



# Skills Gap Analysis

## Khyber Pakhtunkhwa



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# **Skills Gap Analysis**

## **Khyber Pakhtunkhwa**

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# ACRONYMS USED

BTE	Board of Technical Education
CDS	Comprehensive Development Strategy
DAE	Diploma in Associate Engineer
DBA	Diploma in Business Administration
DFID	United Kingdom Department for International Development
DIT	Diploma in Information Technology
EGS	Economic Growth Strategy
ESD	Education for Sustainable Development
FATA	Federally Administrated Tribal Area
IDI	Industrial Production Index
ILO	International labour Organization
JICA	Japan International Cooperation Agency
KP	Khyber Pakhtunkhwa
NAVTC	National Vocational and Technical Training Commission
NSIS	National Skills Information System
NVQF	National Vocational Qualification Framework
P&D	Planning & Development
PBOS	Provincial Bureau of Statistics
RAC	Refrigeration and Air conditioning
S&C	Skills Standards & Curricula
SDG	Sustainable Development Goals
TTB	Trade Testing Board
TVET	Technical & Vocational Education & Training
UAE	United Arab Emirates
UNCEF	United Nations International Children's Emergency Fund
UNDF	United nation Development Fund
UNDP	United nation Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
UPS	Uninterruptible Power Supply

# MESSAGE FROM MD-KPTEVTA

Socio-economic development of a nation is linked with availability of educated and trained workforce. If education is considered to be the “key” then Technical Vocational Education & Training (TVET) is termed as “master key” to development. In order to reform the TVET Sector, National Vocational & Technical Training Commission is looking into the issues pertaining to policy guideline, coordination, standardization, regulation, National Vocational Qualifications Framework (NVQF), Accreditation, Apprenticeship, demand driven and market based training by enhancing the greater role of employer including private sector working in TVET sector. Although workforce development encompasses many aspects, education and training are the two main areas for policy intervention. Training contributes to rapid technological adoption and innovation which ultimately helps in generating employment opportunities. It is observed that educated workforce takes less time to adopt new technology and its implementation. Not only this, it also generates ideas for improving efficiency. To realize the benefits of TVET, many developed countries have ensured that all school going age children shall get TVET training in addition to school education. As TVET training is found to be main determinant of employment. It provides skills to workers and enhances productivity at workplace which is highly valued employers.

The development objectives are hard to achieve without getting workforce development in focus. A comprehensive understanding of skilled workforce and labour market scenario especially on type of jobs, vacancies and skills is a necessary input to policies formulation and decision making in TVET Sector. The accurate and timely availability of statistical information always provide valuable support in policy formulation and informed decision making. Realizing the need, NAVTTC has established National Skills Information System (NSIS) Cell at its headquarters in Islamabad in October 2014. This Cell is ensuring provision of an online “common platform” for provision of TVET related information to TVET stakeholders including policy makers, donors, employers, graduates, potential trainees, TVET institutes and public in general. This information will be easily accessible from NSIS website <http://nsis.navttc.org> in addition to regular dissemination of the information through periodical reports and quarterly job analysis bulletins. NSIS cell is connected with provincial TEVTA's and QABs. Khyber Pakhtunkhwa is the first province in Pakistan where skilled workforce data was collected from the employers and skills Gap analysis report has been prepared. This Skills Gap Analysis for Khyber Pakhtunkhwa highlights TVET related skills demand of the provincial labour market and identifies mismatch in skilled workforce supply and demand. It will not only enable policy makers in result based planning but will also contribute to policy decisions in TVET sector.

The efforts of the provincial Bureau of Statistics, TEVTA staff and NSIS Team are really appreciated for their dedicated work on preparation of this quarterly job bulletin in collaboration with GIZ (our implementing partner) under TVET Reform Support Program.



**Munibullah Khan**  
Managing Director  
KP TEVTA

# EXECUTIVE SUMMARY

The technical and vocational skill shortage has remained a major challenge for Khyber Pakhtunkhwa over the decades in the industries especially in manufacturing, construction, mining and service sectors. The privatization and economic restructuring programmes launched at federal level have caused further imbalance in the supply provision of skilled labour. The soaring gaps between demand and supply of skilled labour have adversely impacted the efficiency of the industry sector leading to less production and non-adjustment of surplus labour available in the market. Consequently, the economic growth could not pick the required speed in accordance with the market trends of labour position with respect to the arising situation. The challenge of closing the gaps and reducing unemployment at national and provincial levels can only be addressed with the exploitation of available potential in the Technical and Vocational, Education and Training Institutions (TVET) through upgrading their skills as per modifications of technology.

Realizing the need of dealing such an urgent matter, the National Vocational & Technical Training Commission (NAVTTTC), Government of Pakistan has established a National skill information system (NSIS) under TVET Reform Programme of GIZ at its Headquarters in Islamabad in December, 2014 aimed at developing a reliable Information System for workforce development in employable skills, providing timely and accurate information on demand and supply analysis to TVET planners, training institutions, industry, academia, students, public in general and establishing vocational guidance and placement services for TVET graduates and potential employers. The main objective of the study focuses on calculating labour market demand for skilled work force on the basis of calculating skill supply and demand gaps analysis, supply and demand mismatch, the skills workforce demand for Pak China Economic Corridor (CPEC) and skilled deficiencies in labour market of KP. The demand side questionnaire has been designed in the target areas and implemented with the support of Provincial Departments such as Provincial Statistical Bureau (PBOS), Mining Department, Provincial TEVTA and Chamber of Commerce & Trade and Trade association for ensuring linkages between government departments responsible for various policies affecting the skilled market and statistical agencies for institutional collaboration relating to collection of skilled market information.

The data indicates that number of working vocational institutions stand at 569 numbers accounting for 95% in comparison with functioning of meagre 30 numbers of technical institutions which contribute to only 5% of total supply of TVET institutions. Moreover, the strength of skilled workforce provided by the technical institutions in a year stand at 25,580 persons whereas skilled workforce supplied by vocation institutions consists of 73,912 persons per an-

num in the KPK which is more than half of the skilled workforce produced by the technical institutes. The 1,882 industrial units are working in the manufacturing sector whereas only 168 industrial units are found in the construction sector. The 1,150 industrial units are available in the mining sector and only 624 units are engaged in the services sector. The highest workforce deficiency is found in mining sector which accounts for 99% of total skilled workforce followed by service sector (98%) and construction sector (82%) while least skilled workforce deficiency has been reported in manufacturing which makes up only 21% of total skilled workforce.

The highest skilled workforce has been reported in the manufacturing with 80.9% followed by service with 71.6%, mining with 50.4% and least provision of skilled workforce is in the construction with only 4.2% of total workforce. The supply of skilled workforce on technical side based on DAE civil (6,500), electrical (5,000), mechanical (2,000), electronics (1,000) and telecom (less than 1,000) is more than the available demand of 3,000 and less than 1,000 skilled persons in the market which means creation of awareness is required amongst the people for investment in these sectors aimed at adjustment of surplus skilled workforce for utilizing their skill in the development of economy. The basic computer and tailoring & dress on vocational side have the capacity of producing 5,000 skilled persons each against demand of only 2,000 and less than 1,000 skilled persons respectively

The findings will help the policy and planners at provincial level, training institutions and other TVET stakeholders in the formulation of decision making for designing and implementation of need based training system to reduce skill gaps between supply and demands in the Province.



# INTRODUCTION

Skill shortages and surpluses have emerged during the process of economic transition in Pakistan as a consequence of privatization and economic restructuring. Newly created jobs due to technological modification required different advance skills and demand for new skills that takes place more rapidly than the education and training system that could able to adapt to widespread skill shortages. Moreover, economical structural changes at National and Provincial level lead to skill mismatch making this a permanent phenomenon resulting in high levels of long-term unemployment. Such skills mismatch increases with the age of workers in Pakistan than falling as against happen in the developed economies.

Realizing the need, the NAVTTC, Government of Pakistan established a NSIS under TVET Reform Programme of GIZ at its Headquarters in Islamabad in December, 2014.

The main objective of NSIS Cell is following:

- To develop a reliable National Skills Information System for workforce development in employable skill
  - Skills Information System
  - Establish data collection system (supply and demand)
  - Supply and Market Demand Management
  - Supply and Market Demand Analysis
  
- To provide timely and accurate information on demand and supply analysis, to TVET planners, training institutions, industry, academia, students and public in general;
  - Information Dissemination System
  - Establish interactive platform/network for TVET stakeholders
  - Align TVET plans, policies, programmes with NSIS
  
- To establish and facilitate career/vocational guidance and placement services for TVET graduates and potential employers;
  - Establish Career/Vocational Guidance Service
  - Establish Job Placement Service
  - Provide information on skill available and skill required

The objective of the jobs analysis is to find out skills demand of job market in various TVET related trades in Pakistan, identify deficiencies and opportunities of each trade in national and international job markets.

Information compiled in this report is collected by NSIS cell through the various jobs for skilled workforce, advertised in national and international Job Websites and newspapers on daily basis. The NSIS cell will also issue a regular monthly job bulletin. In addition to this, a periodical/annual report will be compiled from the monthly data bank. This data will provide basis to conduct analysis, identify nation-wide supply and demand gaps of TVET Graduates in addition to identification of trend and impact of training conducted in a whole year.

All the national and International TVET information is available on the NSIS website (<http://www.skillingpakistan.org/>) and sharing its' updates on skilling Pakistan Facebook page (<https://www.facebook.com/skillingpakistan>) linking the job seeker to national and international market.

## OBJECTIVES

The main objective of the study is to calculate labour market demand for skilled work force with following sub-objectives;

- To calculate skill supply and demand Gaps Analysis
- To adjust the skill supply as per the Labour Market demand
- To calculate supply and demand mismatch
- Calculate and predict the skills workforce demand for Pak China Economic Corridor
- To calculate skilled deficiencies in labour market of KP
- To know about the future skilled demand of KP

## METHODOLOGY

Institutional arrangements to collect data are an integral part of a skills information system. The possibility to collect and gather relevant information on regular basis, and thus the sustainability of the NSIS, is directly dependent on the institutional structure in which the system operates. At the very least, linkages are required between government departments responsible for various policies affecting the skilled market on the one hand, and statistical agencies on the other. The use of innovative methods to collect skilled market information, however, may necessitate more extensive institutional collaboration and co-operation. The use of administrative records, for example, or the operation of a system of key informants, involves establishing a network of many organisations, including both users and producers of information.

In the developed country, in mostly cases skilled workforce projection is used for calculation of workforce supply and demand, therefore, it is suggested to conduct census once. On the other hand, the inclusion of the skilled related indicator in regular statistical activities in the country may add significant contribution to the projection of skilled workforce.

With support of the following provincial department the demand side questionnaire has been implemented in the mentioned target area.

1. Provincial Bureau of Statistics (PBOS)
2. Mining Department

3. Provincial TEVTA
4. Chamber of Commerce & Trade and Trade association

In case of Khyber Pakhtunkhwa NSIS Cell have a plan to collect data from three two emerging sector on the basis of the local economy of Baluchistan, which is following.

1. Manufacturing Sector
2. Construction Sector
3. Services Sector (Hospitality)
4. Mining

Each team visited the industrial zone, mining site, hotels, and construction industries office to collect data on provided demand side questionnaire. The PBOS was responsible for data quality, editing and supervision of the data collection exercise.

### **Demand Side data collection Methodology**

A NSIS consists of a set of institutional arrangements, procedures and mechanisms that are designed to produce skilled information. Following are the basic components of skilled information system;

1. Users-individuals and organisations;
2. Sources of signals, indicators and intelligence;
3. System managers, data gatherers, operators and analysts;
4. Skilled information itself;
5. Methodology of data collection and analysis;
6. Equipment-computers and other hardware;
7. Processing software;
8. Means of communication, including public media;
9. Financial resources;

### **Sub-systems**

- a. Training for IT system staff and end users (Provincial Stakeholders)
- b. Feedback and evaluation
- c. Research, development and publications of the key area

This list shows that Skill information is the only one component in the system. Therefore, the users of NSIS and the methodology applied to collect and analyze data are important. The equipment that is used, as the capacity to store and retrieve information is one of the significant development as its using relatively a simple hardware.

Institutional arrangements to collect data are an integral part of a skills information system. The possibility to collect and gather relevant information on regular basis, and thus the sustainability of the NSIS, is directly dependent on the institutional structure in which the system operates. At the very least, linkages are required between government departments responsible for various policies affecting the skilled market on the one hand, and statistical agencies on

the other. The use of innovative methods to collect skilled market information, however, may necessitate more extensive institutional collaboration and co-operation. The use of administrative records, for example, or the operation of a system of key informants, involves establishing a network of many organisations, including both users and producers of information. In the context of Pakistan, the skilled information system depends on the intergradation of the various public and private institutions.

## **Industrial Sector**

The government department of industries, commerce and trade collect data from all industrial zones based on under mentioned indicators;

- a. District wise total number of industrial unit running and closed
- b. Major group of industries and types
- c. Number of workers working in different type of industries
- d. Production of the different industrial units (IPs)

## TVET INSTITUTION OWNERSHIP WISE

The data presented in the pie chart demonstrates comparison between availability of technical as well as vocational institutions in KP province. It depicts that the number of working vocational institutions are to be 569 that account for 95% in comparison with functioning of meagre 30 numbers of technical institutions which contribute to only 5% of total supply of TVET institutions. The sluggish growth in the supply of technical institutions and rapid increase in vocational institutions has shown the marked policy difference between two institutes. The pathetic situation can be witnessed in regard to ownership of technical institutions that is required to be reviewed for enhancement in its supply aimed at filling the gaps and matching the education with the skills in different relevant institutes emerging in the market from time to time.

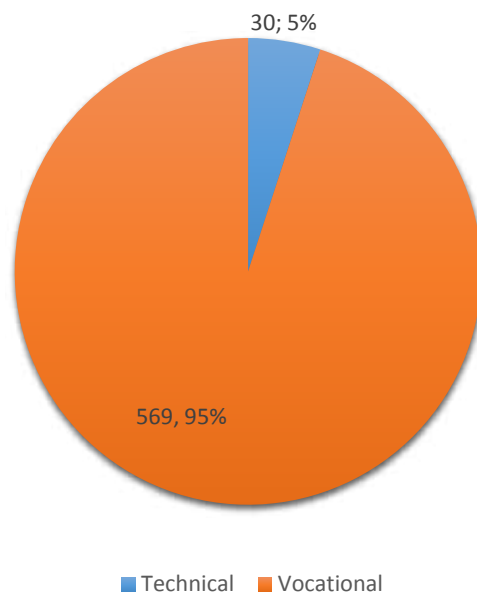


Figure 1: TVET Institution ownership wise

## ANNUAL SUPPLY OF TVET INSTITUTION

The figure indicates annual supply of skilled workforce from both technical and vocational institutions to meet the emerging demand of market in KP. The graph depicts that total number of skilled workforce provided by the technical institutions in a year stands at 25,580 persons whereas skilled workforce supplied by vocation institutions consists of 73,912 persons per annum in the province which is more than half of the skilled workforce produced by the technical institute. The notable phenomenon in comparison of data between two types of institutes is on rise in the skilled workforce generated by the vocational institute over technical institute. The reduced number of skilled workforce in the technical trades reflects radical changes needed for improvement in the efficiency of existing technical institutions and augmenting in its numbers so that soaring demand of market may be met as per the evolving needs of the market.

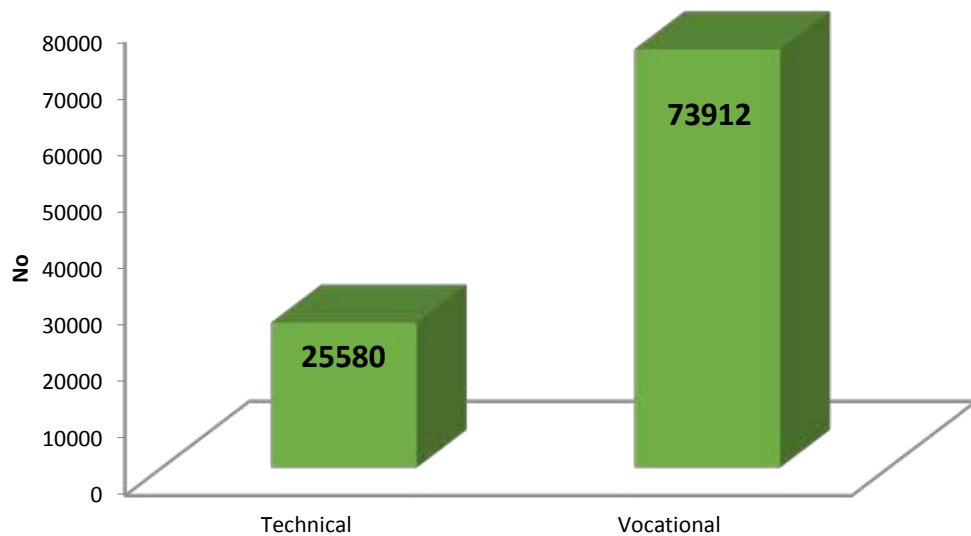


Figure 2: Annual supply of skilled workforce

## INDUSTRIAL UNITS IN KHYBER PAKHTUNKHWA SECTOR WISE

The data in the graph shows deficiency of skilled workforce in different industrial units of KP ranging from manufacturing to service sector. The rapid growth of production has slowed down leading to decreased efficiency in the provincial economy or in case of filling the gap with work based learner increase market value cost. Now the data is interpreted quantitatively to measure the actual deficiency in the manufacturing, construction, mining and service sectors of the province. The 1,882 industrial units are working in the manufacturing sector whereas only 168 industrial units are found in the construction sector. The 1,150 industrial units are available in the mining sector and only 624 units are engaged in the services sector. The stark comparison gives conspicuous results that manufacturing sector ranks top in terms of having availability of industrial units whereas construction sector leads deficiency of skilled workforce. The status of industrial units in mining and service sector lies in between the highest and lowest sector which indicates acute deficiency of skilled workforce. The deficiency of skilled workforce in the mining, service and construction needs to be bridged through increasing number of industrial units in the province.

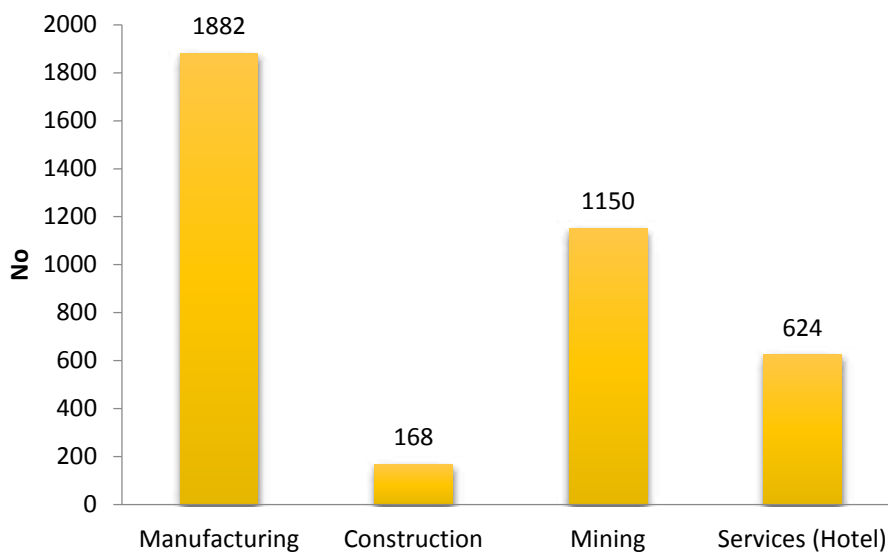


Figure 3: Sector wise industrial units

## SKILLED WORKFORCE DEFICIENCY

The graph below presents clear picture of skilled workforce deficiency in manufacturing, construction, mining and service sectors of the provincial economy in KP which indicates emerging gaps of workforce deficiency due to which the efficiency of the industry is adversely affected. The facts displayed in the graph point out comparison of workforce deficiency in various sectors of KP and the highest workforce deficiency is found in mining sector which accounts for 99% of total skilled workforce. The mining sector is followed by service sector (98%) and construction sector (82%) while least skilled workforce deficiency has been reported in manufacturing which makes up only 21% of total skilled workforce. As far as availability of skilled workforce in these sectors is concerned, manufacturing sector takes a lead with 79% availability of skilled work force followed by construction sector with 18 % only whereas mining and service sectors have only 1% and 2% skilled workforce respectively. This require immediate attention of KP government to ensure supply of skilled workforce through increase in TVET institutions aimed at meeting the demand of the emerging market.

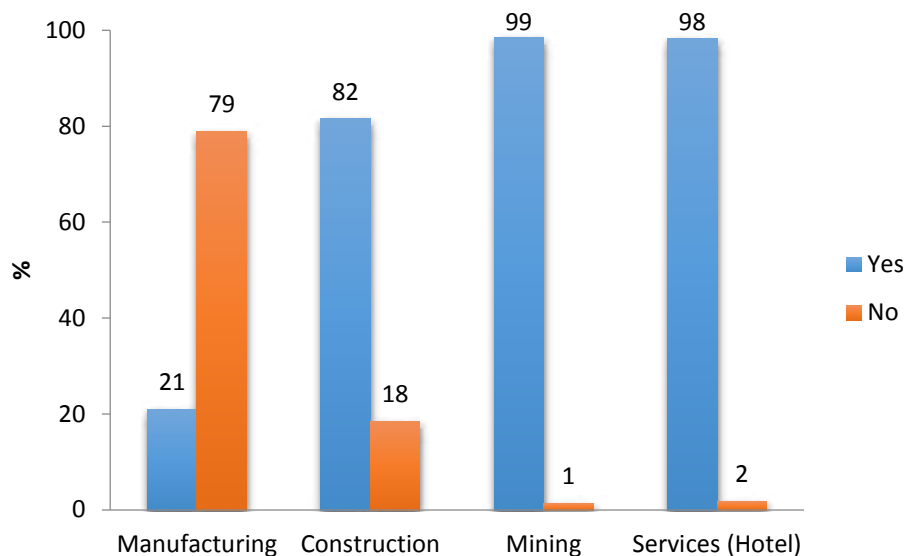


Figure 4: Do you face skilled workforce deficiency



## SOURCE OF EXISTING SKILLED WORKFORCE

The graph manifests the sources of existing skilled workforce in mining, construction, mining and service sectors across TVET graduate, work based learner, informal sector and others. The work based learner provides the highest skilled workforce in the manufacturing with 80.9% followed by service with 71.6%, mining with 50.4% and least provision of skilled workforce is in the construction with only 4.2% of total workforce. The supply of skilled workforce made by TVET graduates is the highest in the construction with 36.3% followed by manufacturing with 9.2% and service with 6.1% while the least provision of skilled workforce by TVET graduate is found in mining sector with negligible 0.6%. As far as informal sector is concerned, mining takes the lead overwhelmingly in terms of supply of skilled workforce followed by services with 16.5% and manufacturing with 6.2% whereas only 3% skilled workforce is available in the construction sector. The contribution of other sectors in the provision of skilled workforce cannot be ignored as the construction has the highest skilled workforce with 56.5% followed by mining with 18.3%, service with 5.8% and manufacturing with only 3.7%. The sources such as TVET graduate and informal sectors etc from where less skilled workforce is coming, need to be reviewed at the policy and planning level for ensuring increase in its supply to the sectors of economy.

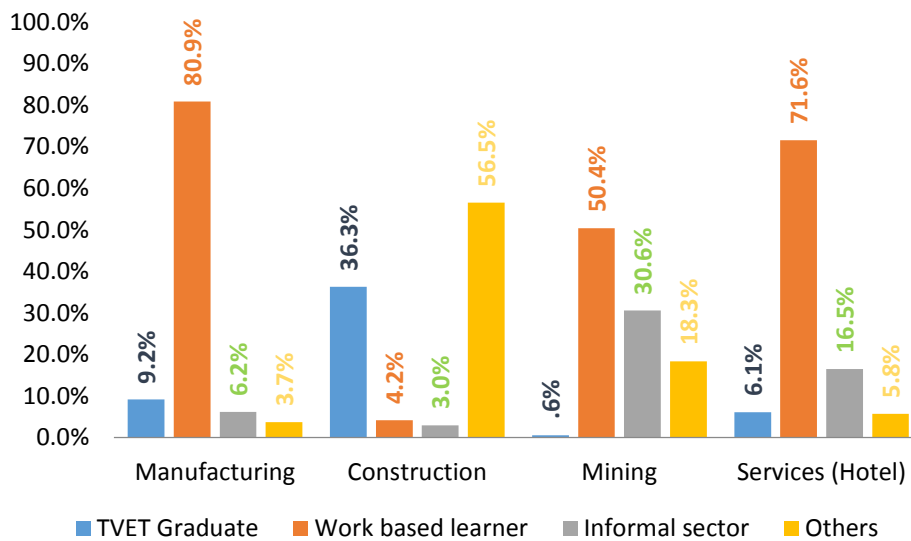


Figure 5: Source of existing skilled workforce

## SECTOR AND LEVEL WISE SKILLED WORKFORCE DEMAND

The graph explains sector and level wise skilled work force demand prevailing in the manufacturing, construction, mining and service sectors in KP. The data is analysed comparatively for arriving at the measureable demand to provide guidelines to the planners and policy makers to bring reforms for provision of skilled workforce to these institutes on sustainable basis. The skilled workforce demand is the highest in mining with over 10% under category of B-Tech level followed by manufacturing and service with equal percentage demand of 10% whereas the least demand of skilled workforce is found in construction with less than 10%. Contrary to the demand in B Tech level, the available demand in DAE level marks the substantive difference in the economic sectors.

The demand of skilled workforce is found in manufacturing, construction, mining and service with 30%, 20%, 10% and less than 10% respectively which clearly indicates gradual decrease of demand and necessitates reduction of demand through proper supply of skilled workforce. The demand of skilled workforce is the highest in G-1 level in comparison with all other levels in the indicated sectors which is reflected in construction as well as services with over 60% skilled workforce followed by manufacturing (50%) and mining (Over 30%). On the other hand, G-2 level has over 20% skilled work force in mining followed by services (10%) while manufacturing and construction have negligible demand of skilled workforce. The G-3 level has no demand of skilled workforce in any sector which means excess of supply over demand.

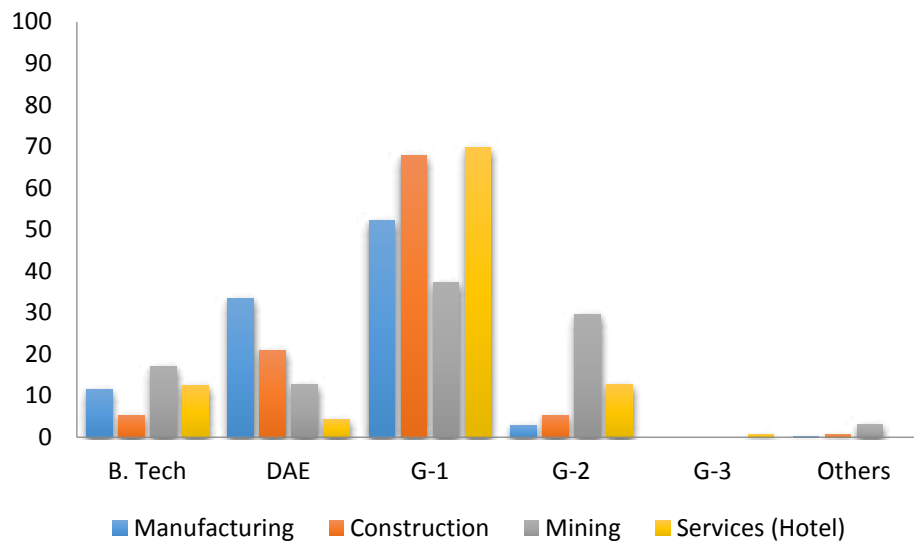


Figure 6: Sector and level wise Skills demand

## SECTOR WISE SKILLED WORKFORCE DEMAND IN KHYBER PAKHTUNKHWA

The graph gives assessment about demand of skilled workforce prevailing in the construction, manufacturing, mining and service sectors. The demand of skilled workforce varies from sector to sector due to the productive capacity of each sector. The available data indicates demand of skilled workforce in each sector on the basis of which evaluation of demand is carried out. The manufacturing needs 4,602 skilled workers to run its different processes while the demand in the construction is plummeted to only 6,232 skilled workers. Contrary to this highest and lowest comparison in terms of demand of skilled workforce, demand in mining and services stand at 38,926 and 19,204 skilled workers respectively. The surge in demand in three sectors other than construction is an indicator of adopting radical measures to ensure supply of skilled workforce to its burgeoning size on sustainable basis. Moreover, the market trends serve as guideline for planners and policy makers to devise plans and policies for bringing the performance of TVET institutions to the rising demand of skilled workforce.

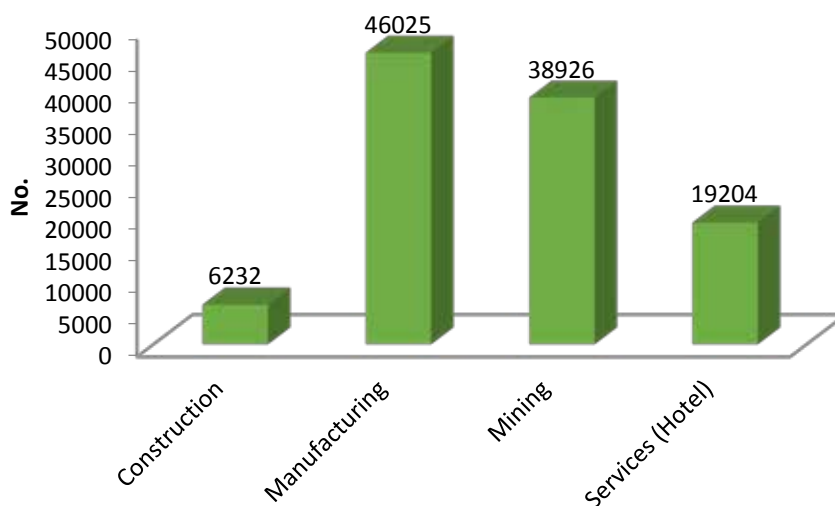


Figure 7: Sector wise Skills demand in KP

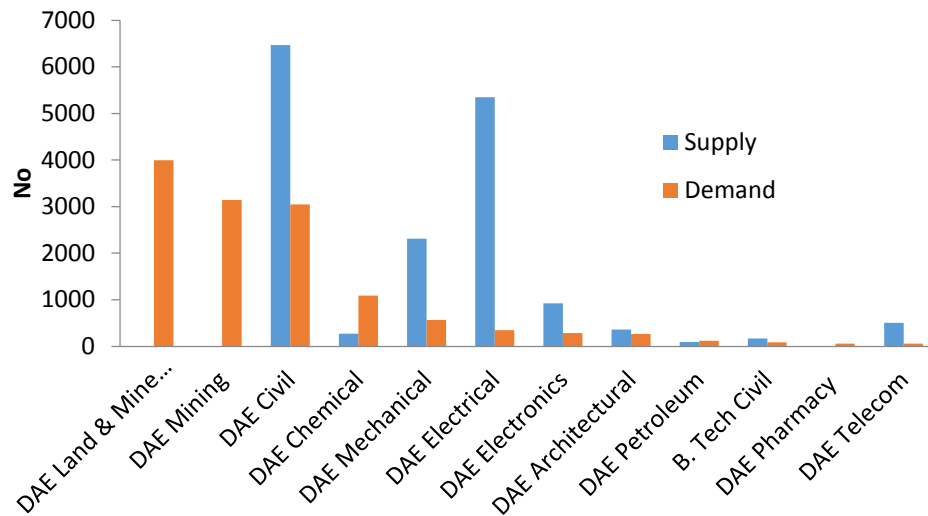
## SUPPLY vs DEMAND OF SKILLED WORKFORCE (TECHNICAL TRADES)

The technical trade means acquiring education from technical institution which may be termed as academic skilled workforce to meet the soaring skilled demand in the market. The technical institution issues degree at the end of the academic program to the enrolled students such as DAE landmine, chemical, civil, electricity and electronics etc. The comparison between supply and demand of skilled workforce in terms of various degrees/certificates issued by technical education required for technical trades has been displayed in the following graph. The data indicates that supply of skilled workforce based on DAE civil (6,500), electrical (5,000), mechanical (2,000), electronics (1,000) and telecom (less than 1,000) is more than

the available demand of 3,000 and less than 1,000 skilled persons in the market which means creation of awareness is required amongst the people for investment in these sectors aimed at adjustment of surplus skilled workforce for utilizing their skill in the development of economy.

Similarly, the supply of skilled workforce from DAE land & mine, mining and chemical is less than its available demand of 4000, 3000 and 1,000 skilled persons respectively in the market. Provincial government is suggested to launch motivation campaigns on alluring families for getting their children enrolled in these sectors for increasing supply to match with demand of skilled workforce. Furthermore, the demand and supply of skilled workforce based on DAE pharmacy, B.Tech civil, DAE petroleum and architectural certificates has been considered negligible which urges introduction of radical measures for prodding both the technical institutions and investors to bring forward for creating environment of supply against demand in a balanced manner.

### SUPPLY vs DEMAND OF SKILLED WORKFORCE (VOCATIONAL TRADE)



The vocational trade means trained and skilled workforce developed through training of varying periods from vocational institutions on various subjects and completion of training categorize it as a professional workforce. The supply and demand of skilled workforce in various professional sectors on vocational trade can be assessed from the data given in the graph. This provides guidelines to the planners and policy makers to bring changes for adjustment of emerging gaps due to which shortage of skilled work force is increasing. The analysis indicates that basic computer and tailoring & dress have the capacity of producing 5,000 skilled persons each against demand of only 2,000 and less than 1,000 skilled persons respectively. This situation means that people need to be motivated for investment in these professional sectors so that surplus skilled workforce may be adjusted, leading to employment opportunity as well as increasing production through use of skilled workforce. On the other hand, the availability of

skilled workforce in rural poultry, DIT, welding, AutoCAD, mason, leather work, fabric painting and machine embroidery ranges from 3,000 to 2,000 skilled persons against negligible demand which point out acute shortage of opportunities for skill use. The rundown of comparison throws lights on rising supply of skilled workforce against dwindling demand which is matter of concern for availability of less opportunity in the market.

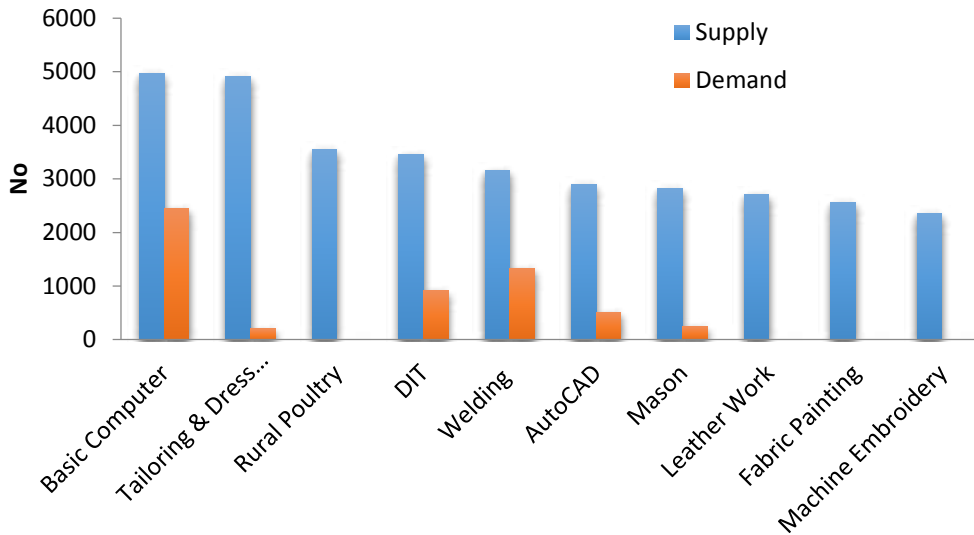


Figure 8: Supply vs demand (Vocational)

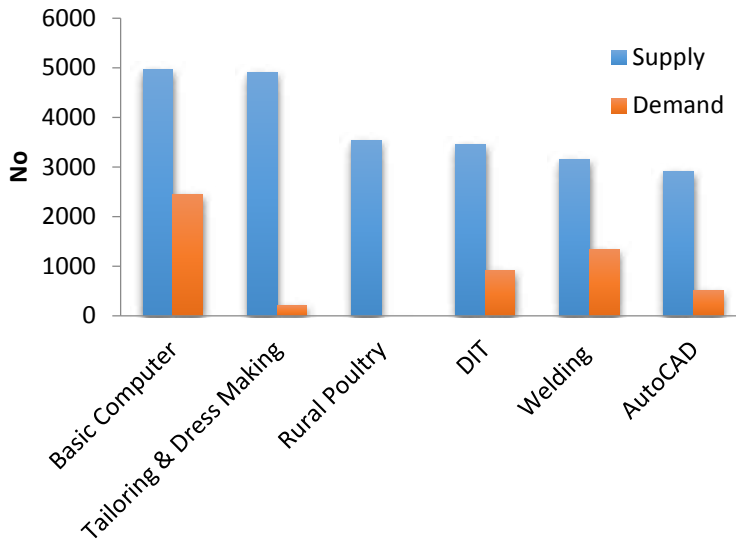


Figure 9: Supply vs demand (Vocational)

## **SUPPLY vs DEMAND OF SKILLED WORKFORCE (TECHNICAL TRADES)**

The data given in the table demonstrates comparison between supply and demand of skilled work force in technical education leading to creation of substantial gaps. The findings depicts that supply of skilled workforce is more than its demand in B tech civil, B tech electrical, B tech mechanical, DAE architectural, DAE auto, DAE auto & farm, DAE cit, DAE civil, DAE computer hardware, DAE electrical, DAE electronics, DAE food, DAE mechanical, DAE RAC, DAE telecom and DAE DDM. Likewise the demand of skilled workforce is more than its supply in DAE Chemical, DAE Mechanical, DAE Mining, DAE Mold, DAE Pharmacy, DAE Land & Mine Survey Tech and DAE Materiel.

The exceeding supply over demand has created demand gaps of skilled workforce after comparison between its demand and supply and have been marked in DAE Electrical with 5,005 as the highest demand gap followed by DAE Computer Hardware with 3,422, DAE Mechanical with 1,742, DAE CIT with 662, DAE Electronics with 645, DEA Telecom with 452, B Tech Electrical with 402 and DAE food with least demand gap of only 12. Similarly, the highest supply gap of skilled workforce has been detected in DAE Land & Mine Survey Tech with 3,994 after comparison between its demand and supply. It was followed by DAE Mining with 3,143 as supply gap DAE Chemical with 815 and least supply gap of skilled workforce existed in DAE Material with only 05.

The trends in trade indicates that majority students prefer to join DAE Electrical followed by DAE Computer Hardware, DAE Mechanical, DAE CIT, DAE Electronics and DAE Telecom as a result of which surplus skilled workforce is available in the market whereas less opportunities are available in DAE Land & Mine Survey Tech, DAE Mining, and DAE Chemical, DAE Mold, DAE Pharmacy and DAE Petroleum. The planning is required to be made in accordance with demand and supply gaps of skilled workforce for reducing such existed gaps aimed at adjustment of surplus skilled workforce in the indicated professions by creating opportunities in the market while provision of shortage of skilled workforce is needed to be made to bring it in line with the rising demand by involving technical institutions.

**Table 1: Supply vs Demand**

Trade	Supply	Demand	Gaps
B. Tech Civil	168	86	● 82
B. Tech Electrical	411	9	● 402
B. Tech Mechanical	80	0	● 80
DAE Architectural	364	265	● 99
DAE Auto	143	5	● 138
DAE Auto & Farm	47	12	● 35
DAE Chemical	275	1,090	● (815)
DAE CIT	696	34	● 662
DAE Civil	6,469	3,047	● 3,422
DAE Computer Hardware	384	12	● 372
DAE Electrical	5,350	345	● 5,005
DAE Electronics	928	283	● 645
DAE Food	30	18	● 12
DAE Mechanical	2,309	567	● 1,742
DAE Petroleum	91	123	● (32)
DAE RAC	109	0	● 109
DAE Telecom	509	57	● 452
DAE DDM	123	0	● 123
DAE Mining	0	3,143	● (3,143)
DAE Mold	0	48	● (48)
DAE Pharmacy	0	59	● (59)
DAE Land & Mine Survey Technology	0	3,994	● (3,994)
DAE Material	0	5	● (5)

# RECOMMENDATIONS

1. All the technical, vocational, educational and training institutions should be linked with the website of NAVTTC for the purpose of planning, research, education, training and employment opportunities for TVET graduates.
2. The linkages must be strengthened between government departments responsible for various policies affecting the skilled market and statistical agencies for effective institutional collaboration and cooperation.
3. The students and professional should be given rational access to the skill based information system for smooth production of skilled labour as well as its adjustment in target areas to fulfill the market demand.
4. All the stakeholders including policy makers, planners, training imparting institutions, employers, immigration bureau, and job seekers must be allowed to use the platform to reduce the gaps between skilled supply and demand gaps.
5. There is a need to increase the number of technical institutions as compared to vocational institutions for maintaining balance between education and technical sectors.
6. Priority should be given to the industries having shortage of skilled workforce in comparison with the industries having surplus skilled workforce for bringing multiple demands in line with the supply side.
7. The sector and level wise demand of skilled workforce must be prepared for reducing variation in the vocational and technical institutions.
8. A network of multiple organizations, including both users and producers of information should be established for reducing gaps between demand and supply of trained labour provision.
9. A research Centre must be established in the provincial TEVTA's for conducting research on the target areas in each industrial zone to link with the job seekers seeking employment after developing skill from the technical and vocational institutions.



# ANNEX 1

## 1.14: SUPPLY VS DEMAND OF SKILLED WORKFORCE (VOCATIONAL EDUCATION)

**Table 2: Supply VS Demand Vocational Education**

Trade	Supply	Demand	Gaps
Electrician	499	9348	(8,849)
Driver	744	5756	(5,012)
Mechanical Operator	0	5351	(5,351)
Auto Electrician	1259	3946	(2,687)
Cook	0	3885	(3,885)
Auto Mechanic	2185	3552	(1,367)
Civil Surveyor	274	3278	(3,004)
Surface Mining	0	3010	(3,010)
Plumber	109	2891	(2,782)
Receptionist	0	2620	(2,620)
Basic Computer	4966	2442	2,524
Helper	0	2249	(2,249)
Heavy Vehicle Operator	0	2152	(2,152)
Loader Operator	0	2124	(2,124)
Foreman	0	2122	(2,122)
House Keeper	0	2005	(2,005)
Short Firer	0	1953	(1,953)
General Electrician	0	1685	(1,685)
Mine Sirdar	0	1618	(1,618)
Mechanic	0	1437	(1,437)
Welding	3156	1328	1,828
Auto Diesel	1016	1176	(160)
Carpenter	1085	1117	(32)
Boiler Operator	0	1068	(1,068)
Excavator Operator	0	1028	(1,028)
Timber Man	0	936	(936)
DIT	3458	909	2,549

Trade	Supply	Demand	Gaps
Fitter	0	814	(814)
Professional Cook	0	803	(803)
Quality Control	0	768	(768)
Black Smith	0	756	(756)
Machine Operator	0	745	(745)
Lab Assistant	0	727	(727)
Dumper Operator	0	612	(612)
Turner	0	612	(612)
Cutter man	0	600	(600)
AutoCAD	2901	505	2,396
Chemist	0	504	(504)
Electrical	419	500	(81)
Room Keeper	0	432	(432)
Marble Cutting & Polishing	2234	420	1,814
Laith Machine Operator	0	396	(396)
Printing Operator	691	396	295
Wood Work	1624	345	1,279
Coal Cutter	0	324	(324)
Mine Mat	0	324	(324)
Shuttering Carpenter	0	296	(296)
Heavy Machinery Operator	0	288	(288)
Mold Man	0	288	(288)
Tile & Marble Fitter	0	284	(284)
Steal Fixer	0	277	(277)
Quantity Surveyor	0	269	(269)
Security Guard	0	253	(253)
Mason	2819	241	2,578
Resizer	0	240	(240)
Tour Operator	0	238	(238)
Beautician	2050	233	1,817
Land Surveyor	0	216	(216)
Plant Operator	0	216	(216)
Polish Man	0	216	(216)
Wall Graphing	851	208	643
Tailoring & Dress Making	4910	202	4,708
Electrical equipment repair	716	200	516
Machinist	423	174	249
Head Jobber	0	171	(171)
Quarry Master	0	168	(168)
Liquid Technician	0	144	(144)
Industrial Electrician	252	133	119

Trade	Supply	Demand	Gaps
Ventilation Assistant	0	130	(130)
X-Ray Attendant	0	114	(114)
Computerized Accounting	0	108	(108)
Crasher Operator	0	108	(108)
Mechanical Fitter	0	108	(108)
Mixing Technician	0	108	(108)
Soil Surveyor	0	108	(108)
Gas Plant Operator	0	104	(104)
Aluminum Mechanic	1123	98	1,025
RAC	1556	98	1,458
Medical Technician	0	94	(94)
Milder	0	93	(93)
Soil Testing Laboratory	0	93	(93)
Mait	0	89	(89)
Radio & TV	345	84	261
Safety Officer	0	84	(84)
Text. Weaving	0	84	(84)
Architecture/ Lady/ HSI	0	82	(82)
Embroidery	0	82	(82)
Crane Operator	0	72	(72)
Dai Maker	0	72	(72)
Dozer Operator	0	72	(72)
Engine Operator	0	72	(72)
Spoken & Business English	0	72	(72)
Under Ground Mining	0	72	(72)
Electrical Mechanic	0	70	(70)
House Painter	0	70	(70)
Fabricator	0	67	(67)
Health Technician	0	62	(62)
Mine Supervisor	0	57	(57)
Steel Fabricator	0	56	(56)
Chiller	0	48	(48)
CNC Machine Operator	0	48	(48)
Mine Surveyor	0	48	(48)
Motor Winding	961	48	913
Refinery Worker	0	48	(48)
Salter	0	48	(48)
Filling Operator	0	47	(47)
Text. Spinning	0	47	(47)
Killen Operator	0	46	(46)
Fire Man	0	45	(45)

Trade	Supply	Demand	Gaps
Tube well Operator	0	41	(41)
Hydraulic Operator	0	39	(39)
Supervisor	0	36	(36)
Batch Maker	0	36	(36)
Blaster Packing	0	36	(36)
Boring Man	0	36	(36)
Capsule Technician	0	36	(36)
Chipper Operator	0	36	(36)
Control Room Operator	0	36	(36)
Customer PRO	0	36	(36)
Dry Suspension	0	36	(36)
Environmental	0	36	(36)
Heavy Vehicle Electrician	0	36	(36)
Hostess	0	36	(36)
Lamination Operator	0	36	(36)
Laser Cutting	0	36	(36)
Lining Master	0	36	(36)
Machine Operator	0	36	(36)
Needle Assembly Operator	0	36	(36)
Plate Maker	0	36	(36)
Rubber Processing	0	36	(36)
Soil Supervisor	0	36	(36)
Tool Maker	0	36	(36)
HVCR Mechanic	0	25	(25)
Caster(Mod)	0	24	(24)
Charge man	0	24	(24)
Chief Paper Maker	0	24	(24)
Coating Operator	0	24	(24)
Culinary Arts	0	24	(24)
Dafar Machine Operator	0	24	(24)
Dy: & Asstt: Foreman	0	24	(24)
Opal Glass Machine	0	24	(24)
Pre Pack Foreman	0	24	(24)
Pump house	0	24	(24)
Sanding Mechanical Operator	0	24	(24)
Saus Chet	0	24	(24)
Scoff older	0	24	(24)
Electrical Quantity Surveyor	0	22	(22)
Female Receptionist	0	22	(22)
Painter	0	21	(21)
Field Assistant	0	20	(20)

Trade	Supply	Demand	Gaps
Forest Guard	0	20	(20)
Lab Assistant (Civil)	0	20	(20)
Lab Assistant (Electrical)	0	20	(20)
Machine Helper	0	20	(20)
Draftsman	0	19	(19)
Electro Medical Technician	0	18	(18)
Ammonia Operator	0	16	(16)
Oven Operator	0	16	(16)
Lab Assistant (Mechanical)	0	14	(14)
Lineman	0	14	(14)
Certified Mine Sirdar	0	13	(13)
Welding G-II	24	13	11
Barber	0	12	(12)
Cobbler	0	12	(12)
Denter	0	12	(12)
Junior Clinical Technical	0	12	(12)
Junior Technician	0	12	(12)
Lower Technician	0	12	(12)
Packaging Supervisor	0	12	(12)
Production Supervisor	0	12	(12)
Certified Short Firer	0	11	(11)
AC Mechanic	0	10	(10)
Conservation Assistant	0	10	(10)
Dispenser	0	10	(10)
Junior Instructor	0	10	(10)
Locomotive Driver	0	10	(10)
OT Attendant	0	10	(10)
Pain Master Worker	0	10	(10)
Panel Operator	0	10	(10)
Photostat Machine Operator	0	10	(10)
Fashion Designing	0	8	(8)
Milter	0	8	(8)
Fiber Glass Mod	0	6	(6)
Earthwork Foreman	0	5	(5)
Maintenance	0	5	(5)
Sanitary Workers	0	5	(5)
Senior Instructor	0	5	(5)
Dry cleaner	0	4	(4)
Aluminum Fatter	614	0	614
Auto Machine GII	25	0	25
Civil Draftsman	187	0	187

Trade	Supply	Demand	Gaps
CNG Kit Installation	549	0	549
CNG Plan/Compressor operator	434	0	434
Cooking & Baking	876	0	876
Cooking & Home Management	60	0	60
Cutting & Sewing	1195	0	1,195
Domestic Tailoring	1617	0	1,617
Draftsman Mechanical	25	0	25
Drawing & Designing	30	0	30
Electrician G-II	180	0	180
Fabric Painting	2564	0	2,564
Glass work	1345	0	1,345
Hand Embroidery	2062	0	2,062
Hand Knitting	1084	0	1,084
Lathering & Cutting	2334	0	2,334
Leather Work	2716	0	2,716
Machine Embroidery	2364	0	2,364
Machine Knitting	1177	0	1,177
Machinist G-II	35	0	35
Mobile phone Repairing	345	0	345
Motor cycle Mechanic	1613	0	1,613
Plumber GIII	35	0	35
Post Matric	966	0	966
Post Middle	725	0	725
RAC GIII	120	0	120
Rural Poultry	3544	0	3,544
Shorthand & Typing	500	0	500
Tractor Mechanic	976	0	976
Welding GIII	48	0	48

## TRADE WISE SKILLED WORKFORCE DEFICIENCY

Table 3: Deficient Trades Sector wise

Row Labels	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Mechanic	2		1628	4	1634
Manager	28	523	376	21	948
Electrician	4	806	12	72	894
Machine Operator	2	825	6	2	835
Helper		609	4	8	621

Row Labels	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Drill Operator	2		470		472
Short Firer	2		438		440
Compressor Operator		7	292		299
HVCR	4	273			277
Operator		252	4		256
Cook		7	2	223	232
Waiter		5		226	231
Production		210	2	6	218
Mechanical	72	145			217
Welder		205	6	1	212
Quality Assurance	14	189	6		209
Loader Operator		17	158	4	179
Excavator Operator	2		174		176
Electrical Engineer	44	127		4	175
Boiler		121		2	123
Fitter		121			121
Chemist		95			95
Accountant		81		11	92
Receptionist				88	88
Plumber		39	2	46	87
Turner		83			83
Cutter Operator		82			82
Civil Engineer	64	14	2		80
Mining Engineer		12	68		80
Printing expert		80			80
Black Smith		69	2		71
Laithe Machine Operator		69	2		71
Pharmacist		70			70
Laboratory Technician	4	59	2		65
Driver	6	13	44	1	64
Blast Man		9	46		55
House keeping				54	54
Shift In charge		51		2	53
Plant Operators		50	2		52
Chemical Engineer		49			49
Fabricator		49			49
Electronic Engineer		43	4		47
Timber Man			46		46
Surveyor	42		2		44

Row Labels	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Admin. Manager		40			40
Assistant Operator		35			35
Hydraulic Machine Operator		12	20	2	34
Works/Helpers		32			32
Weaving Master		26	2	2	30
Carpenter	2	27			29
Polish Technician		29			29
Assistant Foreman		28			28
Jobber		26			26
Mixture Operator		23		2	25
Store In charge		20	2	2	24
Assistant Supervisor		23			23
Dye Maker		22			22
Molding Operator		20			20
Food Technologist		14		4	18
Filling Operator		17			17
Workshop Mechanic	2	15			17
Chef				16	16
Crane Operator		16			16
Charge Man		14			14
Coal Cutter			14		14
Dozer Operator			14		14
Salter		14			14
Skilled Machine Operator		14			14
Crasher Man		9	4		13
Gas Plant Operator		13			13
Resizer		13			13
Liquid Technician		10		2	12
Packing Worker		12			12
Marble Cutter		9	2		11
Pumping Operator		11			11
Tab. Machine Operator		11			11
Capsule Technician		10			10
Chiller		10			10
Ring Operator		10			10
Surface Mines			10		10
Wood Carving		10			10
Assistant Engineer		9			9
Dry Filling Operator		9			9
Caster Mod		8			8
Chief Executive	6			2	8



Row Labels	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Drag wall			8		8
Masan		2	6		8
Room Keeper		3		5	8
Sattar		8			8
Analyst		7			7
Assistant Chemist		7			7
Assistant Store In charge		7			7
Assistant Turner		7			7
Cement Mill Operator		7			7
H.R Officer		7			7
Imple Machine Operator		7			7
Kilan Operator		7			7
Machine Operator		7			7
Plate Making		7			7
Sale Manager		7			7
Building Surveyor	4	2			6
Draftsman	6				6
Haulage Operator			6		6
Spinning Master		6			6
Auto Electrician		5			5
Gardner		3		2	5
Lamination		5			5
Pre_pack operator		5			5
Chief Engineer	4				4
Civil	4				4
Gyserman				4	4
Milder Worker		4			4
Painter		4			4
Plastic Processing Machine Operator		4			4
Restaurant Manager				4	4
Ammonia Operator		3			3
Assembly Technician		3			3
B.S Civil Engineers		3			3
Chef Paper Maker		3			3
Coating Operator		3			3
Computer Operator		2		1	3
Fidder Man		3			3
Finishing Master		3			3
Forming Section		3			3
Kushan Maker		3			3

Row Labels	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Laser Cutting		3			3
Oven Operator		3			3
Refinery Worker		3			3
Slinder Filling		3			3
Soldering Technician		3			3
Suny Man		3			3
Architect	2				2
Asphalt Foreman	2				2
Assistant Admin.		2			2
Auto Electrician			2		2
Auto Engineer		2			2
Auto Mechanic			2		2
Auto Shop			2		2
Auto cad	2				2
B. Tech Engineer	2				2
B.Sc Civil Engineer	2				2
B.Sc Electrical Engineer	2				2
B.Sc Mechanical Engineer	2				2
Batch Maker		2			2
Cad Operator	2				2
Cashier				2	2
CNC worker		2			2
Control Room Operator		2			2
Machine Operator		2			2
Fiber Glass Mod Maker		2			2
Generator Operator			2		2
Geologist			2		2
Ghezerman				2	2
Gum Maker		2			2
H.D.P.E Operator		2			2
Hakim Tib		2			2
Ink. Master		2			2
Lining Master		2			2
Mountainous Weaving		2			2
Opal Glass Mechanic		2			2
Packing Supervisor		2			2
Pain Master Worker		2			2
Plant In chage DAE Elect.	2				2
Plant Machine Operator		2			2
Protocol Officer				2	2
Residence Manager				2	2

Row Labels	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Showel Operator			2		2
Sirdar			2		2
Sort Firer			2		2
Steel Fixer			2		2
Tailor Master		2			2
Tool Maker		2			2
Tube well Operator			2		2
Kud Man		1			1
Grand Total	338	6294	3908	831	11371

## FUTURE SKILLED WORKFORCE DEMAND

Trade	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Electrician	120	7473	684	1527	9804
Mechanical Operator		5207	48	96	5351
Driller		264	4704		4968
DAE Land & Mine Survey Technology	48	1810	2136		3994
Auto Electrician		432	3432		3864
Cook	492	84		3181	3757
Auto Mechanic	16	336	3132		3484
Waiter	504			2598	3102
Mining Engineer	12	912	2135		3059
Surface Mining	36	1476	1224		2736
Plumber	396	757	216	1354	2723
Receptionist	360			2188	2548
Compressor Operator		348	2094		2442
Surveyor Civil	72	564	1656		2292
Helper		2165	72		2237
Heavy Vehicle Operator	36	604	1512		2152
Loader Operator		36	2016		2052
Fore Man		2002	24	24	2050
Civil Engineer	1043	348	624		2015
House Keeper	360			1645	2005
Short Firer		117	1836		1953
General Electrician		389	1296		1685
Mine Sirdar			1534		1534
Mechanic	84	901	408		1393
Shot Firer			1224		1224
Diesel Mechanic		336	840		1176

Trade	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Welder	36	1284	94	22	1148
Excavator Operator		236	792		1028
Manager	12	171		807	990
Boiler Operator		972			972
Chemical Engineer		868	36	24	928
Timber Man			900		900
Supervisor	60	789	12		861
Carpenter	239	360	252		851
Fitter		814			814
Hotel Management	324			488	812
Professional Cook	60			743	803
Chef	120			681	801
Black Smith		756			756
Computer Operator		437		300	737
Surveyor	72		576		648
Dumper Operator		168	444		612
Receptionist Manager	48			564	612
Turner		612			612
Cutter man		600			600
Operator		569			569
Food & Beverages Manager	68	227		245	540
Chemist		504			504
Restaurant Manager	36			392	428
Mechanical Engineer	144	259	12		415
Laith Machine Operator		396			396
Quality Control		348		24	372
Room Keeper	48			324	372
Laboratory Technician		216	144		360
Electrical Engineer	24	316			340
Coal Cutter			324		324
Mine Mat			324		324
Waiter level 2				305	305
Electronics Engineer		283			283
Quantity Surveyor	120		144		264
Mod Man		252			252
Waiters	72			180	252
AutoCAD Operator	143	36	72		251
Project Manager	132		108		240
General Manager	72	12		152	236
Land Surveyor	144		72		216

Trade	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Production Manager		192		12	204
Haulage Driver			180		180
Heavy Machinery Operator		180			180
Head Jobber		171			171
Tour Operator				166	166
Polish Man		156			156
Shatter		156			156
Beautician				151	151
Liquid Technician		144			144
Production Manager		144			144
Marble Mosaic		138			138
Marble Cutting Operator		34		96	130
Industrial Electrician		104		23	127
Chemical Technician		120			120
Production In charge		120			120
Quarry Master			120		120
Resizer		120			120
Ring Operator		120			120
Surface Mining		10	108		118
Computerized Accounting				108	108
Crasher Operator	36	72			108
Heavy Mechanic Operator		108			108
Marble Polishing Operator				108	108
Mechanical Fitter		108			108
Mechanical In charge		108			108
Plant Manager		108			108
Quality Control Supervisor		108			108
Site Engineer	36		72		108
Soil Surveyor	72		36		108
Boiler Engineer	36	60			96
Printing Operator		96			96
Shift in charge		96			96
Medical Technician			84		84
Mine Sardar			84		84
Mining Technology			84		84
Mixing Technician		84			84
Machinist		46		36	82
Mason		36	79		79
Cran Operator		72			72
Dye Maker		72			72

Trade	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Dozer Operator			72		72
Engine Operator			72		72
Gas Cutting		72			72
Loader Operator			72		72
Press Operator		72			72
Site Surveyor	36		36		72
Soil Testing Laboratory	36		36		72
Ventilation Assistant		72			72
Milder		68			68
Fabricator		67			67
Laboratory Assistant		27	36		63
Wood Carving		61			61
Management				60	60
Printing		60			60
Mine Supervisor			57		57
Technical Manager		57			57
Mate			53		53
Technical Workers		51			51
Cashier				48	48
Chiller		48			48
CNC Machine Operator		48			48
DAE Civil		48			48
Marketing	24	24			48
Motor Winder		48			48
Mold Technology		48			48
Printing Machine Operator		48			48
Quality Controller		48			48
Quarry Master			48		48
Reiszer		48			48
Safety		48			48
Salter		48			48
Workshop Foreman		48			48
Filling Operator		47			47
Lab. In charge		47			47
Workers/Helpers		47			47
Killen Operator		46			46
Fire Man	9	36			45
Lab. Technician		40			40
hydraulic Operator		39			39
Wood Craftsman		37			37
Batch Maker		36			36

Trade	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Blaster Packing		36			36
Boring Man		36			36
Customer PRO				36	36
Capsule Technician		36			36
Chipper Operator		36			36
Control Room Operator		36			36
Dry Suspension		36			36
Environmental		36			36
Geologist			36		36
Heavy Vehicle Electrician		36			36
Hostess	36				36
Laboratory Engineer		36			36
Laser Cutting		36			36
Lamination Operator		36			36
Lining Master		36			36
M.Sc Engineers	36				36
Mait			36		36
Marble Polishing Technician				36	36
Mold Man		36			36
Needle Assembly Operator		36			36
Pharmacist		36			36
Physical Lab. In charge		36			36
Plant & Asset: Plant Operator		36			36
Plant In-charge	36				36
Plant Operator		36			36
Plant Operator		36			36
Plastic Processing Machine Operator		36			36
Plasting Processing		36			36
Plate Maker		36			36
Plant Operator		36			36
Polish Work		36			36
Printing Machine Operator		36			36
Processing Machine Operator		36			36
Protection Manager		36			36
Protocol Officer				36	36
Quality Control Officer		36			36
Recipients				72	72
Resizer		36			36
Resizer man		36			36
Room Keeping				36	36
Foreman		36			36

Trade	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Rubber Processing		36			36
Sale Manager		36			36
Senior Operator		36			36
Senior Electrician		36			36
Shuttering Carpenter	36				36
Site Manager			36		36
Site Supervisor	36				36
Soil Supervisor	36				36
Spoken & Business English Course				36	36
Spoken Business English				36	36
Sub Engineer Civil	36				36
Supervisor		36			36
Surface			36		36
Surface Mining			36		36
Surface Mining		36			36
Surface Mining			36		36
Textile Weaving		36			36
Textile Weaving Technician		36			36
Timber			36		36
Tool Maker		36			36
Tour Travel Service Course				36	36
Tour Travel Service				36	36
Tractor Driver			36		36
Tube well Operator			36		36
Under Ground Mining		36			36
Underground Mining		36			36
Ventilation Assistant		36			36
W.S Foreman		36			36
Waiter level2				36	36
Waiters level 3	36				36
Waiver		36			36
Washing man		36			36
Watchman				36	36
Wood Craftsman		36			36
Works/Helpers		36			36
Worker Safety		36			36
Assistant Supervisor		35			35
Gas Plant Operator		32			32
Steel Fixer		30			30
Sub Engineer		25			25
Caster (Mod)		24			24



Trade	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Charge man		24			24
Chief Paper Maker		24			24
Coating Operator		24			24
Culinary Arts				24	24
Dafar Machine Operator		24			24
Deputy & Assistant Foreman		24			24
Forming Section		24			24
Mechanical Foreman		24			24
Mine Surveyor			24		24
Mining			24		24
Mixing Technician		24			24
Opal Glass Machine		24			24
Operator		24			24
Operators		24			24
Plumber (A.C)		24			24
Polisher		24			24
Pre Pack Foreman		24			24
Press Machine Operator		24			24
Printing Operator		24			24
Printing Machine		24			24
Printing Press Operator		24			24
Printing Technology		24			24
Production Supervisor		24			24
Project Manager	24				24
Project Engineer	24				24
Pump house		24			24
Quality Control Manager		24			24
Quality Inspector		24			24
Quality Surveyor			24		24
Refinery Expert		24			24
Refinery Worker		24			24
Road Surveyor			24		24
Roll Man		24			24
Sanding Mechanical Operator		24			24
Saus Chet				24	24
Scoff older			24		24
Senior and Asstt: Foreman		24			24
Senior Mechanic	24				24
Shift In-charge		24			24
Supervisor & Assistant Quality Control		24			24
Supervisor & Assistant Supervisor		24			24

Trade	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Supervisor Quality Control		24			24
Supervisors		12		12	24
Pharmacy Technology		23			23
Assistant		22			22
Female Receptionist	22				22
Finance Manager				22	22
Waving Technician		22			22
Weaving		22			22
Weaving Master		22			22
Wood Expert		22			22
Accountant		21			21
Soldering Technician		21			21
Machine Helper		20			20
Milder		17			17
Ammonia Operator		16			16
HUAC Operator		16			16
Oven Operator		16			16
Technical worker		16			16
Certified Mine Sirdar		13			13
Machine Welding		13			13
Mending		13			13
Computer Engineer		12			12
Lab. Quality Control		12			12
Lab. Worker		12			12
Lower Technician		12			12
Manager Beverage	12				12
Managerial		12			12
Manger				12	12
Mechanics		12			12
Operator & Assistant Operator		12			12
Packaging Supervisor		12			12
Printing Expert		12			12
Predication Manager		12			12
Production Supervisor		12			12
Quality Control		12			12
Surface Mining		12			12
Technical Foreman		12			12
Textile Spinning Technician		12			12
Certified Short Firer		11			11
Syringe Assemble Machine		11			11

Trade	Construction	Manufacturing	Mining	Services (Hotel)	Grand Total
Technical Operator		11			11
Text. Spinning		11			11
Pain Master Worker		10			10
HVCR Mechanic		9			9
Paint In charge		9			9
Syrup Filling Operator		9			9
Text. Weaving		9			9
Lab. Manager		8			8
Milder Worker		8			8
Marble Polishing Operator		8			8
Mechanical Sub Engineer		8			8
Milter		8			8
Operator & Assistant		8			8
Pasting		8			8
Technician Laboratory		8			8
Fiber Glass Mod		6			6
Industrial Electrician		6			6
Trained Waiter				6	6
Maintenance		5			5
Tailor Master		3			3
Textile		3			3
G. Total	6232	46025	38926	19204	110387

# ANNEX 2

## QUESTIONNAIRE

### Skills Workforce Demand Side Questionnaires

*This information supplied on this format will kept strictly confidential and will be used for research & Planning of National Skills Information System, NAVTTC, Government of Pakistan*

Name of organization: \_\_\_\_\_  
Dated: \_\_\_\_\_ for the Year: \_\_\_\_\_  
Organization Contact No: \_\_\_\_\_ Email: \_\_\_\_\_  
Address of the establishment \_\_\_\_\_  
Name of focal person: \_\_\_\_\_  
Designation: \_\_\_\_\_ Contact No: \_\_\_\_\_.

### 1. Existing Skilled Workers (Only Skilled workers)

S.No.	Trade, Name	No. of workers		Source (use codes)	
		Male %	Female%	Male	Female
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

Code: 1- TVET Graduate, 2- Work based learner, 3- Informal sector, 77- Others (Specify)

## 2. Skills Deficiencies

2.1: Do you face skilled workforce deficiencies? 1= Yes 2= No

S.No.	Trade name	Level (use codes)	Number
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

Codes: 1: Degree 2: B.Tech 3: DAE, 4= short course, 5=Certificate, 6= Diploma, 7= others (Specify)

## 3. Future Skills Requirement

S.No.	Trade, name	Level (use codes)	Number/Annum	
			Male	Female
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Codes: 1: Degree 2: B.Tech 3: DAE, 4= short course, 5=Certificate, 6= Diploma, 7= others (Specify)

**3.1: What is your level of satisfaction from the TVET graduate? 1= Satisfied, 2= Not Satisfied, 3=Don't Know**

**3.2: What is your Suggestion improvement:**

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