKR 44,600), and Advanced Python Programming (PKR 40,250) top the income spectrum, reflecting the growing value of specialized, globally aligned digital skills.

- **Revised DAE Curricula Yield Modest Return on Modernization**
  Mechanical (Revised) (48%, PKR 32,500) and Civil (Revised) (37%, PKR 36,182) show no significant boost in employability or income, underscoring the need for curriculum upgrades to be matched with industry linkage and certification recognition.

- **Foundational IT Tracks Underdeliver Despite Market Relevance**
  DAE in Computer IT (57%, PKR 18,333) and Certificate in Computer Applications (49%, PKR 26,458) reflect high enrolment but weak wage outcomes, indicating saturation or insufficient skill depth.

- **High Tech Niche Certifications Offer Better ROI Despite Moderate Placement**
  Programs like Amazon VA (55%, PKR 37,169), Web Development (54%, PKR 29,863), and AI/Machine Learning (52%, PKR 37,619) offer attractive earnings even with mid-range employment rates, reinforcing the market value of specialized upskilling.

8.2.3 Employment Rate District Wise – Top 10

This section presents a comparative analysis of employment outcomes for graduates from CBT and Conventional Training programs, based on the top 10 most popular districts in each category (determined based on employment rate). The analysis highlights key employment rate trends and income disparities across different districts.

CBT	Average Income	Employment rate		Average Income	Conventional
Sahiwal	22,143	61%	64%	30,865	Gujranwala
Lahore	26,471	56%	63%	25,176	Multan
Bahawalnagar	26,241	55%	59%	32,143	Karachi
Muzaffargarh	20,804	51%	57%	26,526	Bahawalnagar
Rawalpindi	21,619	51%	56%	30,957	Rawalpindi
Rahim Yar Khan	20,860	49%	52%	33,987	Lahore
Faisalabad	24,357	46%	51%	32,619	Faisalabad
Sargodha	20,861	44%	48%	37,034	Islamabad
Gujranwala	23,673	43%	46%	24,175	Quetta
Multan	25,000	35%	42%	27,879	Peshawar

Table 6: Employment Rate District wise - CBT vs Conventional

Note: These trades are sorted in descending order based on employment rate, from highest to lowest.

CBT Trades

Employment outcomes for CBT graduates vary significantly by district, with performance shaped by local labour demand, industrial exposure, and market alignment. The highest employment rate is observed in Sahiwal (61%), followed by Lahore (56%) and Bahawalnagar (55%)—reflecting relatively strong demand for vocational skills in these areas, likely in agriculture-linked manufacturing, textiles, and repair services.

Lahore leads in income at PKR 26,471, followed closely by Bahawalnagar (PKR 26,241) and Multan (PKR 25,000)—suggesting urban and peri-urban centres offer better compensation even if employment rates are slightly lower. Muzaffargarh (51%) and Rawalpindi (51%) show identical employment rates, though incomes differ, with Rawalpindi offering a slightly higher PKR 21,619 compared

Conventional Trades

Graduates from conventional programs consistently outperform CBT counterparts across districts, both in employment and income. Sahiwal (64%), Lahore (63%), and Bahawalnagar (59%) again rank high on employment, but with significantly better earnings—PKR 30,865, PKR 25,176, and PKR 32,143, respectively—indicating stronger curriculum-industry alignment and greater access to high-value services.

Karachi and Bahawalpur are not listed under CBT but show robust outcomes for conventional graduates. Karachi's average income of PKR 32,143 and Bahawalpur's PKR 26,526 underscore the income advantage of digital and commercial trades in urban economies. Other key performers include Rawalpindi (56%, PKR 30,957) and Faisalabad (51%, PKR 32,619)—strongholds of manufacturing and commerce that are

to PKR 20,804 in Muzaffargarh.

Mid-performing districts like Faisalabad (46%), Sargodha (44%), and Gujranwala (43%) show constrained employment despite moderate incomes ranging from PKR 20,861 to PKR 24,357, possibly reflecting industrial oversaturation or skill mismatch. Multan, despite its size and economic relevance, reports the lowest CBT employment rate at 35%, albeit with a reasonable income level (PKR 25,000), suggesting uneven placement success.

increasingly integrating tech-enabled conventional skills into the workforce. Even districts with mid-tier employment like Sargodha (48%) and Gujranwala (46%) report average incomes of PKR 37,034 and PKR 24,175, respectively, well above CBT trade benchmarks.

Notably, Islamabad, despite a moderate employment rate of 48%, offers the highest income at PKR 37,034, reflecting the capital's advantage in hosting knowledge-intensive and remote-work compatible opportunities.

Key Takeaways

- **Higher Employment in CBT Trades Across Industrial Districts**
  Sahiwal (61%), Lahore (56%), and Bahawalnagar (55%) demonstrate strong employment absorption for CBT graduates, likely driven by labour demand in agriculture-linked manufacturing, textiles, and technical services.

- **Conventional Trades Dominate Urban Job Markets**
  Districts like Sahiwal (64%), Lahore (63%), and Bahawalnagar (59%) lead in conventional trade employment, with Karachi, Rawalpindi, and Faisalabad also showing strong performance due to digital services, tech training, and freelance ecosystems.

- **CBT Graduates in Semi-Urban Areas Face Modest Earnings**
  Despite decent employment in Muzaffargarh (51%) and Rawalpindi (51%), CBT graduates earn lower monthly incomes (PKR 20,804–21,619), pointing to placements in lower-wage or informal sector jobs.

- **Conventional Trade Graduates Earn More Across All Regions**
  From Faisalabad (PKR 32,619) to Islamabad (PKR 37,034), conventional graduates earn PKR 7,000–16,000 more than CBT graduates in the same districts, reflecting higher alignment with digital and service-sector demands.

- **Mismatch in Training and Demand in Some CBT Regions**
  Multan (35%) and Sargodha (44%) show weak CBT employment outcomes despite average-to-good incomes (PKR 20,861–25,000), highlighting gaps in industry linkages, trade selection, or placement services.

DAE	Average Income	Employment rate		Average Income	High Tech
Lahore	40,313	70%	71%	45,267	Karachi
Rawalpindi	38,538	67%	65%	47,273	Lahore
Faisalabad	32,625	60%	64%	49,877	Islamabad
Peshawar	29,242	52%	62%	41,994	Rawalpindi
Haripur	28,889	50%	61%	36,282	Gujranwala
Attock	33,750	50%	55%	47,455	Peshawar
Multan	36,250	47%	50%	38,770	Faisalabad
Sahiwal	33,571	45%	50%	41,327	Multan
Nowshera	34,091	43%	48%	35,375	Quetta
Jhelum	33,889	40%	47%	31,477	Hyderabad

Table 7: Employment Rate District wise - DAE vs High-Tech
Note: These trades are sorted in descending order based on employment rate, from highest to lowest.

DAE Trades

The employment and income outcomes for DAE graduates show strong regional variations, with industrial and urban hubs demonstrating better placement and earnings. Lahore (70%), Rawalpindi (67%), and Faisalabad (60%) lead in employment, reflecting robust industrial demand and strong employer linkages for diploma holders in engineering and technical fields.

Lahore also tops average income at PKR 40,313, affirming its role as a key urban-industrial node offering well-paying opportunities. Rawalpindi (PKR 38,538) and Multan (PKR 36,250) also report solid incomes, suggesting consistent demand for mechanical, electrical, and civil engineering diploma holders in infrastructure and service sectors.

In contrast, semi-urban districts such as Sahiwal (45%) and Nowshera (43%) report weaker employment outcomes despite respectable average incomes—PKR 33,571 and PKR 34,091, respectively. This indicates a possible gap between training supply and regional job demand or weaker employer engagement in local labour markets.

High Tech Trades

High-tech programs outperform DAE in both employment and income across most regions. Lahore (71%), Rawalpindi (65%), and Islamabad (64%) show the highest high-tech employment rates, driven by rising demand in cybersecurity, software development, and data analytics.

Faisalabad leads in average monthly income at PKR 49,877, followed closely by Rawalpindi (PKR 47,273) and Attock (PKR 47,455). These earnings reflect the premium on specialized IT skills and globally recognized certifications in digital fields.

Karachi and Peshawar, despite not leading in employment rates, still maintain strong income levels (PKR 45,267 and PKR 41,994 respectively), suggesting significant freelance and remote work uptake.

Districts like Quetta (48%, PKR 35,375) and Hyderabad (47%, PKR 31,477) report comparatively lower performance, but still exceed DAE outcomes in many regions, showing the resilience of high-tech skillsets even in emerging markets.

Jhelum (40%) stands at the bottom of the employment spectrum, with graduates earning PKR 33,889, highlighting the need for better job placement services and stronger industry connections in smaller cities.

Key Takeaways

- **High-Tech Beats DAE in Urban Job Markets**
  Lahore (71%) and Rawalpindi (65%) lead high-tech employment, outpacing DAE, driven by demand for digital skills.
- **Digital Skills Earn More**
  High-tech graduates earn up to PKR 49,877 (Faisalabad), far surpassing DAE incomes—even in the same regions.
- **DAE Success Anchored in Industrial Hubs**
  DAE employment peaks in Lahore (70%) and Rawalpindi (67%), reflecting traditional demand in infrastructure and manufacturing.
- **Freelancing Expands High-Tech Reach**
  Karachi and Peshawar show high tech-sector earnings despite mid-tier employment, signalling remote and gig-based uptake.
- **DAE Lags Without Industry Linkage**
  Semi-urban areas like Sahiwal (45%) and Nowshera (43%) show weak DAE absorption, underscoring the need for employer connectivity.

8.2.4 Employment Rate-TEVTA Wise

Employment outcomes and income levels vary considerably across different TVET organizations, reflecting differences in institutional quality, market orientation, and regional economic linkages.

Employment and Average Income-TEVTA wise

TVET Organization	Male		Female		Total	
	Employment rate	Average Income	Employment rate	Average Income	Employment rate	Average Income
Azad Jammu Kashmir TEVTA	45%	29,265	62%	20,351	54%	24,808
Balochistan TEVTA	51%	28,729	56%	24,333	54%	26,531
Khyber Pakhtunkhwa TEVTA	45%	31,761	47%	19,812	46%	25,787
NAVTTC	52%	41,526	46%	22,910	49%	32,218
Punjab TEVTA	52%	34,611	49%	19,917	50%	27,264
PVTC	48%	27,371	47%	16,632	47%	22,002
Sindh TEVTA	58%	35,412	44%	22,179	51%	28,796
AVERAGE	**50%**	**32,668**	**50%**	**20,876**	**50%**	**26,772**

Indicates lowest value in the column

Indicates highest value in the column

The employment rate stands equally at 50% for both males and females, indicating balanced Labour force participation among TVET graduates. However, the income gap remains significant, with males earning an average of PKR 32,668 and females earning PKR 20,876. This disparity of nearly PKR 12,000 underscores persistent gender-based wage inequality despite equal access to employment.

Sindh shows the strongest overall outcomes, combining the highest male employment rate at 58% and a relatively strong female rate of 44%, with elevated average incomes for both genders. The average monthly income reaches PKR 28,796, the highest among all regions, suggesting effective Labour market integration.

NAVTTC also performs well in terms of earnings. With a male employment rate of 52% and female employment at 46%, it records the highest male average income of PKR 41,526 and a female income of PKR 22,910. While the gender income gap is wide, the overall average income remains high, indicating strong market value of its graduates.

Balochistan reflects a narrower gender income gap than most. With 51% male and 56% female employment, males earn PKR 28,729 and females PKR 24,333. The average income of PKR 26,531 points to a more equitable income structure.

Punjab demonstrates parity in employment (52% male, 49% female), but the income gap remains substantial—males earn PKR 34,611 while females earn PKR 19,917. This divergence results in a combined average of PKR 27,264, revealing imbalances in wage structures

despite similar employment outcomes.

In contrast, PVTC displays both low incomes and a wide gender disparity. Male and female employment are nearly equal at 48% and 47% respectively, yet incomes are significantly different—PKR 27,371 for males and only PKR 16,632 for females, leading to an overall income of PKR 22,002.

Azad Jammu Kashmir features the highest female employment rate at 62% compared to 45% for males. Despite this, the average female income is lower (PKR 20,351 vs PKR 29,265 for males), resulting in an average income of PKR 24,808. This pattern highlights that higher female participation does not necessarily correlate with wage equity.

Khyber Pakhtunkhwa maintains similar employment levels for both genders (45% male, 47% female), but a wide income gap persists—PKR 31,761 for males and PKR 19,812 for females—bringing the average to PKR 25,787.

These patterns demonstrate that while access to employment has become increasingly balanced across genders, systemic wage gaps endure. Only a few institutions show progress toward income equity, while others reveal deep-seated disparities that call for targeted policy and institutional reforms.

8.2.5 Job Search Duration

How long does it take for graduates to land a job after completing their training? For those who did secure employment, the survey data suggests that most found work in a reasonably short time frame, though a minority experienced long job searches. On average, it took roughly 5–6 months for a graduate to secure employment after finishing the program. In fact, a majority of employed graduates were able to find a job within the first six months. Here's a breakdown of the job search duration among those who became employed:

15%
NO WAIT
(job at graduation)

About 15% of graduates had a job immediately upon graduating – they were already employed by the time they finished training. Some may have been hired during internships or placed through the institute, and others continued in a family business or prior job.

64%
WITHIN 6 MONTHS

64% secured employment within six months of graduation. A large portion of these actually found jobs in the first 1–3 months. This indicates that for many graduates, the skills acquired were marketable enough to yield a quick placement.

13%
6-12 MONTHS

Roughly 13% took between half a year to one year to get a job. These graduates did find work, but only after several months of searching. This could be due to tougher fields, waiting for the right opportunity, or needing that extra time to network or upskill.

9%
OVER 1 YEAR

Approximately 9% endured a job search longer than one year. They eventually found employment but after a significant delay (more than 12 months after finishing training). Those in this group may have faced the toughest barriers or entered particularly slow job markets for their trade.

In summary, while most graduates who were going to be employed found work relatively quickly (within months), there is still a sizable minority who wait a long time. The average of around 6 months reflects that quick placements are common, but the tail end of the distribution (people taking a year or more) pulls the average up to about half a year. This also implies that if a graduate doesn't find a job within the first few months, there might be diminishing returns and they could remain unemployed for an extended period unless they change strategy (e.g. further training, relocation, etc.). The findings highlight the importance of timely job placement support: since the majority land jobs by 6 months, interventions should probably target those approaching the 6-month mark of unemployment to prevent them from slipping into long-term unemployment.

8.2.6 Education Level-Employment Rate

The table below highlights the employment rates of graduates from various TVET trade types—namely CBT, Conventional (CONV), DAE, DIT, and High-Tech—segmented by their educational qualification prior to enrolment. This comparison provides insights into how pre-training education levels influence post-training employment outcomes across different types of vocational programs.

Employment Rate - -Education Level Pre-TVET						
Education Before TVET	**CBT**	**Conv**	**DAE**	**DIT**	**High Tech**	**Average**
Primary	56%	53%				54%
Middle	53%	48%	33%	23%	58%	43%
Matric	50%	46%	45%	39%	43%	45%
Intermediate (FA/F.Sc)	46%	44%	43%	40%	43%	43%
Bachelor (BA/B.Sc/BS)	48%	44%	62%	54%	52%	52%
Masters (MA/M.Sc)	52%	44%	67%	65%	59%	57%
Illiterate	52%	64%				58%
Others	55%	43%	45%	73%	66%	56%
Average	52%	48%	49%	49%	53%	50%

Table 8: Employment Rate - Education Level Pre-TVET

The data reveals clear trends in how prior educational background is linked to employment rates across various vocational trade types. The highest average employment rate is shown by High-Tech graduates (53%), followed by those from CBT programs (52%) and DAE and DIT (both 49%), while CONV records a slightly lower average of 48%.

Employment rates are found to be highest among individuals with postgraduate education (Masters) across all trade types, with a peak of 67% observed in DAE and 65% in DIT, highlighting the positive influence of higher academic qualifications on employment prospects within vocational fields. Likewise, higher employment outcomes are reported for those holding Bachelor's degrees, particularly within DAE (62%) and DIT (54%).

Lower employment rates are generally associated with individuals whose education levels are limited to Middle, Matric, or Intermediate. For instance, only 33% employment is reported among Middle-level learners trained under DAE, while Matric-educated individuals in DIT and High-Tech show similarly modest outcomes (39% and 43%, respectively). Interestingly, more balanced employment outcomes are shown by CBT programs, with rates ranging between 46% and 56% across educational levels, and the highest being observed in the "Primary" category (56%).

It is also noteworthy that even illiterate learners are shown to attain relatively strong employment outcomes in certain trades—64% in CONV and 52% in CBT—indicating that vocational programs can serve as effective pathways for upward mobility, even in the absence of formal education.

Overall, it is demonstrated that both the type of vocational training and the level of prior

education significantly influence employment outcomes. DAE and DIT programs are found to be more effective for individuals with higher educational backgrounds, while CBT provides more inclusive opportunities across a range of educational levels. These findings underscore the importance of aligning vocational training with learners' educational profiles and enhancing support mechanisms for those with lower academic qualifications.

8.2.7 Job Satisfaction Among TVET Graduates in Their Current Employment

The survey data provides a comprehensive insight into the job satisfaction levels of TVET graduates currently engaged in employment or self-employment. A significant majority of graduates express positive satisfaction with their current work, while a smaller segment reports dissatisfaction or neutrality. The results indicate that TVET training generally aligns with job expectations and career aspirations, though some challenges remain in ensuring complete job satisfaction.

39%
Were very satisfied with their current job/business

A substantial 39% of TVET graduates reported being very satisfied with their jobs or businesses. This suggests that a significant portion of graduates find their work fulfilling, financially rewarding, and aligned with their skills. High satisfaction levels could be attributed to successful employment in their trained field, decent wages, or career growth opportunities.

43%
Showed satisfied with their current job/business

The largest segment of respondents (43%) described themselves as simply satisfied with their current employment. These individuals likely have stable jobs with adequate earnings but may see room for improvement in aspects such as career progression, job stability, or working conditions. Together with the "Very Satisfied" group, 82% of graduates expressed positive job satisfaction, indicating that TVET training generally leads to favourable employment outcomes.

12%
Maintained a neutral stance

Around 12% of graduates reported a neutral stance on job satisfaction. This could indicate mixed experiences, such as stable employment but lower-than-expected earnings, lack of career progression, or a mismatch between their training and job roles. Neutral responses suggest that while these graduates are employed, they may not feel fully engaged or fulfilled in their current positions.

5%
Showed dissatisfaction with their current job/business

A smaller segment (5%) expressed dissatisfaction, suggesting that some graduates struggle with job-related challenges, such as low salaries, limited career growth, or poor working conditions. Dissatisfied workers may feel that their TVET training did not fully prepare them for industry demands or that their job roles do not align with their acquired skills.

1%
Were very dissatisfied with their current job/business

Only 1% of graduates reported being very dissatisfied, indicating significant concerns with their employment situation. This group may be experiencing job instability, underemployment, poor wages, or dissatisfaction with work environments. Such cases could point to a mismatch between training quality and industry expectations or limited job opportunities in certain trades.

The findings reveal that a vast majority of TVET graduates (82%) are satisfied with their employment or self-employment, demonstrating the effectiveness of vocational training in preparing graduates for the workforce. However, 17% of respondents (Neutral, Dissatisfied, and Very Dissatisfied combined) indicate potential concerns, such as limited career growth, low earnings, or job mismatches.

To further enhance job satisfaction, targeted interventions such as career counselling, workplace support, wage enhancements, and better employer connections could help bridge existing gaps. Addressing concerns of the dissatisfied minority through improving work conditions, industry collaboration, and alumni engagement could further optimize employment outcomes and ensure higher long-term job retention and satisfaction among TVET graduates.

Statistical Analysis (Monthly Income and Job Satisfaction)

An independent samples t-test was applied to determine whether there is a statistically significant difference in average post-TVET income between graduates who reported being "Very Satisfied" with their job and those who were "Dissatisfied." This test is appropriate when comparing the means of two independent groups to assess whether observed differences are statistically meaningful.

The results show a highly significant difference between the two groups ($t = 13.89$, $p < 0.00001$). Graduates who reported being "Very Satisfied" with their jobs had an average income of PKR 31,559, whereas those who were "Dissatisfied" earned an average of PKR 21,986. This difference of nearly PKR 9,600 suggests that job satisfaction is strongly associated with higher earnings, affirming that better-paying jobs likely contribute to more positive work experiences and overall satisfaction.

8.2.8 Factors Affecting Employment

Unemployed graduates in the survey reported a range of challenges hindering their job search. The most common issues cited were not personal failings but structural problems in the job market:

47%
Lack of job opportunities in the trained field

This was by far the top reason. Nearly half of unemployed respondents said there simply were not enough job openings relevant to their trade. This points to a mismatch between training and market demand. Graduates are skilled in a trade, but local industries or employers aren't hiring for those skills (or there are too many skilled people for the available jobs).

20%
Insufficient work experience

Many felt that employers' experience requirements kept them jobless. Being new graduates, they struggled because even entry-level jobs often ask for prior experience, creating a catch-22 situation.

14%
Low wages or salaries

A significant number found that the jobs available in their field were offering very low pay. In such cases, graduates might prefer to hold out for better opportunities or consider different work, rather than accept a job that doesn't pay a living wage. Low salary offerings can thus prolong unemployment for graduates who have skills but feel the reward is not adequate.

7%
Skill gaps or mismatched skills

Some graduates acknowledged they lacked certain skills that employers want. This could mean the training wasn't fully aligned with industry needs or that technology moved ahead of what they learned. They might require additional skills or more advanced training to be employable.

6%
Lack of information about jobs

A portion of graduates had trouble even finding out about job openings. This suggests networking and job search channels are a challenge; they may not know where to look or lack connections, especially if their training institute didn't provide strong career services.

3%
Household responsibilities

A small share, but notably mostly women, cited home duties as a reason for not working. They may have the skills but are occupied with caring for family or managing the home, limiting their ability to take up employment.

2%
Not permitted by family

A few graduates (again, predominantly female) said they wanted to work but their family did not allow it. Cultural norms in some families prohibit women (and in rare cases men) from working outside, which directly forces these graduates to remain unemployed despite being trained.

These factors underscore that the transition from training to employment is not just about individual effort – **the economic environment and social context** play big roles. The prevalence of "lack of opportunities" and "low wages" indicates that in many cases the economy isn't generating enough suitable jobs for the skills people have, or employers are not willing to offer adequate compensation. The "experience required" issue highlights a common hurdle for fresh graduates: without entry-level openings or internships, they can't gain experience to become employable. On the personal side, issues like skill mismatch point to potential improvements in training curricula, and the fact that some graduates face **non-economic barriers** (family and household pressures) shows that social support and counselling might be needed alongside technical training. Addressing these challenges would likely improve employment rates – for instance, better job matching services, apprenticeship programs to build experience, up-to-date course content, and community engagement to allow graduates (especially women) to work could all help bridge the gap.

Statistical Analysis (Unemployment and Pursuit of Further Education)

Many TVET graduates who don't find satisfying jobs after their training choose to go back to school or pursue further education. The data shows a clear trend: those who are not working—or not happy with the jobs they find—are much more likely to continue their studies. Interestingly, none of the graduates who were currently employed also reported being enrolled in additional education at the same time. This suggests that when a graduate finds a job they're satisfied with, they usually don't feel the need to return to school right away. Among the unemployed, a significant number said they needed to improve their skills or training, reinforcing the idea that the lack of fulfilling employment pushes people toward additional learning.

From a broader perspective, this trend has two sides. On one hand, it's encouraging that graduates are investing in their future and aiming to improve their qualifications. On the other hand, it may point to shortcomings in the initial training—perhaps the courses didn't match job market needs or lacked strong connections to employers.

Overall, employment seems to play a big role in whether graduates choose to continue their education. Those who find good jobs tend to stay in them, while those who don't often look for a second chance through further studies. Strengthening the link between training and employment could reduce this need and ensure more graduates succeed right after finishing their programs.

8.3 Types of Job Positions Graduates Hold and Their Alignment with The Training

8.3.1 Top 10 Common Job Positions (for employed graduates)

The top 10 job positions among employed graduates account for 57% of total employment (excluding self-employed individuals), indicating that a significant portion of graduates are concentrated in a few key occupations.

Top 10 Job Positions (Employed Graduates only)		
Job Title	**Number of Graduates**	**Percentage of total Employed**
Teacher / Trainer	1,214	19.33%
Electrical & Solar Technician	549	8.74%
Computer Operator	400	6.37%
Mechanical Technician/Engineer	264	4.20%
Daily Wage Worker (Skilled Labour)	235	3.74%
Sales Representative/Manager	217	3.45%
Medical Assistant/Technician	209	3.33%
Supervisor/Manager (General)	189	3.01%
Accountant / Finance Officer	168	2.67%
Police / Armed Forces Personnel	144	2.29%
	3,589 out of 6,282 employed graduated	Representing 57% of total employed graduated

Table 9: Top 10 Job Positions TVET Graduate hold

The most common job title is Teacher/Trainer, with 1,214 graduates (19.33%) securing employment in schools, colleges, and TVET institutes. This suggests that many graduates are taking on instructional roles rather than transitioning directly into industry. However, this does not necessarily mean they are working within the TVET structure—many may have found employment as teachers in general education settings, including primary and secondary schools, private academies, and subject-specific training centers. Notably, these roles are predominantly held by female graduates.

Beyond teaching, technical roles such as Electrical & Solar Technicians (8.74%), Computer Operators (6.37%), and Mechanical Technicians/Engineers (4.2%) represent a significant portion of employment, reflecting Pakistan's growing demand for skilled labour in electrical, mechanical, and IT-related fields. The presence of 549 Electrical & Solar Technicians highlights the rising adoption of solar energy solutions and the growing need for skilled professionals in the renewable energy sector. Similarly, 400 Computer Operators have secured positions, demonstrating strong absorption of IT-related skills in administration, data management, and office support functions. Mechanical Technicians and Engineers (264 graduates, 4.2%) have also found steady employment, largely due to consistent demand in manufacturing, industrial maintenance, and HVAC services.

A notable portion of graduates—235 individuals (3.74%)—are working as daily wage workers in skilled labour roles. This suggests that while their training provides

employability, many are unable to secure permanent or contractual positions, leading them to take on short-term or informal employment. Another emerging trend is the presence of 217 graduates (3.45%) working as Sales Representatives/Managers, indicating that some vocational graduates are transitioning into business-oriented roles rather than purely technical professions. This may reflect the flexibility of TVET skills, enabling graduates to leverage communication, marketing, and management abilities in commercial environments.

Employment in healthcare and finance sectors also appears promising, with 209 graduates (3.33%) working as Medical Assistants/Technicians and 168 graduates (2.67%) securing roles as Accountants or Finance Officers. This demonstrates that TVET programs aligned with healthcare and business administration are providing sustainable employment opportunities, particularly in private medical facilities, diagnostic labs, and financial service providers. Furthermore, 144 graduates (2.29%) have entered the police or armed forces, reinforcing the appeal of structured government jobs that offer job stability, benefits, and career progression opportunities.

Overall, the top 10 job positions reflect a strong demand for technical and IT-based skills, with significant employment in electrical, mechanical, IT, and healthcare trades. However, the data also reveals challenges related to informal employment, limited private-sector absorption for some trades, and gender disparities in job placements. Addressing these challenges requires stronger industry linkages, enhanced job placement services, and improved alignment of training programs with evolving Labour market needs. Additionally, supporting graduates through work-based learning, internships, and career counselling could help bridge the gap between training and long-term, stable employment.

8.3.2 Gender-Based Top 10 Common Job Positions (for employed graduates)

Gender plays an important role in the career paths of TVET graduates, with notable differences in the types of jobs and sectors men and women enter. Male graduates outnumber female graduates in overall employment – around 74% of those employed by organizations are male, while 26% are female (partly reflecting that the surveyed graduate pool had more men, and also that women's employment rate is lower).

Male Job Titles	Number of Jobs	Percentage of total Employed (High to Low)		Number of Jobs	Female Job Titles
Electrical & Solar Technician	547	12%	55%	906	Teacher / Trainer
Computer operator	331	7%	8%	128	Parlor/beautician
Teacher / Trainer	308	7%	4%	69	Computer operator
Mechanical Engineer / Technician	256	5%	4%	58	Medical assistant/Technician
Daily Wage worker	222	5%	2%	30	Accountant / Finance Officer
Sales Manager/Representative	202	4%	2%	30	Customer care services
Management/supervisory roles	169	4%	2%	27	Graphic Designer
Medical assistant/Technician	151	3%	1%	23	Administration Roles
Police & Armed Forces	139	3%	1%	22	Freelancing
Accountant / Finance Officer	138	3%	1%	20	Others
Male Graduates are 74% of total Employed Graduates	2,463	Representing 57% of Male and 80% of Female Employed Graduates		1,313	Female Graduates are 26% of total Employed Graduates

Table 10: Gender Wise Top Job Positions

The employment trends of TVET graduates show a clear gender-based division in job roles, reflecting both industry demands and societal norms. Male graduates overwhelmingly dominate technical and trade-oriented professions, while female graduates are concentrated in education and service-sector jobs. Among employed male graduates, 12% work as Electrical & Solar Technicians (547 individuals), making it the most common occupation for men, followed by computer operators (7%), teacher/trainers (7%), mechanical engineers/technicians (5%), and daily wage workers (5%). Other notable fields for male graduates include sales manager/representative (4%), management/supervisory roles (4%), and medical assistant/technician roles (3%). A notable segment (3%) is also employed in policing and the armed forces, indicating a steady pathway into public sector roles. These trends confirm that men tend to gravitate toward technical trades, engineering, and sales-related fields, with relatively fewer entering healthcare or educational professions.

In contrast, female TVET graduates have a very different employment distribution. A substantial 55% of employed female graduates work as teachers or trainers (906 individuals), making education by far the dominant field for women. Other notable professions include parlor/beautician services (8%), computer operations (4%), and medical assistant/technician roles (4%). While there is some female representation in IT and administrative roles, such as computer operators (4%) and graphic design or freelancing (2%), their overall presence in digital and industrial sectors remains limited

Smaller percentages are also employed in customer care (2%), finance/accounting (2%), and administrative functions (2%). Unlike their male counterparts, female graduates show almost no participation in mechanical, electrical, or industrial trades, instead aligning with roles in education, healthcare, and personal services—fields that resonate with existing gender norms in the labour market.

These employment patterns suggest a strong gender influence on career pathways, with men dominating technical and industrial roles, while women are overwhelmingly represented in education, beauty, and service sectors. The trend extends into self-employment as well, where women often start small businesses in beauty, tailoring, or tutoring, while men are more likely to run workshops, engage in digital freelancing, or operate retail businesses. This division reflects both cultural expectations and the differing economic opportunities available across sectors. While men benefit from wider access to high-paying technical roles, women's significant contribution to education underscores their role in national skill development. However, the underrepresentation of women in core engineering and manufacturing sectors points to existing barriers—ones that could be addressed through targeted training initiatives and inclusive employment incentives.

8.3.3 Employment Type Breakdown

The employment breakdown of TVET graduates reveals a diverse range of labour market outcomes, with a 60% employment rate and 40% of graduates engaged in self-employment. This high self-employment rate underscores the entrepreneurial potential of TVET training, where a significant portion of graduates leverage their skills to start their own businesses rather than seek traditional employment.

Self Employed	**40%**
Employed	**60%**
Regular Paid Employment	**84%**
Daily Wage Worker	**8%**
Paid Apprenticeship	**4%**
Unpaid Apprenticeship	**4%**

Table 11: Employment wise Breakdown

Among the 60% employed graduates, the majority—84%—are in regular paid employment, suggesting that TVET programs are effectively equipping graduates for stable, structured jobs across various industries. Regular employment offers consistent income, job security, and benefits, making it the preferred route for most employed graduates. However, 8% of employed graduates work as daily wage labourers, indicating that a portion of TVET-trained individuals rely on short-term or project-based work, which can often be unstable and subject to market fluctuations. These workers may be engaged in construction, technical services, or trades with irregular demand, where job security

remains a challenge.

Additionally, 8% of employed graduates are engaged in apprenticeships, with 4% in paid apprenticeships and another 4% in unpaid apprenticeships. Paid apprenticeships provide a structured learning-to-work transition, allowing graduates to gain hands-on experience while earning a stipend, which is a valuable stepping stone into long-term employment. However, the presence of unpaid apprenticeships suggests that some graduates must work without immediate financial return to gain industry-relevant experience, which may present financial hardships and limit accessibility for economically disadvantaged individuals.

The high proportion of self-employed graduates (40%) further highlights the importance of entrepreneurship in TVET employment outcomes. Many graduates, particularly those in beauty services, repair & maintenance, freelancing, and retail businesses, have opted to establish their own enterprises rather than seek employment. This trend reflects both opportunities and challenges—while self-employment provides independence and income potential, it also comes with risks such as inconsistent earnings, market competition, and access to financing.

Overall, the employment landscape for TVET graduates indicates strong formal employment absorption, but with a notable portion of the workforce engaged in daily wage and unpaid apprenticeship positions. The significant reliance on self-employment also underscores the need for enhanced entrepreneurial support, including financial assistance, business development training, and market access initiatives, to ensure the sustainability of small businesses started by TVET graduates.

8.3.4 Sectors in which Self-Employed operates

Sectors for Self Employed Graduates		
Sectors	**Number of Graduates**	**Percentage of total Self Employed**
Services	1931	45.7%
Retail/Trading	852	20.2%
Aesthetics health and care services	534	12.6%
E-Commerce & Freelancing	413	9.8%
Education	159	3.8%
Agriculture & Livestock	105	2.5%
Repair and Maintenance	100	2.4%
Wholesale & Distribution	61	1.4%
Manufacturing	51	1.2%
Others	18	0.4%
Total	4224	100%

Table 12: Common Sectors Self Employed
Note: Service sectors include jobs like repair services, technicians etc.

The distribution of self-employed graduates across different sectors highlights a strong preference for service-oriented businesses, with 46% (1,931 individuals) engaged in the services sector. This dominance suggests that many graduates are leveraging their vocational training to establish small businesses in personal care, home services, and specialized skill-based offerings. The appeal of this sector likely stems from low entry barriers, flexible work arrangements, and steady consumer demand for various service-based professions.

The second-largest sector is Retail/Trading, which employs 20% (852) of self-employed graduates. Many graduates are venturing into small-scale businesses, local trade, and independent retail operations, capitalizing on their skills to sell products or manage small shops. The presence of 534 self-employed individuals (13%) in aesthetic health and care services—such as beauty salons, spas, and personal grooming businesses—suggests that TVET programs related to cosmetology and wellness are translating effectively into self-employment opportunities, particularly for female graduates.

E-Commerce & Freelancing (10%) is another emerging sector, with 413 graduates utilizing digital skills to operate online businesses, manage drop shipping, or work as freelancers in web development, digital marketing, and content creation. This sector's presence reflects the increasing relevance of digital entrepreneurship and the growing accessibility of online income sources. However, its share remains lower than traditional service-based businesses, indicating potential barriers such as internet accessibility, digital payment systems, or market competitiveness.

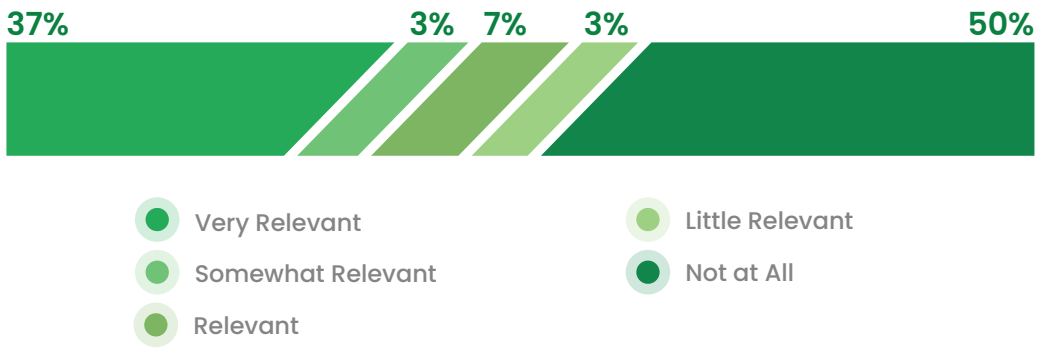
Education (4%), Agriculture & Livestock (2%), and Repair & Maintenance (2%) represent relatively smaller portions of self-employed graduates. While education (159 individuals) reflects some graduates offering tutoring or private training services, agriculture &

livestock (105 individuals) highlights self-employment opportunities in farming, poultry, and dairy-related businesses, particularly in rural areas. The repair and maintenance sector (100 individuals), though limited in scale, suggests that some technical graduates, particularly in electrical, mechanical, and home appliance repair, are setting up independent workshops.
At the lower end of the spectrum, Wholesale & Distribution (1%), Manufacturing (1%), and other businesses (0%) show minimal engagement from self-employed graduates. Wholesale & distribution (61 individuals) is likely constrained by capital requirements and supply chain complexities, while manufacturing (51 individuals) remains an underdeveloped sector for self-employment, possibly due to higher startup costs and infrastructure needs. The "Others" category (18 individuals, 0%) indicates a handful of graduates engaging in niche or less common business activities.

Overall, the high self-employment rates in services, retail, and aesthetic health businesses suggest that TVET graduates are primarily leveraging their skills for direct-to-consumer business models. Meanwhile, emerging opportunities in e-commerce, freelancing, and digital entrepreneurship indicate evolving self-employment trends, though structural challenges may still limit broader participation. To enhance self-employment success, support mechanisms such as access to micro-financing, business training, digital literacy programs, and market linkages will be critical in scaling up these enterprises and ensuring sustainable livelihoods for self-employed graduates.

8.3.5 Job Alignment with Training

How well do these jobs match the graduates' training fields? The survey data suggests a mixed picture. Roughly half of working graduates are employed in jobs directly related to their field of training, while the other half have jobs outside their trained specialization.



In fact, about 50% of employed respondents reported that their current job is "not at all" related to the skills they learned in TVET. Conversely, the remaining half found some degree of alignment: approximately 37% indicated their job is "very relevant" to their training, and an additional ~13% reported it to be "somewhat" or "little" relevant (Somewhat relevant: partially relevant; Little relevant: mostly irrelevant). This indicates that while many graduates do leverage their training in their jobs, a significant number end up in unrelated occupations.

In summary, only about half of graduates achieve a close match between their job and their TVET field, highlighting a gap between training and job placement for many individuals.

Statistical analysis (Training Relevance and Job Satisfaction)

The statistical method applied here is the **Chi-Square Test of Independence**, which is used to evaluate whether there is a significant relationship between two categorical variables: the **relevance of training** to a graduate's current job and their **level of job satisfaction.**

The survey data strongly supports the conclusion that job satisfaction among graduates increases as the relevance of their training to their current job or business increases. Those who reported their training as "**very relevant**" were by far the most likely to say they were "**very satisfied**" with their jobs—**2,405 out of that group** reported being very satisfied. In contrast, only **26% of those who said their training was "not at all" relevant** reported high satisfaction, with many more falling into the neutral or dissatisfied categories.

This trend suggests that when graduates are able to apply what they learned during training directly to their jobs, they experience greater confidence, engagement, and fulfillment. Even though some individuals working in unrelated roles still reported satisfaction—likely due to other factors like income or job stability—the sharp increase in satisfaction among those in aligned roles reinforces the importance of relevance.

8.4 Training Alignment with Industry Demand

The alignment of TVET training with industry demand is a critical measure of program effectiveness, ensuring that graduates possess the skills needed in the Labor market.

The survey results indicate that 80% of employed respondents believe their training aligns well or very well with industry needs, with 41% rating it as "Very Well" and 39% as "Well". This suggests that a majority of graduates perceive their training as relevant and applicable in their respective fields, demonstrating the success of TVET programs in equipping students with market-driven competencies.

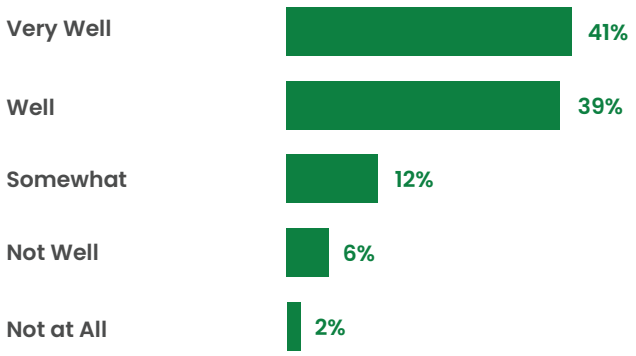


Figure 7: Training Alignment with Industry Demands

A smaller proportion, 12%, rated the alignment as "Somewhat," indicating that while they found aspects of their training useful, certain gaps or mismatches with employer expectations may exist. These could stem from evolving industry trends, outdated curricula, or limited hands-on experience during training.

Interestingly, a negative perception is observed among a minority, with 6% stating that the training did "Not Well" align with industry needs and 2% believing it did "Not at All". These responses highlight concerns that may relate to inadequate practical exposure, outdated equipment, or insufficient employer engagement in curriculum development.

The overwhelmingly positive perception of training alignment with industry demand underscores the importance of training and employer collaboration in shaping curricula. However, the small percentage of dissatisfied graduates suggests areas for continuous improvement, such as stronger industry linkages, internships, and updated skill modules, to enhance job readiness and adaptability in the evolving job market.

8.5 Graduates Satisfaction with the Quality of Training and Services Provided

8.5.1 Training Quality

The training quality and overall training conditions were assessed based on graduates' perceptions of course content, teaching methodologies, and the availability of equipment, classrooms, and lab facilities. The findings indicate a strong positive reception toward training programs, with 62% of graduates rating the training quality as "Very Good" and another 28% marking it as "Good." This suggests that 90% of graduates were satisfied with the educational content, instructional methods, and overall effectiveness of their training.

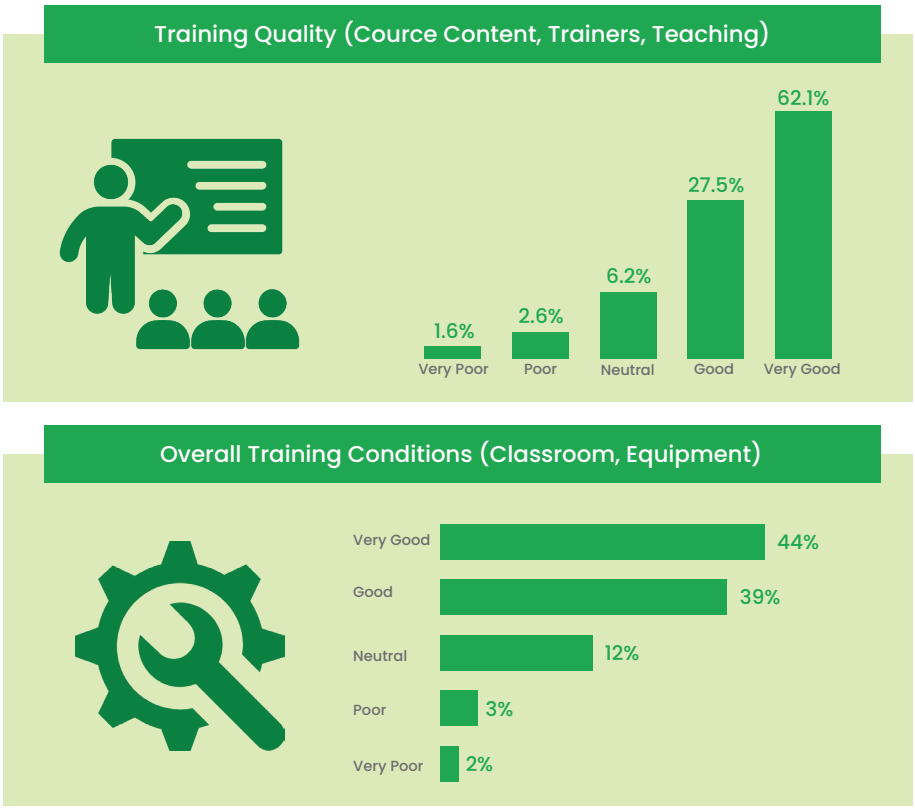


Figure 8: Feedback about Training Quality and Conditions

Similarly, overall training conditions—which include facilities such as machinery, classrooms, and laboratories—were also rated positively, with 44% considering them "Very Good" and 39% rating them as "Good." This indicates that 83% of graduates were satisfied with the infrastructure and learning environment provided by their respective training institutes.

A small portion of respondents (6% for training quality and 12% for training conditions) remained neutral, signalling some room for improvement in either teaching effectiveness or institutional facilities. Negative responses were minimal, with only 5% rating both training quality and training conditions as "Poor" or "Very Poor." These figures suggest that while most graduates found the training well-structured and beneficial, a small subset may have encountered challenges related to outdated equipment, limited hands-on learning, or gaps in course delivery.

The overwhelmingly high satisfaction levels affirm the effectiveness of TVET training institutes in delivering competency-based and conventional training programs. However, to further enhance training outcomes, institutes should continue upgrading technical infrastructure, modernizing teaching methodologies, and strengthening industry linkages to ensure that graduates receive training aligned with evolving labour market demands.

8.5.2 Theory-Practical ratio

Employment Rate-Theory to Practical Ratio					
Theory - Practical Ratio	CBT	CONV	DAE	DIT	High Tech
Theory 20% - Practical 80%	86%	52%	81%	64%	54%
Theory 50% - Practical 50%	61%	52%	57%	50%	72%
Theory 60% - Practical 40%	38%	50%	41%	42%	49%
Theory 80% - Practical 20%	22%	39%	20%	38%	39%
Overall Average	52%	48%	49%	49%	53%

Table 13: Employment Rate Theory - Practical Ratio

The analysis of employment rates across varying theory-to-practical training ratios reveals a consistent and compelling pattern: greater practical content in technical and vocational programs leads to significantly stronger employment outcomes. When practical training makes up 80% of the curriculum, employment rates are highest across all major training types—CBT (86%), DAE (81%), and DIT (64%)—affirming that applied learning directly enhances job readiness. Even in fields where theoretical grounding plays a stronger role, such as High-Tech (54%) and Conventional (52%) training, the most practice-intensive models outperform more academically weighted counterparts, underlining the universal value of hands-on experience.

Interestingly, High-Tech training performs best under a 50:50 balance, with a 72% employment rate—suggesting that sectors reliant on digital and cognitive competencies benefit from integrated instruction combining theoretical understanding and applied skill-building. In contrast, CBT's employment rate falls to 61% under the same balance, indicating that more traditional trades depend more heavily on high-intensity practical exposure for effective labour market absorption.

As the curriculum shifts further toward theory-heavy formats—60:40 and 80:20 ratios—employment outcomes drop sharply across all streams. CBT and DAE are particularly impacted, with employment rates falling to 38% and 41% respectively at the 60:40 level, and plummeting to just 22% and 20% when practical content is reduced to 20%. Even High-Tech and Conventional programs—typically more adaptable to blended formats—see employment decline to 49% and 50% at 60:40, and further to 39% under the 80:20 model.

These trends strongly validate the need for rebalancing TVET curricula in favor of practical training, especially in skill-centric trades like CBT, DAE, and DIT. For programs in rapidly evolving sectors such as IT and digital innovation, an equal emphasis on theory and application appears most effective. Overall, enhancing practical exposure and aligning curricula with real-world occupational standards is critical to improving employment outcomes and closing the skills–employment gap in Pakistan's workforce.

Statistical Analysis (Training's Theory–Practical Ratio and Job Satisfaction)

The **Chi-Square Test of Independence** was used to assess whether a significant relationship exists between the **theory–practical ratio** in training and **job satisfaction** among TVET graduates. This test helps determine whether differences in satisfaction levels are statistically associated with how much practical training is included in the program. The test produced a chi-square statistic of **43.79** and a **p-value of 0.000016,** indicating a **statistically significant** relationship between the two variables.

The dataset supports the interpretation that graduates are more satisfied when their training includes a larger practical component. Among those who underwent training with an **80% practical and 20% theory** ratio, **1,645 reported being "very satisfied",** the highest proportion across all groups. In contrast, graduates from **80% theory and 20% practical** programs had the fewest "very satisfied" responses **(101 total)**, despite still reporting a generally decent level of satisfaction overall.

This trend shows a consistent decrease in high satisfaction levels as the proportion of theory increases, reinforcing the importance of hands-on training. Graduates with more practical exposure likely feel more confident and ready to transition into the workplace, which contributes to a stronger sense of job satisfaction. Even in more theory-heavy programs, satisfaction isn't absent—but the consistent edge held by practice-focused training emphasizes the value of applied learning.

8.5.3 Feedback on Support Services

Support services, particularly the Career Counselling & Job Placement (CCJP) initiative, reached 61.2% of graduates, while 38.8% did not receive guidance. Among those who benefited, 93.4% expressed satisfaction, with 53.3% rating their experience as "Satisfied" and 40.1% as "Very Satisfied." Neutral responses accounted for 4.8%, while dissatisfaction was minimal, with only 1.8% reporting a negative experience. The overwhelmingly positive feedback suggests that career support services were highly effective in helping graduates transition into employment, while the 38.8% without access highlight the need for broader service availability. The low dissatisfaction levels also suggest that other institutional support services were generally well-received.

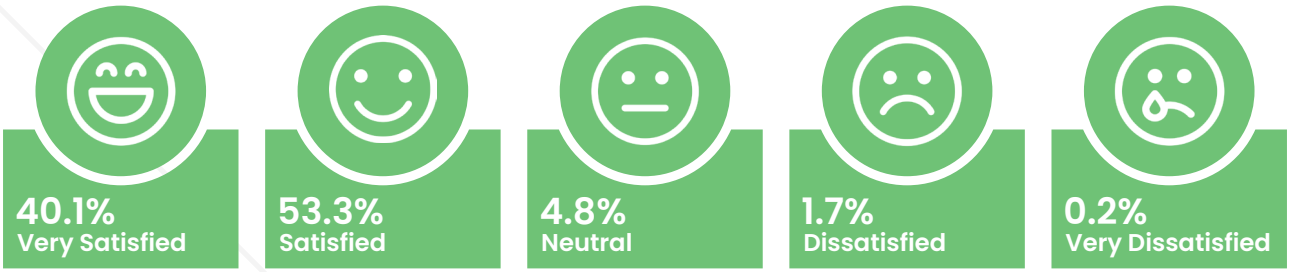


Figure 9: Feedback on CCJP Guidance

Statistical analysis (CCJP Career Services and Graduate Employability)

To assess whether career counselling and job placement (CCJP) support is associated with better employment outcomes for TVET graduates, a **Chi-Square Test of Independence** was applied. This statistical test is used when both variables are categorical—in this case, the type of CCJP experience (e.g., received or not, satisfaction

level, perceived helpfulness) and the graduate's employment status (e.g., employed, self-employed, unemployed). The test checks whether the observed differences in employment rates across CCJP categories are statistically significant, or whether they could have occurred by chance. It was applied by constructing contingency tables that cross-tabulated each CCJP variable with employment outcomes, then calculating whether the distribution of employment statuses was significantly different across the levels of CCJP exposure and perception.

The results show a clear and statistically significant pattern: **graduates who received CCJP support had higher employment rates** than those who did not. Specifically, the combined employment rate (employed + self-employed) for CCJP-supported graduates was **36%,** while those who did not receive CCJP support had lower employment levels (around 28% in broader comparisons). More importantly, **graduates who rated CCJP as "Very Helpful" had a combined employment rate of 46%,** while those who found the support "Not Helpful" had only 18% employment. Similarly, graduates who expressed high satisfaction with CCJP guidance were more likely to be employed compared to those who were dissatisfied. These findings suggest that not only access to career services but also the **quality and relevance** of those services play a critical role in supporting graduate employability. Strengthening CCJP—especially by improving service delivery, tailoring support to local job markets, and increasing employer engagement—can substantially enhance employment outcomes for future cohorts.

Perhaps the clearest indicator of graduate satisfaction is whether they would recommend the program/institute to others. Here the response is overwhelmingly positive: about 90% of graduates said "Yes," they would recommend their TVET institute or training program to others. This high recommendation rate encapsulates the general satisfaction – most alumni were happy with their training experience. Only about 9% would not recommend, which aligns with the small minority who had neutral or negative views on quality.

9 out of 10

Graduates said they will recommend the TVET program.

8.6 Outcome of Graduate Employment on Household Economy

Regions	Male			Female			Overall		
	Avg Income Before	Avg Income After	Deviation	Avg Income Before	Avg Income After	Deviation	Avg Income Before	Avg Income After	Deviation
Azad Jammu and Kashmir (AJK)	25,000	25,000	0%	27,500	32,500	18%	26,667	30,000	12%
Balochistan	20,625	28,750	39%	17,581	20,484	17%	18,617	23,298	25%
Gilgit Baltistan	46,250	48,750	5%	25,000	25,000	0%	42,000	44,000	5%
Islamabad	53,302	57,547	8%	30,652	30,652	0%	46,447	49,408	6%
Khyber Pakhtunkhwa	28,620	34,156	19%	18,375	20,813	13%	26,508	31,405	18%
Punjab	33,084	40,607	23%	19,192	22,555	18%	28,920	35,196	22%
Sindh	43,401	47,778	10%	22,857	24,107	5%	37,382	40,838	9%
Overall	35,755	40,370	19%	23,022	25,159	13%	32,363	37,358	18%

Table 14: Impact on Household Income of Graduates

Note: This table is based on a total of 1,477 graduates who reported both their pre- and post-TVET income; therefore, the average post-training income may differ from other data.

Indicates lowest value in the column

Indicates highest value in the column

Male graduates experienced a notable increase in income post-TVET, with an overall average rise of 19%. The most significant income growth was observed in Balochistan (39%), followed by Punjab (23%) and Khyber Pakhtunkhwa (19%), indicating that TVET programs have had a substantial economic impact in regions with historically lower income baselines. Moderate income growth was also reported in Islamabad (8%), Sindh (10%), and Gilgit Baltistan (5%), while Azad Jammu and Kashmir (AJK) showed no change in male income levels (0%), suggesting either market stagnation or the persistence of wage ceilings in the region.

In contrast, the income increases for female graduates averaged 13% nationally, reflecting a narrower economic gain compared to males. Notably, AJK (18%), Balochistan (17%), and Punjab (18%) showed stronger income growth among women, suggesting regional progress in women's labour market inclusion. Khyber Pakhtunkhwa (13%) and Sindh (5%) followed, while Islamabad and Gilgit Baltistan showed no change in female earnings post-TVET (0%), underscoring ongoing structural and societal barriers to equitable wage progression for women in urban and remote regions alike.

At the national level, the income of TVET graduates rose from PKR 32,363 before training to PKR 37,358 after training, marking an 18% average increase across all genders. Regionally, the most substantial overall improvements were recorded in Balochistan (25%), Punjab (22%), and Khyber Pakhtunkhwa (18%), where the correlation between TVET participation and economic upliftment is most evident. AJK (12%), Sindh (9%), and Islamabad (6%) reported moderate gains, while Gilgit Baltistan (5%) showed the smallest improvement in post-training income.

These figures reaffirm that TVET programs significantly contribute to enhancing graduate

earnings and household financial resilience, particularly in regions with low pre-training income levels. However, the gender gap in income growth persists, with males consistently outpacing females in post-TVET financial outcomes. This trend emphasizes the need for targeted support mechanisms to improve female wage parity, such as gender-responsive industry linkages, workplace inclusion programs, and specialized job placement support.

The region-specific disparities also highlight those urban centres like Islamabad and remote regions like Gilgit Baltistan, while showing higher pre-training income levels, may face labour market saturation or skill-job mismatches, thus muting the economic impact of TVET. Conversely, rural and underdeveloped provinces like Balochistan and KP showcase strong returns on vocational training, confirming its role as a powerful tool for economic mobility and inclusive growth.

Statistical Analysis (Income Before vs. After TVET Training)

To assess the effect of TVET on participants' income, the **Wilcoxon Signed-Rank Test** was employed. This **non-parametric statistical test** is used to compare two related samples—in this case, the income levels of the same individuals **before and after** completing the TVET program. The test is ideal when the data is **ordinal** (such as income brackets) and not normally distributed. Since participants reported their income in predefined brackets (e.g., "PKR 20,000–30,000"), these were converted to ordinal values to analyse whether there was a significant shift in income levels post-training.

The analysis was conducted on 778 individuals who reported income levels both before and after TVET training. The Wilcoxon Signed-Rank Test revealed a test statistic of 4378.0 with a p-value less than 0.00001 ($p \approx 6.41 \times 10^{-40}$), indicating a highly significant difference between pre- and post-training income levels. This strong statistical evidence supports the observation that participants experienced a meaningful upward shift in income brackets after completing the program. The results affirm that TVET has a positive impact on earning potential, contributing significantly to the financial empowerment of graduates—especially those who were already engaged in employment or entrepreneurial activities before enrolment.

8.7 Employer Feedback on TVET Graduate Performance

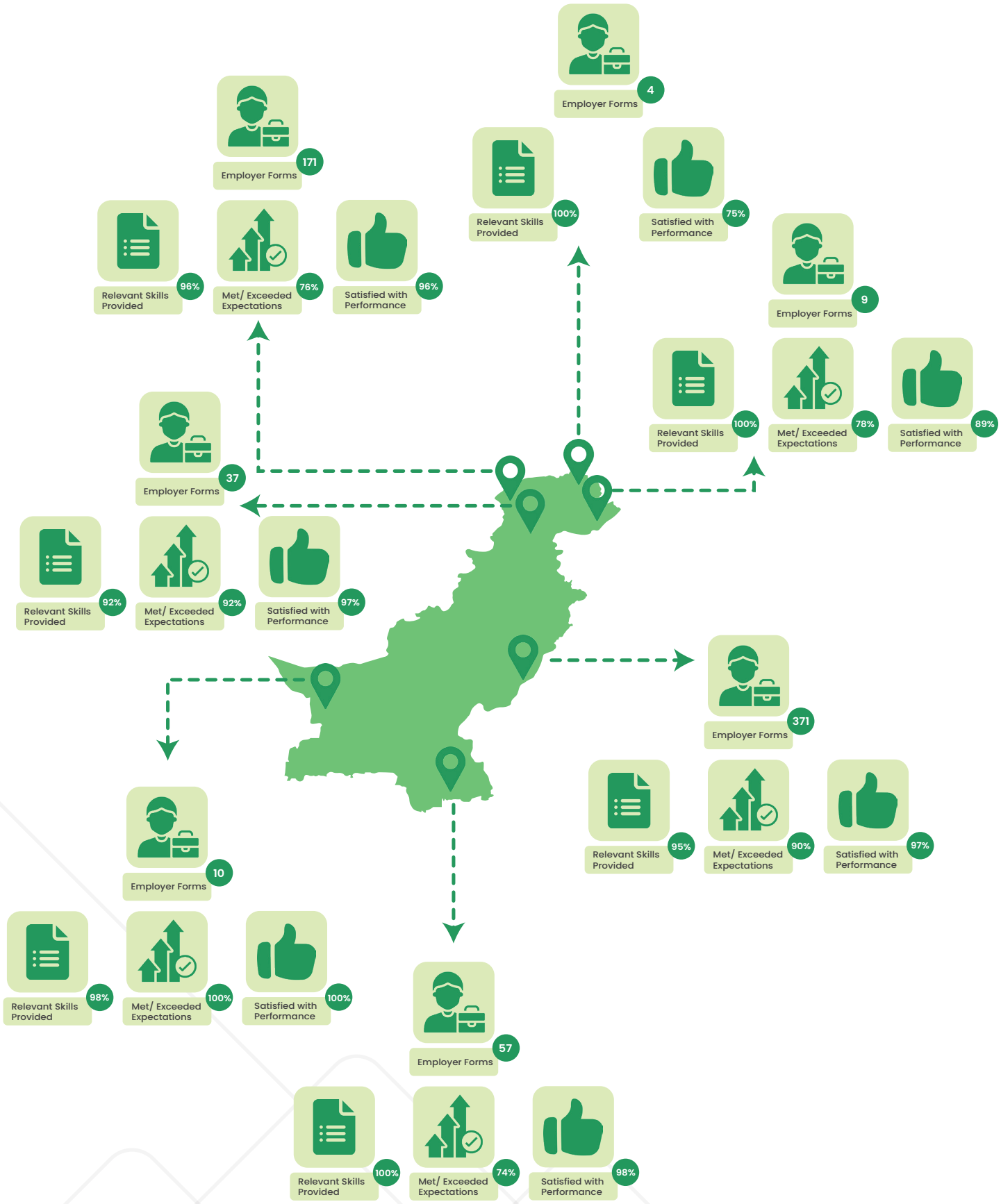


Figure 10: Employer Feedback on TVET Graduate Performance.

A survey was conducted to evaluate the alignment between TVET training and industry requirements by gathering insights from employers who hired TVET graduates. In compliance with GIZ requirements, a 10% sample of employers was surveyed from the 6,357 employed graduates, resulting in responses from 658 employers across Punjab, KP, Sindh, ICT, Balochistan, AJK, and Gilgit Baltistan. This sample was considered representative, ensuring a reliable evaluation of employer perspectives while maintaining feasibility in data collection.

The results highlight that employers largely recognize the relevance of TVET training. The percentage of employers who confirmed that TVET graduates possessed relevant skills was highest in Gilgit Baltistan, AJK, and Sindh (100%), followed by Balochistan (98%), KP (96%), Punjab (95%), and ICT (92%). These figures demonstrate that the majority of TVET graduates are equipped with skills deemed relevant by their employers. However, when assessing whether graduates met or exceeded employer expectations, notable variations emerge. The highest satisfaction levels were recorded in Balochistan (100%), Punjab (90%), and ICT (92%). AJK (78%) and KP (76%) reported slightly lower levels of expectation fulfillment, whereas Sindh (74%) showed the lowest alignment between training and job expectations. These findings suggest that while skills are generally relevant, gaps exist in translating training into workplace readiness, particularly in KP and Sindh. Despite these variations, employer satisfaction with overall performance remains high across most regions. The highest satisfaction levels were observed in Balochistan (100%), followed by Sindh (98%), Punjab (97%), and ICT (97%). Employers in AJK (89%) and KP (96%) also reflected strong satisfaction, whereas Gilgit Baltistan reported the lowest satisfaction rate (75%).

While TVET training is broadly aligned with industry requirements, the disparity in employer expectations versus performance in certain regions indicates room for improvement. Employers in some provinces emphasized the need for stronger industry collaboration to ensure that curricula remain updated and responsive to industry needs, enhanced practical training to bridge theoretical knowledge and real-world application, workplace exposure and internships to strengthen employer engagement in training programs, and curriculum refinement to address regional gaps in training content, particularly in Sindh and KP, where employers indicated relatively lower satisfaction in expectations met.

8.7.1 Employer Feedback on Graduate Performance - Trade Type Wise

	CBT	Conventional	Overall
Relevent Skills Provided	96%	95%	96%
Graduate Met/Exceed Expectation	90%	94%	93%
Satisfaction with Performance	97%	96%	96%
	Based on 236 Employers of Employed Graduate	Based on 422 Employers of Employed Graduate	Based on 658 Employers of Employed Graduate

Table 15: Employer Feedback on Graduate Performance - Trade Type Wise

As part of the tracer study, 658 employers who hired TVET graduates were surveyed to evaluate how well the training aligned with industry expectations and how graduates performed on the job. This included 236 employers of CBT graduates and 422 employers of Conventional training graduates. The results reflect a strong endorsement of the

relevance and effectiveness of both training streams.

Across all respondents, 96% of employers confirmed that the skills provided by TVET institutes were relevant to their industry needs, indicating that both CBT and Conventional programs are successfully aligned with labour market demands. The similarity in responses between CBT (96%) and Conventional (95%) underscores the broad-based competency of graduates, regardless of training modality.

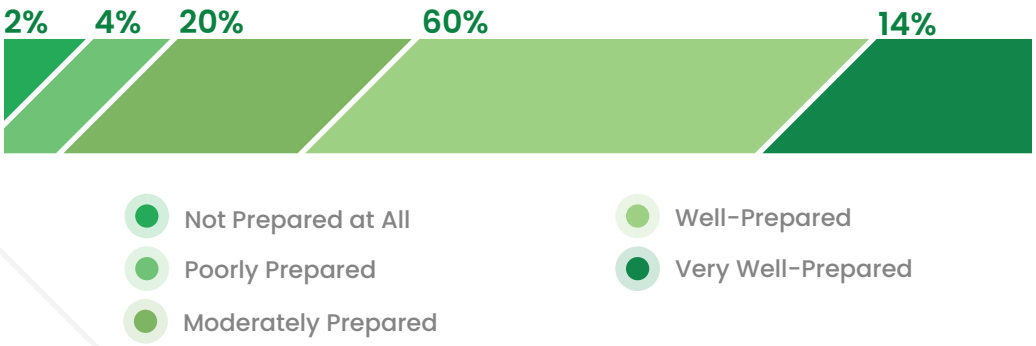
When asked whether graduates met or exceeded their expectations, 93% of employers overall responded positively, with 90% for CBT and a slightly higher 94% for Conventional graduates. This marginal difference may reflect the relatively higher employer satisfaction associated with digital, IT, and freelancing-focused trades commonly found in the Conventional stream.

Satisfaction with graduate performance was similarly high across the board, with 96% of all employers expressing satisfaction, including 97% of CBT employers and 96% of Conventional employers. These figures reinforce previous findings that CBT graduates perform well in traditional technical and hands-on roles, while Conventional graduates are excelling in more digitally-oriented and service-based occupations.

Overall, the employer feedback validates the effectiveness of TVET programs in producing job-ready graduates with relevant skills, strong performance capabilities, and the ability to meet industry expectations. The consistently high ratings across all categories highlight the critical role of continued curriculum relevance, practical training, and employer engagement in maintaining graduate employability.

8.7.2 Graduate Preparedness

When assessing how well-prepared TVET graduates are for the Labour market, employer feedback reveals both strengths and challenges.



60% of employers classify graduates as “Well-Prepared”, and an additional 14% consider them “Very Well-Prepared.” This indicates that nearly three-quarters (74%) of graduates are seen as ready for employment upon graduation.

21% of employers rate graduates as “Moderately Prepared”, suggesting that while they possess foundational skills, additional training or experience may be needed before they can fully meet job requirements.

A small but notable 6% of employers find graduates to be "Poorly or Not Prepared." This signals a gap where certain graduates may lack crucial competencies required by industries, likely due to limited hands-on experience or outdated curricula.

These findings suggest that while TVET programs are largely effective, a stronger emphasis on practical application, industry engagement, and workplace exposure could further enhance graduate readiness.

8.7.3 Areas for Improvement

Employers highlight several key areas where TVET programs need improvement to better align graduates with evolving labour market demands.

- **41% emphasize the need for more hands-on training, apprenticeships, and industry-based learning.**

The most critical area for enhancement is practical training (41%), with a strong emphasis on increasing hands-on learning opportunities, apprenticeships, and on-the-job training. Many employers believe that while theoretical knowledge is covered, graduates often lack real-world application experience, making it difficult for them to transition smoothly into the workforce.

- **31% highlight the importance of enhancing technical skills in IT, engineering, and digital sectors.**

Similarly, technical skills (31%) require strengthening, particularly in high-demand fields such as IT, engineering, and digital skills. Employers stress the need for updated training methodologies that incorporate emerging technologies and industry trends.

- **13% stress the need for better communication, teamwork, and adaptability training.**

Beyond technical expertise, soft skills (13%) have become a growing concern, as communication, teamwork, and adaptability are now essential attributes for employees in professional settings. Employers suggest integrating structured soft skills training into TVET curricula to ensure graduates can effectively collaborate and perform in dynamic work environments.

- **9% believe graduates need stronger workplace readiness and problem-solving skills.**

Additionally, general preparedness (9%) remains an area for improvement, as some employers feel that graduates lack workplace readiness, problem-solving skills, and business acumen. This gap could be addressed through workplace simulations, mentorship programs, and structured internship opportunities.

- **4% advocate for improved job-specific vocational and service skills and 2% call for expanded entrepreneurship and business management training.**

Although mentioned less frequently, vocational & service skills (4%) and business & administration skills (2%) also warrant attention, particularly for graduates pursuing self-employment or careers in service-oriented industries. Enhancing entrepreneurship training and customer service skills would better equip TVET graduates to establish and sustain their own businesses. These insights underscore that while TVET programs are moving in the right direction, greater emphasis on workplace exposure, refined technical instruction, and integrated soft skills development will be critical for ensuring future graduate success in the labour market.

8.8 Institutes survey Insights

The survey covered ten vocational training institutes across Islamabad, Punjab, Sindh, KP, and Balochistan, offering both CBT and Conventional Trade Training. These institutes provide specialized programs in IT, engineering, industrial trades, fashion, and hospitality, catering to evolving labour market needs. The study aimed to evaluate the accreditation status, enrolment capacity, graduate employability, industry partnerships, gender representation, and post-graduation support services. The findings shed light on institutional strengths and challenges in providing industry-relevant skills and ensuring sustainable employment pathways for graduates.

8.8.1 Accreditation & Institutional Capacity

Most surveyed institutes are accredited by recognized bodies such as NAVTTC, PEC, and provincial Technical Education and Vocational Training Authority (TEVTAs), ensuring that graduates receive nationally recognized credentials. However, some institutions, such as the Gems and Jewellery Training Centre in Peshawar, are still in the process of obtaining accreditation. Despite this, their graduates are awarded NAVTTC-certified qualifications, maintaining national credibility.

The establishment years of these institutes vary, with some, like Corvit Networks Pvt. Ltd., operating since 2000, while others, such as Meta Pi and Gems and Jewellery Training Centre, were established as recently as 2019. This variation influences their institutional maturity, industry linkages, and alumni network strength. The graduate production capacity also fluctuates, with some institutes producing over 200 graduates annually, whereas others experience uncertainties due to funding constraints, faculty shortages, and student retention challenges. Although most institutes report high graduation rates (85%-100%), dropout rates persist due to financial constraints, university enrolment, or a lack of industry demand for specific fields.

8.8.2 Popular Courses & Employment Outcomes

The most sought-after training programs reflect market trends and industry demands. Courses in IT and digital skills, such as Cloud Computing, Cybersecurity, Digital Marketing, and E-Commerce, are experiencing growing demand as industries shift toward technology-driven job markets. Meanwhile, traditional industrial trades, including AutoCAD, Welding, Electrical, and Mechanical Engineering, remain relevant but require modernization to meet evolving industry standards. The creative and service sectors, particularly Fashion Design, Beauty, Dressmaking, and Jewellery Making, continue to attract a substantial number of trainees.

Employment outcomes differ across trades. Graduates from IT-related programs exhibit the highest employability, with 50%-70% securing jobs within six months. Industrial trade graduates experience moderate employment rates, depending on sectoral demand and industry linkages. However, graduates from fashion and jewellery-making programs face

employment challenges, primarily due to limited market linkages and fewer formal job opportunities, despite the sector's growth potential. Graduates secure employment in IT and digital services, manufacturing, hospitality, retail, health, education, and self-employment sectors. However, many institutes lack proper tracking mechanisms to monitor long-term career progression, making it difficult to measure employment sustainability.

8.8.3 Gender Representation & Barriers

Gender representation in vocational training varies significantly by course type. Technical and engineering programs remain male-dominated, whereas fashion, beauty, and digital marketing courses attract more female trainees. Certain institutions, such as NISA Institute of Science & Arts in Quetta, cater exclusively to female students, reflecting gendered course preferences.

Several cultural and structural barriers hinder female participation in technical fields. Industry reluctance to hire women in non-traditional roles, workplace constraints due to lack of gender-inclusive facilities, and social mobility restrictions limit employment opportunities for female graduates. To counter these challenges, institutes have introduced counselling sessions, employer sensitization programs, and flexible training schedules for women. However, these initiatives remain limited in scope and require greater institutional commitment to ensure equal access to employment opportunities for female graduates.

8.8.4 Industry Linkages & Post-Graduation Support

Institutes offer varying levels of career support, ranging from structured career counselling sessions, CV-writing workshops, and job placement assistance to relying on informal student networks for employment opportunities. While some institutes actively facilitate graduate employment tracking, many lack formalized placement services, making it challenging to assess long-term job retention rates. Strengthening graduate tracking mechanisms and enhancing institutional job placement services would improve employment alignment and post-graduation support.

8.8.5 Entrepreneurship Support

Entrepreneurship is an increasingly viable career path for TVET graduates, particularly in digital services, trade-based self-employment, and freelancing sectors. Graduates involved in e-commerce, digital marketing, beauty services, tailoring, and jewellery making have shown interest in starting their own businesses. Some institutions, such as GTTTC Peshawar, assist students with grant applications, while Corvit Networks Pvt. Ltd. provides exposure to digital marketplaces. However, many institutes lack structured business incubation centres, mentorship programs, and access to microfinance, making it difficult for graduates to transition into successful self-employment. Expanding entrepreneurship support systems would enhance graduate financial independence and job creation potential.

8.8.6 Industry Partnerships

Industry partnerships play a crucial role in graduate employability. Some institutes have 15-20 active collaborations with companies, providing internships and job placement opportunities. Others struggle to establish formal agreements, limiting access to work-based training. While a few institutions, such as GTTTC Peshawar and LGITE Lahore, have international collaborations with Takamul Saudi Arabia, most institutes lack global industry linkages, restricting access to overseas employment markets. Additionally, private-sector linkages remain inconsistent, affecting the availability of apprenticeships and industry-led training programs. Strengthening industry partnerships through formal agreements would significantly enhance employment prospects for graduates.

Key Takeaways

1. Reputation and Employment Outcomes

- Trainees from institutes with a strong reputation for quality and branding tend to have higher employment rates.
- Graduates from institutions with well-established industrial linkages are more likely to secure jobs, emphasizing the significance of industry partnerships in skill development.

2. Industrial Linkages and Demand-Driven Courses

- Institutes located in industrial cities that offer demand-driven courses or design their curricula in consultation with industry stakeholders report higher job placement rates.
- This alignment between training programs and industry demands enhances employability, ensuring that graduates possess skills that meet current market needs.

3. Need for Value Chain-Oriented Courses in Small Cities

- In smaller towns and cities, it is essential to develop training programs based on existing value chains and economic sectors.
- Employment rates were observed to be higher in trades where there was an active value chain presence, reinforcing the need for region-specific skill development strategies that align with local industry dynamics.

4. Selection Process for Trainees

- It was recommended that training institutes should have representation in the selection of trainees to ensure that enrolees align with the skill requirements and expectations of the programs.
- A structured selection process can help improve program effectiveness and ensure better job placements post-training.

5. Addressing Low Attendance Rates

- Low attendance rates were identified as a major concern in some training programs.
- To mitigate this issue, certain institutions have started adopting engagement strategies such as flexible learning options, attendance incentives, and mentorship programs to improve participation and retention.

6. Entrepreneurial Engagement and Enterprise Development

- The study found that 40% of students are currently running their own enterprises, highlighting a strong entrepreneurial inclination among trainees.
- To support this, it is recommended that enterprise development skills be integrated into training programs, equipping trainees with the knowledge and tools to effectively manage, sustain, and scale their businesses.

7. Financial Support and Business Linkages

- Strengthening linkages between training institutes and financial support programs is crucial for fostering entrepreneurial growth among graduates.
- Access to financial resources such as interest-free loans from Akhuwat and other government-backed initiatives would provide graduates with essential funding and support mechanisms to start and sustain their businesses.
- Encouraging partnerships with financial institutions, business incubators, and industry stakeholders will create smoother transitions from training to business ownership, fostering a stronger entrepreneurial ecosystem.

The surveyed institutes reported that all of them are registered with regulatory bodies, including NAVTTC, FBR, and Provincial TVET authorities, while some also hold affiliations with international certification bodies. This demonstrates the commitment of regulatory bodies to award courses only to institutes possessing the requisite certifications.

Additionally, the institutes mentioned regular monitoring visits conducted by regulatory bodies both before and during training to ensure training quality.

9. Recommendations

Issue	Details about Issue	Impact on Graduates /Institutes/Labour Market	Recommendation (Responsible Stakeholders)
Gender disparity in outcomes	Female graduates form 39% of alumni yet face a 35% lower average income (PKR ~24k vs ~37k for males), and over half of employed women cluster in teaching roles.	Limits women's career options and earning potential;institutes underutilize female talent; labour market misses skilled workers in non-traditional roles, perpetuating skills gaps and wage inequality.	**NAVTTC & Provincial TVET Authorities:** Develop and enforce gender inclusion strategies (e.g. scholarships and outreach for women in technical trades, gender-sensitive campus facilities). **Institutes & Employers:** Partner on female-focused internships and mentorships in high-paying industries; conduct employer sensitization programs to break biases in hiring women for technical roles.
Regional inequalities in employment	Industrial regions (Punjab/ICT) show ~50–55% graduate employment and higher wages, whereas AJK and Balochistan lag (e.g. AJK conventional employment just 37%, Balochistan incomes ~PKR 24k).	Graduates in less-developed regions struggle to find quality jobs, fueling unemployment or migration; local institutes face lower placement rates; regional economies don't fully benefit from skilled youth, widening provincial disparities.	**Provincial TVET Authorities & NAVTTC:** Tailor programs to local industry needs (e.g. agriculture value-add in rural areas, SME skills in AJK). Invest in job placement cells in lagging regions to connect graduates with opportunities (including out-of-province jobs). **Industry Associations:** Extend outreach and remote work opportunities to graduates in underdeveloped areas (e.g. ICT companies recruiting talent from AJK/Balochistan through virtual work).

Issue	Details about Issue	Impact on Graduates /Institutes/Labour Market	Recommendation (Responsible Stakeholders)
High self-employment rate without adequate support 	~40% of working graduates became self-employed, often in services (beauty, tailoring) or freelancing – yet many lack access to credit or business training.	Without business skills or financing, graduate-run microenterprises may remain small or fail; institutes miss chance to showcase entrepreneurial success; economy loses potential job creators if startups don't scale, and graduates might revert to job-seeking.	**NAVTTC & Enterprise Support Programs:** Integrate entrepreneurship modules in all TVET curricula (financial literacy, business planning). **Institutes:** establish entrepreneurship support desks to help graduates register businesses or access loans (e.g. linking with Akhuwat for micro-loans). **Industry Associations & Chambers:** mentor TVET entrepreneurs and include them in trade fairs to expand market access.
Curriculum industry misalignment in certain trades 	Employers in some regions (e.g. only 74% in Sindh) felt graduates met job expectations; graduates of traditional trades (e.g. fashion, jewelry-making) face limited formal jobs.	Graduates may be inadequately prepared for specific job demands (needing retraining on modern techniques) or trained in fields with scarce local demand, leading to underemployment. Institutes with outdated curricula see lower placement and reputation. Local industries struggle to find niche skills or ignore TVET graduates if training is off-mark.	**NAVTTC & Industry Associations:** Form sector-specific curriculum review panels (with employers from sectors like textiles, construction, IT) to regularly update training content and include emerging skills. Adopt a demand-driven approach – offer courses based on regional market studies and phase out or modernize low-demand trades **Institutes:** Introduce mandatory industrial internships or on-the-job training in every course to ensure real-world skill application.

Issue	Details about Issue	Impact on Graduates /Institutes/Labour Market	Recommendation (Responsible Stakeholders)
Insufficient practical exposure in training 	Some programs remain theory-heavy – analysis shows graduate satisfaction drops as theory hours increase. 8% of employed grads only found daily-wage work and 4% had unpaid apprenticeships, implying they needed more hands-on experience.	Graduates without enough hands-on practice struggle with job tasks, lowering their confidence and employer confidence. This can lead to longer job searches or accepting informal work to "learn by doing". Institutes that don't prioritize practical labs may see lower graduate performance and satisfaction scores. In the labour market, employers spend extra resources on training new hires in basic practical skills.	**Institutes & Provincial Authorities:** Ensure each program meets a minimum 60:40 practical-to-theory ratio. Upgrade training facilities (workshops, labs) and invite industry experts for practical sessions. **NAVTTC:** Include practical skill demonstration in assessments/certification to enforce hands-on competence. **Employers:** Expand paid apprenticeship programs and collaborate with institutes to offer students real-work projects before graduation, so graduates enter jobs work-ready.
Weak graduate tracking and placement services 	Many institutes lack formal alumni tracking; only ~61% of graduates receivedcareer counseling or job placement support during training. Institutes without placement units see piecemeal employer engagement.	Without follow-up, institutes lose feedback on program success and cannot assist struggling graduates, impacting their accountability and improvement. Graduates without placement support rely on personal networks, which can prolong unemployment. The labour market operates less efficiently as skill supply and demand don't match optimally when institutes aren't active intermediaries.	**Training Institutes:** Establish dedicated Career Services Centers to maintain graduate databases, track employment status, and regularly liaise with employers. **NAVTTC & Provincial TVET Authorities:** Incentivize institutes (through performance funding or recognition) to achieve high placement rates and conduct annual tracer surveys. **Employers:** Provide feedback to institutes on graduates' performance and skill gaps, and participate in campus recruitment drives facilitated by the institutes.

Issue	Details about Issue	Impact on Graduates /Institutes/Labour Market	Recommendation (Responsible Stakeholders)
Variable training quality and resources among institutes 	Persistent gender gaps in employment rates and income necessitate strategic interventions. To increase female participation in non-traditional technical fields, training institutes must implement targeted enrolment campaigns, provide secure transportation, establish gender-sensitive workplaces, and launch advocacy programs aimed at altering societal perceptions about women's employment.	Uneven training quality means graduate outcomes differ widely by institute – some alumni are highly skilled and sought after, others less so, creating an inconsistent talent pool for employers. Under-resourced institutes may have higher dropout or lower pass rates, wasting student time and public funding. Students from weaker institutes may feel disadvantaged, and overall TVET sector credibility can suffer due to a few weak links.	**Provincial TVET Authorities & NAVTTC:** Conduct regular institutional evaluations and accreditation renewals focusing on teaching quality, facilities, and industry linkages. Provide capacity-building support to weaker institutes (train-the-trainer programs, grants for equipment upgrades). **High-performing Institutes:** Mentor lower-performing institutes (twinning programs) to share best practices in student retention, instruction, and employer engagement. **Government (Federal/Provincial):** Allocate budget for need-based scholarships or stipends to reduce financial dropouts and ensure students can complete training.

10. Annexures

10.1 Total Graduates

Province	CBT				Conventional				Grand Total
	Female	Male	Other	Total	Female	Male	Other	Total	
AJ&K	3,111	2,159		5,270	1,580	2,224	15	3,819	9,089
BALOCHISTAN	234	108		342	4,866	4,574	14	9,454	9,796
GB	-	-	-	-	780	847	2	1,629	1,629
ICT	432	154		586	1,824	6,134	67	8,025	8,611
KP	4,453	6,480	2	10,935	7,854	50,623	22	58,499	69,434
PUNJAB	44,880	41,462	1	86,343	36,077	54,825	164	91,066	177,409
SINDH	1,379	2,158	1	3,538	7,166	11,374	76	18,616	22,154
GRAND TOTAL	**54,489**	**52,521**	**4**	**107,014**	**60,147**	**130,601**	**360**	**191,108**	**298,122**

10.2 Survey Sample

Province	CBT			Conventional			Grand Total
	Male	Female	Total	Male	Female	Total	
AJ&K	216	311	527	222	160	382	909
BALOCHISTAN	11	23	34	457	488	945	980
GB	0	-	-	85	78	163	163
ICT	15	43	59	613	189	803	861
KP	648	447	1,095	5,062	788	5,850	6,945
PUNJAB	4,146	4,489	8,635	5,483	3,624	9,107	17,742
SINDH	216	139	355	1,137	724	1,862	2,216
GRAND TOTAL	**5,252**	**5,453**	**10,705**	**13,060**	**6,051**	**19,111**	**29,816**

10.3 Actual Surveyed

Province	CBT			Conventional			Grand Total
	Female	Male	Total	Female	Male	Total	
AJ&K	160	87	247	57	68	125	372
BALOCHISTAN	23	11	34	508	631	1,139	1,173
GB	-	-	-	58	80	138	138
ICT	48	32	80	175	614	789	869
KP	502	700	1,202	766	4,657	5,423	6,625
PUNJAB	4,777	4,653	9,430	3,938	5,963	9,901	19,331
SINDH	151	226	377	776	1,314	2,090	2,467
GRAND TOTAL	**5,661**	**5,709**	**11,370**	**6,278**	**13,327**	**19,605**	**30,975**

10.4 Institutes Surveyed

Sr. No	Institute name	Region	District	Male	Female	Total	Employment Rate
1.	Corvit Networks Pvt. Ltd	ICT	Islamabad	243	12	255	73%
2.	Meta Pi Private Limited	ICT	Islamabad	152	24	176	67%
3.	GTTTC Hayatabad	KP	Peshawar	143	93	236	71%
4.	Gems and Jewellery Training Centre	KP	Peshawar	122	20	142	79%
5.	Nisa Institute of Science and arts	Baluchistan	Quetta	0	55	55	17%
6.	Destination Educational and Development Society	Baluchistan	Quetta	53	45	98	80%
7.	Iqra University	Sindh	Karachi	53	177	230	67%
8.	Memon Industrial and Technical institute	Sindh	Karachi	669	68	737	60%
9.	Lahore Garrison Institute for Technical Education (LGITE)	Punjab	Lahore	43	80	123	-
10.	Vocational Training Institute Shadman	Punjab	Lahore	55	62	117	63%

10.5 Districts Surveyed

Uraban					
Abbottabad	Faisalabad	Islamabad	Lahore	Peshawar	Sahiwal
Bahawalpur	Gujranwala	Karachi	Mardan	Quetta	Sargodha
Dera Ghazi Khan	Hyderabad	Korangi	Multan	Rawalpindi	Sialkot

Rural						
Astore	Dadu	Jacobabad	Killa Abdullah	Mastung	Panjgur	Sukkur
Attock	Dera Bugti	Jaffarabad	Kohat	Matiari	Pishin	Swabi
Authmuqam	Dera Ismail Khan	Jamshoro	Kohistan	Mianwali	Poonch	Swat
Badin	Diamir	Jhal Magsi	Kohlu	Mirpur	Qilla Saifullah	Tando Allahyar
Bagh	Dir	Jhang	Kotli	Mirpurkhas	Rahim Yar Khan	Tando Muhammad Khan
Bahawalnagar	Gandaf	Jhelum	Kurram Agency	Mohmand	Rajanpur	Tank
Bajaur	Ghanche	Kachhi	Kurram District	Muzaffarabad	Rawalakot	Tharparkar
Bannu	Ghizer	Kalat	Lakki Marwat	Muzaffargarh	Sanghar	Thatta
Barkhan	Ghotki	Kamra	Larkana	Nagar	Shahdadkot	Toba Tek Singh
Battagram	Gilgit	Karak	Lasbela	Nankana Sahib	Shaheed Benazirabad	Umerkot
Bhakkar	Gujrat	Kashmore	Lasbela	Narowal	Shangla	Upper Dir
Bhimber	Gwadar	Kasur	Layyah	Nasirabad	Sheerani	Vehari
Buner	Hafizabad	Kech	Lodhran	Naushahro Firoz	Sheikhupura	Zhob
Chagai	Hangu	Khairpur	Loralai	Neelum	Shikarpur	
Chakwal	Haripur	Khanewal	Lower Chitral	North Waziristan	Sibi	
Charsadda	Harnai	Kharan	Lower Dir	Noshki	Skardu	
Chilas	Hattian	Khushab	Malakand	Nowshera	South Waziristan	
Chiniot	Haveli	Khuzdar	Mandi Bahauddin	Okara	Sudhanoti	
Chitral	Hunza	Khyber District	Mansehra	Pakpattan	Sudhnuti	