



# BRIDGING THE SKILLS GAP:

## CHALLENGES, OPPORTUNITIES AND WAY FORWARD FOR PAKISTAN'S TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING SECTOR

*"There is immediate and urgent need for training our people in the scientific and technical education in order to build up future economic life... But do not forget that we have to compete with the world, which is moving very fast in this direction. Also I must emphasise that greater attention should be paid to technical and vocational education."*

(Quaid-i-Azam Muhammad Ali Jinnah, November 27, 1947)



**Major General  
Raza Ali Khan, HI (M)  
Serving General Officer**



**Air Commodore  
Naveed Yussuf  
(Retired)**

### Abstract

With a population of 241.4 Million people, Pakistan ranks as the world's 5<sup>th</sup> most populous country, featuring a youth proportion of 60% between the ages of 15 and 35, making it the second-largest nation globally with a substantial youth population. Despite this demographic advantage, Pakistan's global economic contribution remains modest, constituting only 0.37% of the world GDP and placing it at the 159<sup>th</sup> position out of 191 countries in the Human Development Index (HDI). This article delves into the critical examination of Pakistan's Technical and Vocational Education and Training (TVET) system, identifying its shortcomings as a significant factor contributing to the country's economic underperformance. Education statistics in Pakistan reveal that 65% of youth faces barriers in continuing education beyond the primary to secondary level, with this figure escalating to 90% at the higher secondary level. Consequently, the nation is confronted with the second-highest number of Out of School Children (OOSC) globally, estimated at 23 Million between the ages of 5 to 15. The TVET sector, assessed on the Global Knowledge Index of UNDP, is ranked at 100 out of 154 countries, underscoring its need for improvement. Recognising the pivotal role of human resources in economic development, this article underscores the importance of TVET institutes as vital hubs for nurturing a skilled workforce. However, the TVET sector in Pakistan faces numerous challenges, leading to an inability to accommodate the substantial number of school leavers and resulting in high unemployment rates. The article explores the impediments hindering skill development and acknowledges the efforts of the Pakistan Armed Forces in contributing to skill development and a commendable step towards addressing these challenges.

### Keywords

Skills Development, Pakistan Economy, Pakistan Education, Manpower, Export, Human Resource, TVET, Professional Education.

## Introduction

Training in general and skills development in particular, not only play a vital role in individual, organisational and overall national economic growth but are integral part of Human Resource Development (HRD).<sup>1</sup> In Pakistan, a lot of policy level discussions are directed at Youth Employability for the fact that the country is at the critical juncture of the “youth bulge” which contributes to a favourable position of demographic dividend in the country.<sup>2</sup> This human resource capital, if harnessed as a ‘skilled work force’ is expected to contribute towards nation building through poverty alleviation. Conversely, if it remained untapped, this potential asset is feared to become a liability with understandable social impediments.

HRD therefore, is gaining increasing recognition as a pivotal catalyst for the socio-economic advancement of nations. Positioned as a cornerstone for a country’s economic prosperity, HRD represents a strategic framework dedicated to cultivating and maximising the potential inherent in a nation’s most invaluable asset—its human capital. While the precise current landscape remains elusive due to the unavailability of real-time data, discernible patterns emerge from existing information. The need for technical education and vocational skills in HR increases with every move towards industrialisation and modernisation of production facilities and workplaces.<sup>3</sup> A mere 27% of young people in Pakistan successfully graduate from secondary school, and only a small percentage of them do so with the acquisition of skills that can be employed, based on the Fact Sheet on the Pakistan TVET Reform Support Program. Unofficial employment attracts a sizable portion of the kids, who learn skills by the traditional on job training system (Ustad-Shagird). Despite an annual influx of 1.8 Million young individuals into the workforce, the available data until 2018 reveals a scarcity of opportunities, with a mere 433,237 positions offered in the formal Technical and Vocational Education and Training (TVET) sector through 3,740 institutes nationwide. Beyond the evident disparity between demand and supply, the quality and relevance of the imparted training do not align with the dynamic requisites of the contemporary job market.<sup>4</sup> This article attempts to evaluate the existing TVET system in Pakistan highlighting its significance, pitfalls in its implementation and way forward.

## Pakistan's Demographics

As per 7<sup>th</sup> Population and Housing Census which started on 1<sup>st</sup> March 2023, the total population of Pakistan is 241.49 Million with annual growth rate of 2.55 %.

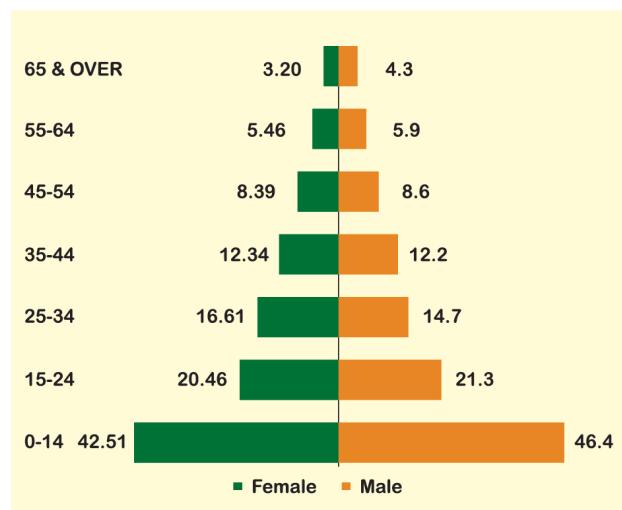
**Table-1: Growth Rate of Population of Pakistan**

Admit Unit	Admit Unit Population (Million)			Annual Growth Rate %		
	1998	2017	2023	1998	2017	2023
<b>Pakistan</b>	132.35	207.68	241.49	2.69	2.40	2.55
<b>KPK</b>	20.92	35.50	40.85	2.72	2.82	2.38
<b>Punjab</b>	73.62	109.98	127.68	2.64	2.13	2.53
<b>Sindh</b>	30.44	47.85	55.69	2.80	2.41	2.57
<b>Balochistan</b>	6.57	12.34	14.89	2.47	3.37	3.20
<b>Islamabad</b>	0.81	2.01	2.36	5.19	4.19	2.81

**Source: Pakistan Bureau of Statistics**

As per the data of last census available on the official website of Pakistan Bureau of Statistics, Pakistan population consists of more than 60% of the youth which are in the age group of 15 to 35 years.

**Figure-1: Pakistan Labour Force Survey (2021-22)**



**Source: Pakistan Bureau of Statistics**

With the large number of population, Pakistan has not been able to fully utilise the true potential of its biggest national asset which is its youth. As per the data of the World Bank, the world total GDP in the year 2022 was USD 100.56 Trillion. Out of this, 47.8% of the

world wealth is concentrated in the four top populous countries. USA and China alone have share a of 25.32% and 17.86% respectively in total world GDP. Pakistan's total annual GDP as per World Bank Data of 2022, is USD 376.53 Billion and is ranked 41 in the world and only contributes to 0.37% in the world GDP. This data clearly depicts that being the 5<sup>th</sup> largest country in terms of population, Pakistan has not been able to channelise its human resource towards the economic growth of country.

**Table-2: World GDP Statistics**

Country	Ranking as per Population	Total Population (Million)	GDP Statistics		
			Total GDP (Billion USD)	Contribution in world GDP %	Ranking
India	1	1,417.2	3,385.09	3.37	5
China	2	1,412.2	17,963.17	17.86	2
USA	3	333.3	25,462.7	25.32	1
Indonesia	4	275.5	1,319.1	1.31	16
Pakistan	5	241.4	376.53	0.37	41

• Total World population as on 2021 : USD 7.95 Bln  
 • Total World GDP as on 2022 : USD 100.56 Trn

**Source:** <http://data.worldbank.org/data-catalog/world-development-indicators>

### Context of Skill Development in Pakistan

According to Finch and Crunkilton (1999), TVET refers to the training and education which improves productivity across a range of economic sectors and helps individuals get ready for the workforce. To support the development and growth of self-employment and entrepreneurship, TVET diversifies people's alternatives and possibilities.<sup>5</sup> With the fast growing youth population, the TVET's sector capacity for delivering demand-driven training services for increasing workforce with technical and professional skills remains insufficient to meet the modern labour market challenges (Shah, 2004; Janjua and Irfan, 2008).<sup>6</sup>

The government of Pakistan initiated an extensive overhaul reform in the year 2011 with the support of the governments of Germany, the EU, Norway and the Netherlands to improve TVET quality, access, relevance and fairness. The first step of the reform was

completed in December 2016 and was built on National Skills Strategy. Significant milestones were realised throughout this timeframe, notably the National Vocational Qualifications Framework (NVQF), the National TVET Policy, as well as the implementation of Competency Based Training and Assessment (CBT&A). Thereafter, second phase of the TVET Sector Support Program was launched in January 2017 with a further five years agenda. The overall objective of the Programme was to improve governance and private sector for Pakistani youth and returning migrant's participation in the TVET sector to increase quality skill development that meets the demand of the labour market.<sup>7</sup> An all-inclusive national "Skills for All" strategy was formulated in 2018. This document clearly evaluated the challenges faced by Pakistan in TVET sector in the following words:-

*Pakistan is blessed with the youthful exuberance of more than 120 Million people below 18 years of age. The demographic dividend yielded by this youth bulge can be both a boon and bane for the country, depending on the manner in which we respond to it. Through positive engagement and enabling environment, youth can be converted into the most potent tool for changing the destiny of the country. Conversely, frustration and unexploited energies of idle youth could make them easy prey for the anti-state and anti-social elements. TVET sector in Pakistan needs substantial reforms to meet the challenges of global skilled labour market.<sup>8</sup>*

Also:

*TVET offers the shortest, swiftest and cheapest pathway to youth engagement through gainful livelihood opportunities. Therefore, for countries with huge youth bulge like ours, TVET offers the most beneficial instrument for harnessing the potential of their youth population & channelising it into national socio-economic development. Unfortunately, Pakistan's TVET sector is marked by both fragmentation and overlaps, emanating from the two primary factors: lack of clearly defined functional domains for various stakeholders and absence of TVET coordination mechanism to channelise scarce resources in the right direction.<sup>9</sup>*



In South Asian context, countries such as India, Sri Lanka, Bangladesh and Nepal have made significant strides in terms of revamping their respective TVET systems with enhanced focus on industry engagement and resultantly have moved from the old traditional supply-led system to a demand-oriented Competency Based Training (CBT) mode. The demand-driven system ensures systematic and institutional engagement of industry in the overall TVET system through varied platforms.<sup>10</sup>

### **Human Development Index (HDI)**

The Human Development Index (HDI) is a composite metric developed by the United Nations to gauge a country's overall level of human development. It encompasses three key dimensions: health, education, and standard of living.

- **Health (Life Expectancy at Birth)**

HDI considers life expectancy at birth as an indicator of a nation's health. A higher life expectancy reflects better overall health and healthcare services within a country.

- **Education (Mean and Expected Years of Schooling)**

The education component includes Mean Years of Schooling (average years of education for individuals aged 25 and older) and Expected Years of Schooling (the total years of education a child entering school can expect to receive).

- **Standard of Living (GNI per Capita)**

The standard of living is measured by Gross National Income (GNI) per capita, adjusted for purchasing power parity (PPP). This factor reflects the average income of a country's citizens.

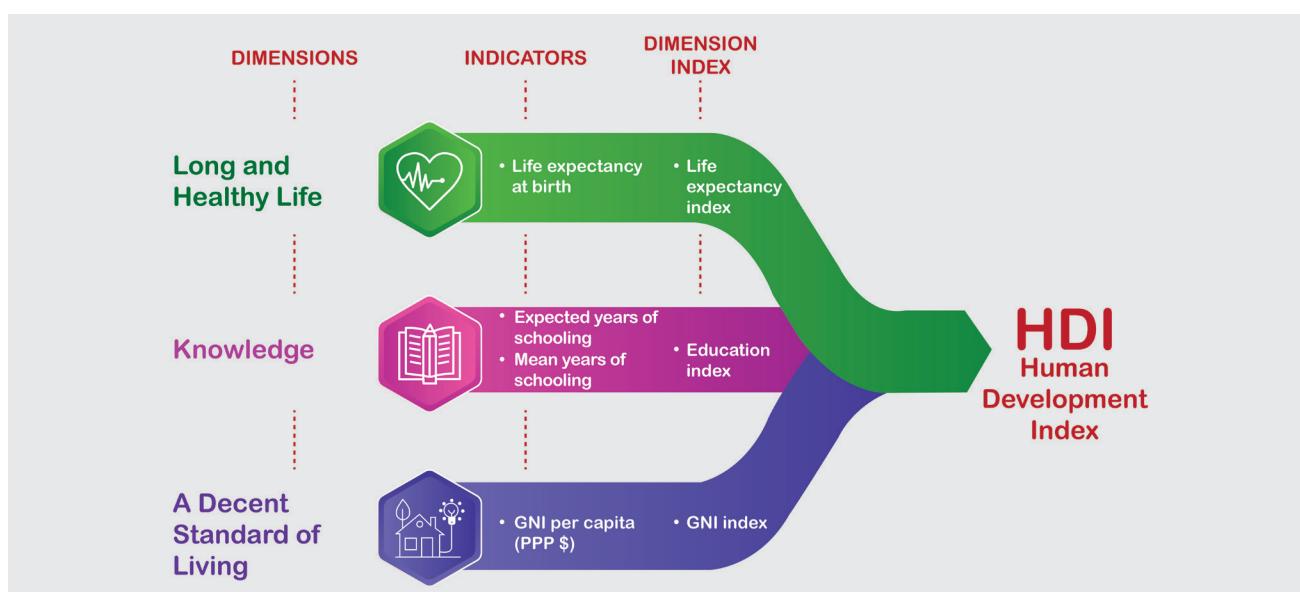
HDI provides a valuable snapshot of overall human development, it's an important indicator towards understanding of a country's socio-economic landscape and potential challenges. Addressing these limitations can contribute to more comprehensive and accurate assessments of a nation's economic development. The table-3 shows the comparison between HDIs of world

**Table-3: HDI Statistics**

Country	Ranking as per Population	Total Population (Million)	HDI Statistics	
			Score	Ranking
India	1	1,417.2	0.633	131
China	2	1,412.2	0.768	80
USA	3	333.3	0.921	21
Indonesia	4	275.5	0.705	113
Pakistan	5	241.4	0.544	159

**Source:**<https://worldpopulationreview.com/country-rankings/hdi-by-country>

**Figure-2: HDI Dimension and Indicators**



top populous countries. Data shows that Pakistan is at 159 out of 191 countries in HDI with a score of 0.544 depicting poor rating in all the three categories i.e. Health, Education and Standard of living.

## Education Statistics of Pakistan

Generally, there are two major streams in Pakistan's education system (Shah, 2004). One is general education system, which is comprised of primary (1<sup>st</sup> to 5<sup>th</sup> class), middle/elementary (6<sup>th</sup> to 8<sup>th</sup> class), secondary (9<sup>th</sup> and 10<sup>th</sup> class), higher secondary (11<sup>th</sup> and 12<sup>th</sup> class) and higher education. The second stream is technical and vocational education for the development of skilled workforce and middle level technicians, which is comprised of three years education after secondary level (class 10<sup>th</sup>).<sup>11</sup> In addition, Deeni Madaris also offers parallel system of education influencing a considerable segment of our society.

As per National Qualification Framework (NQF) Pakistan has eight levels of education. Levels 1 to 5 deal with primary, middle, secondary and higher secondary/inter level of education. Whereas, levels 6 to 8 deal with undergraduate, graduate and doctorate level of education. Area of focus of this article is technical and vocation skills which fall under levels 1 to 5.

Pakistan's education system is a blend of different education systems and standards. These include conventional education through government and private sector schools and alternate education system like Deeni Madaris and Skills development Institutes which are generally known as Technical and Vocational Education and Training (TVET) institutes. Education sector of Pakistan can be primarily divided into three main categories. These are:-

**Table-4: Pakistan Qualification Framework (PQF) - Formal & Higher Education Levels**

	Years	Levels	Award Type	Award Example
Higher Education Level	21 20 19	8	Doctoral	PhD
	18 17	7	Masters	M.Phil./MS/MBA, M.Sc. (Eng.), M.E, MA etc
	16 15	6	Bachelor	BS, B.E, B.A, BSc (Eng.), BSc (Agri), MA/MSc (16 year), LLB, B.Com (Hons), MBBA, DVM, PharmD, etc
Matriculation Intermediate Level	14 13	5	Associate Ordinary Bachelor	BA/BSc (Pass), ADE, Associate Degrees etc
	12 11	4	Higher Secondary School Certificate (HSSC)	F.A, F.Sc, ICS, I.Com, DBA, D.Com etc
	10 9	3	Secondary School Certificate (SSC)	Matric
Matriculation Level		2	Middle (3 Years)	
		1	Primary (1-5 Years) Pre-Primary (1-2 Years)	

Source: <https://www.hec.gov.pk/english/services/universities/pqf/Pages/default.aspx>



- **Conventional Education**

This includes conventional education system from primary, secondary, and tertiary levels of education. It is further divided into different sub-categories like government and private school systems implementing different curricula of federal and provincial level. Institutes imparting conventional education are regulated by the respective Boards of Intermediate and Secondary Education. American and British education systems like Oxford and Cambridge also run in parallel but are mostly accessible to higher and rich class of the society.

- **Skills Development Institute**

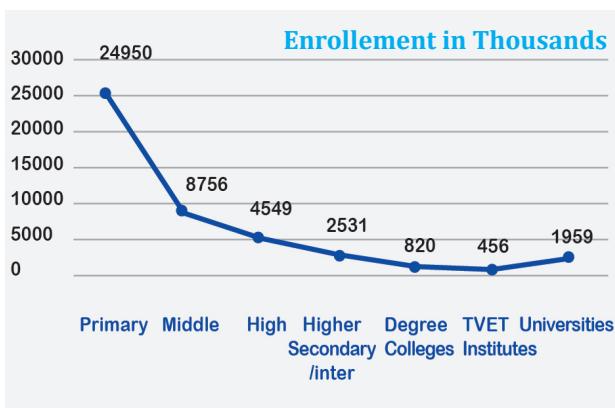
This sector primarily consists of TVET institutes and Polytechnic colleges where students learn different skills. It includes mostly certificates, diploma courses and B.Tech degree programs. These are regulated by different Boards of Technical education at national and provincial level. National Vocational and Technical Training Commission (NAVTTC) is the regulator at national level.

- **Deeni Madaris**

This education system plays a crucial role for imparting religious teachings, emphasising Quranic studies, Islamic jurisprudence, and theology. Madrassas play a significant role in nurturing moral values and shaping the spiritual identity of a large segment of the society. These madaris are regulated by different Wafaq ul Aloom representing different religious schools of thought.

The figure-3 depicts the state of education of all the

**Figure-3: Enrollement of Students at Different Educational Levels**



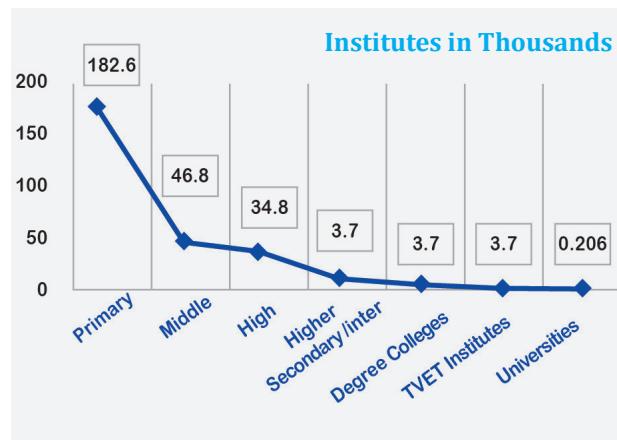
**Source: Prepared by author (from Pakistan Economic Survey 2022)**

categories in Pakistan. It also depicts that there is a sudden drop of enrolments from primary level to middle level in which 65% students leave the school and do not continue the education beyond primary level. This figure further drops to 90% and only 10% of students reach the level of Higher Secondary level. Due to this drop, Pakistan has the world's second highest figure of Out of School Children (OOSC) which sums up to 23 Million children of the age group 5 to 15 who do not attend the school. Human resource development through TVET sector is generally regarded as a quick and immediate employment source for youth for any country. However, in Pakistan, TVET sector cannot absorb more than 0.5 Million children. This obstacle greatly restricts Pakistan in providing a pathway for early school leaver to enter TVET stream. Due to this, many children remain unskilled and are forced to work on relatively low wages.

The figures-4 depicts the same trend for total number of institutes in the country. The data depicts that total institutes drop significantly (95%) from Primary School Institutes to Higher Secondary Institutes. There are only 3700 TVET institutes in the country which can only accommodate 0.5 Million students at one time.

The figures-3 and figure-4 depict that there is a huge gap in formal education and technical education in Pakistan. The limitation of TVET sector to absorb the large number of youth results in high unemployment and high OOSC figures.

**Figure-4: Education Institutions at Different Levels**



**Source: Prepared by author (from Pakistan Economic Survey 2022)**

## Global Knowledge Index (GKI) Ranking of Pakistan

Due to poor score in different indicators like economy, GDP, education and OOSC etc, Pakistan is ranked 123 out of 154 countries as per Global Knowledge Index ranking of United Nations Development Program (UNDP) with a score of 37.9 (world average is 48.4). The Pre-University and TVET ranking of Pakistan is 126 and 100 out of 154 countries depicting low performance in both conventional and TVET education.

**Table-5 : Global Knowledge Index Ranking of Pakistan**

	RANK	VALUE
 PRE-UNIVERSITY EDUCATION	126	42
 TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING	100	46.3
 HIGHER EDUCATION	86	42.8
 RESEARCH, DEVELOPMENT AND INNOVATION	118	23.1
 INFORMATION AND COMMUNICATIONS TECHNOLOGY	114	29.5
 ECONOMY	110	45.8
 ENABLING ENVIRONMENT	114	34.4

Source : UNDP GKI Ranking (2022), Pakistan

## Importance of Skilled Workforce in National Economy

As highlighted earlier, approximately 2.4 Million young people enter the job market annually, but there are only 0.5 Million places available in TVET sector of Pakistan. As per the data of Ministry of Overseas Employment and Human Resource Development (MoOE&HRD), there is employment opportunity for 0.8 Million workers in foreign countries whereas there is a requirement of 1.0 Million workers in domestic market every year. Pakistan needs to produce skilled human resource so that they can be absorbed in local and international market. Recently Pakistan has offered KSA to supply more than 1 Million skilled workforce annually to Kingdom in line with Saudi vision 2030.

Overseas skilled workforce plays a significant role in

bringing foreign remittances in Pakistan. As per the data published by the State Bank of Pakistan, USD 2.09 Billion was sent by overseas workers to Pakistan in the month of August 23 with maximum share from KSA at the tune of USD 490.1 Million followed by UAE USD 308 Million. Total annual foreign remittance in year 2023 is USD 27.02 Billion which is 13.6% less as compared to year 2022 (USD 31.27 Billion) representing low foreign reserves and lack of timely debt servicing. The biggest source of Pakistan foreign reserves comes from foreign remittance sent by expatriates which mostly consists of un-skilled, semi-skilled and skilled-work force.

The situation is likely to become worse in coming years, if not addressed today, as KSA has initiated Takamul Skills Verification System (SVS) to regulate its labour market and test the skills of the workforce to ensure that the worker acquires the necessary skills to perform the job and possesses internationally recognised skill certification which is mandatory for the skill visas for employment in KSA. It is pertinent to mention here that most of Pakistan's workforce in KSA is unskilled and without any certification. Pakistan TVET system should be expanded to provide necessary certification to the workforce for employment in KSA. In case workforce with required skills and certification is not produced, it will negate the visa at KSA and in return seriously affect the national economy and foreign remittance from KSA.

Like KSA, there are many other opportunities for Pakistan, where Pakistan can export workforce for decent employment for individual and economic uplift of the country through foreign remittances. There is a large number of workforce required in Japan and South Korea due to their aging population. Japan has 60% of population which is more than 60 years of age. The demographic shift in Japan's age profile has triggered concerns about the Japanese economic future. There is a huge potential for Pakistan workforce in Japan and South Korea specially in health care, agriculture, and construction sectors.

## Challenges

Some of the challenges faced by TVET sector are:-

### • Perception of TVET in Society

The traditional perception of blue-collar and



white-collar jobs has great ingress in our society. Unlike many other developed countries like Finland, Germany etc where technical and vocational training is considered as a preferred choice for students in Pakistan technical and vocational education is considered as the last choice and for low merit students. There are also concerns about lack of articulation between the vocational/ technical and general education tracks, which relegates the former to a position of lower socio-economic preference.<sup>12</sup>

- **No Horizontal and Vertical Progression**

Pakistan's Education system does not allow students to transfer from technical skills stream to conventional stream especially at certificate level. A similar trend exists in higher secondary level. Although government has abolished 2% quota of Diploma of Associate Engineering (DAE) graduates in engineering universities but due to huge gap in curriculum of DAE and Secondary level education, a very limited number of DAE graduates make up to the degree level. Different universities have started technology programs at bachelor's level, but these are not approved by Pakistan Engineering Council (PEC). The National Technology Council (NTC) accredits these programs, but Bachelor of Technology (B.Tech) graduates are not considered for employment in government posts above grade 16.

- **Informal Training**

Most skills training and utilisation in Pakistan occurs under informal arrangements (in informal as well as formal enterprises). However, in contrast to its size and importance, there is an almost complete neglect of this mode of skill acquisition in policymaking.<sup>13</sup>

- **Non-Implementation of Law on Apprenticeship**

Apprenticeship ordinance was promulgated in Pakistan in 1962 which binds industry to offer internship opportunities for skilled students to gain on the job training in a real work scenario. Non-implementation of this law restricts the skilled worker to gain industry experience and polish their skills. Moreover, industry owner and employers recruit the unskilled and non-certified

worker and offers them to work on low wages than the certified skilled workers.

- **Limited Funds**

Pakistan spends less than 2% of its budget in education sector. The spending in skills development institutes is not available in any of the central government database/ repository, however, keeping in view the statistical figures of TVET in overall education regime of the country it is estimated that the overall spending in TVET is not even 5% of the education budget of the country. Due to this, TVET institutes are forced to use outdated curriculum, obsolete lab equipment and hire low competence instructors and are unable to ensure quality of training.

- **Lack of International Benchmarks**

International exposure of TVET policy makers is very limited due to which there is very limited collaboration with international Qualification Awarding Bodies (QABs). This restricts Pakistani skilled work force to enter in international market.

- **Lack of Industrial Linkages**

There is no coordination between TVET institutes and industry to produce a demand driven workforce. The institutes are producing professional workforce which are not equipped with required industry skills resulting in unemployment and lack of trust in the system.

- **Less Focus on Industry 4.0 Skills**

World is on the brink of a 4<sup>th</sup> industrial revolution. In this era the world would totally transform into a new dimension never witnessed earlier. New skills of this era like Internet of Things (IoT), Cloud Computing, Robotics, Blockchain, Big Data Analysis, Artificial Intelligence (AI) etc would totally transform the way of living and many conventional skills would be abolished. Pakistan TVET sector is not equipped to cope up with skills of tomorrow.

- **Role of National Vocational & Technical Education Commission (NAVTEC)**

It has been generally observed that since its inception, NAVTEC has not been able to restructure relative incoherent formal skills

system in Pakistan. Seemingly, NAVTEC has itself delved into the role of training delivery, rather than maintaining focus on the much needed functions of improving access, equity, efficiency and market responsiveness of the skills system.

### Pakistan TVET Sector: SWOT Analysis

There is a need to understand TVET Sector's strengths, weaknesses, opportunities, and threats (SWOT). By doing so, it will provide a clear picture of existing and deficient elements in the TVET system.

of resilience and dedication. Beyond its military functions, the Pakistan Army is home of professional soldiers who possess multiple skills related to military and conventional skills. Pakistan Army carried out a study to totally transform its training regime so as to align with the national regulatory framework. The basic concept of this transformation was to uplift the training of soldiers to make them more effective during the service through meaningful practical oriented training and give them national certification in line with National Qualification Framework (NQF).

**Figure-4: SWOT Analysis of TVET Sector**

STRENGTHS	WEAKNESS
<ul style="list-style-type: none"> <li>► More than 60 % of the country's youth is the major strength of Pakistan TVET sector.</li> <li>► Well-articulated policies on skills development.</li> <li>► Well established TVET regulatory bodies like NAVTTC, Provincial TVETAs, Board of Technical Education (BTE) and Trade Testing Boards (TTBs)</li> <li>► Well formulated TVET framework like National Skills Strategy, National Vocational Qualification Framework (NVQF) etc.</li> <li>► CPEC job creation prospects are also a strength for TVET sector.</li> <li>► Large number of overseas employment opportunities for Pakistani skilled workforce.</li> </ul>	<ul style="list-style-type: none"> <li>► Political situation and non-consistent government policies for foreign stake holders</li> <li>► Lack of clarity between Federal and Provincial governments regarding policy making, regulation in TVET specially after 18<sup>th</sup> amendment</li> <li>► Lack of coherence / coordination in TVET regulatory bodies like NAVTTC, Provincial TVETAs, Board of Technical Education (BTE) and Trade Testing Boards (TTBs)</li> <li>► Less Focus on TVET than conventional education White collar vs blue collar perception</li> <li>► Less industrial linkages</li> <li>► Less spending on TVET</li> <li>► Outdated curriculum and obsolete lab equipment</li> <li>► Low international collaborations owing to lack of certifications</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>► Rising demand for the skilled workforce in the industry both inland and abroad</li> <li>► Young energetic manpower</li> <li>► Inclination towards TVET in the Armed Forces of Pakistan. Better training/ assessment centres within the Armed Forces which can be replicated</li> </ul>	<ul style="list-style-type: none"> <li>► Economic Instability and Lack of Job Security</li> <li>► Political and Social Unrest</li> <li>► Challenging international labour market mostly dominated by tough competitors from other countries like India, Bangladesh, Sri Lanka, Indonesia, Malaysia and Nepal etc</li> <li>► Limited access to quality education</li> <li>► Insufficient Vocational Training Institutes to absorb out of school children</li> <li>► Societal perception towards gender disparities as well as skills development</li> <li>► Inadequate Infrastructure for e-Learning poses another threat for youth to learn IT skills through online mode</li> <li>► Limited internet access, especially in rural areas, hampers the ability of youth to leverage online educational resources</li> <li>► Entrepreneurship is essential for economic growth, young entrepreneurs face threats such as limited access to finance, bureaucratic hurdles and a lack of supportive infrastructure</li> </ul>

**Source: Compiled by Authors**

### Skills Development in the Armed Forces

Armed Forces of Pakistan pay special attention towards skills development. Pakistan Army, a professional force with a rich history and a pivotal role in the nation's defence, stands as a symbol

### Pakistan Army

The concept of Army TVET Regime (ATR) has been launched in the Army to be executed in phases. National University of Technology (NUTECH) is the first Technology University of Pakistan envisioned to



harness all the eight levels of education as per NQF. Apart from higher education in the field of Engineering and Technology, NUTECH also covers certificate and diploma programs in the field of technical and vocational education. To implement this concept, NUTECH Lifelong Skills Program (NLSP) was launched under the Skills Department. The basic purpose of ATR is to enhance post retirement employability potential through certifications in the acquired skills. The certification is provided in two forms, through formal learning (skills learnt by soldiers through existing training institutions), and through Recognition of Prior Learning (RPL) (certificate of already learnt technical qualifications/ skills of soldiers retiring in next 6 to 8 years).

### **Recognition of Prior Learning (RPL)**

NAVTEC has disseminated a policy for RPL in National Vocational Qualifications Framework (NVQF) Manual 2 Chapter 5 (2017). NAVTEC has also issued a list of 44 trades for certification through Competency Based Training and Assessment (CBT&A) for level 2 and 3 only. To benefit from RPL program and to ensure that maximum retiring manpower get at least one TVET Certificate before retirement, the RPL program has been suitably incorporated in ATR for certification of soldiers alongside certification of formal training. Candidates entering through RPL system are assessed for their skills against the National Competency Standards with a provision to qualify for either full qualification if they are declared "Competent" or "Record of Achievement" if they are declared competent in certain numbers of individual competencies. Record of achievement will only be issued in case of CBT&A assessment. RPL will be accessible to anyone who gained relevant competencies through the following forms to acquire NVQF qualifications:-

- Workplace based training
- Apprenticeship training
- Life experience
- Self-directed study
- Non-recognised study
- Formal uncertified learning
- Informal or undocumented study on job training (Ustad-Shagird System)
- In-service training
- Distance education or open learning

- Community-based education
  - Overseas education, training or experience
- Let us understand the efficacy of RPL through an example:-

*"A worker with a good experience as a car mechanic (learnt through on job training (Ustad-Shagird System) but having no formal training from an institution desires to find out whether he had the required skills for the National Vocational Certificate in Mechanical Technology (mechanic) Level-2. He contacts a nearby assessment centre, gets a RPL information pack, completes the application for RPL assessment form, provides a resume of his skills and trade experience, including references relating to his work and range of skills. The RPL coordinator from the Assessment Center facilitates him in creating a competency profile, and decides that no gap training is required. After passing preliminary and final integrated assessment, he is awarded the national qualification certificate (level-2)."*

### **Pakistan Air Force (PAF)**

PAF is a home to air warriors which are supported by a large number of supporting Engineers, technicians, air defenders, and other branches. Being the technology depended Force, PAF consists of large number of technicians. PAF School of Aeronautics and School of Electronics are established at PAF Base where PAF Apprentices acquire Diploma level training. PAF Apprentices acquire three years Diploma with certification from Sindh Board of Technical Education during their training period. This diploma is mostly oriented towards aerospace industry so that technicians after retirement can feed the aviation industry. Moreover, instructors employed for these training institutes get a similar training and certification is done through Civil Aviation Authority (CAA) B1/B2 standards of European Aviation Standard Agency (EASA). PAF focus towards skills enhancement is not new as it started transforming its training regime in year 2005 when Skills Enhancement Program (SEP) was launched initially for technicians. SEP is primarily a CBT&A system with all the pre-requisite of on job training. This program was subsequently implemented in other trades.

## Pakistan Navy (PN)

Pakistan Navy has also focused on the skills development of its human resource. PNS Karsaz is the naval station and the largest technical training facility located in Karachi, that provides technical education to Under Training (UT) Sailors in different trades of Navy. Some portion of the training for Naval Aviation Trade Sailors is conducted at PAF Base. UT Sailors acquire three years DAE diploma from Sindh Board of Technical Education (SBTE) upon passing out from PNS Karsaz. Pakistan Navy's other non-technical trade Sailors acquire requisite professional training in different training institutes but their certification so far is not recognised from any Qualification Awarding Body (QAB). PN has a large number of civilian technicians and tradesmen. Their training is conducted in PN Polytechnic Institute at Karachi. PN civilian technicians acquire professional training in five different DAE programs which includes Electronics, Electrical, Mechanical, Ship Building and Mechatronics technologies in PN Polytechnic Institute at Karachi. PN Polytechnic Institute Karachi is affiliated with SBTE for certification/ diploma.



## Way Forward

After deliberating the TVET regime of the country, Pakistan's status in HRD and its low contribution to economic growth as well as understanding the role played by the Armed Forces of Pakistan in TVET sector, a few measurers are proffered for further improvements:-

- There is an urgent requirement for establishing a task force under Ministry of Federal Education and Professional Training involving all stakeholders like Ministry of Foreign Affairs, Ministry of Industries, TVET experts from Federal/ Provinces and overseas employment promotor for the upgradation of TVET sector in Pakistan. The proposed scope for the task force is as under:-
  - Formulation of a policy document furnishing a complete road map for atleast five years for revamping the TVET sector and human resource development with a mandate to bring Pakistan in top 50 countries in terms of human resource development.
  - There are several government ministries and departments with separate programmes (for example the Ministry of Education, Ministry of Labour, Manpower and Overseas Pakistanis, Ministry of Science and Technology, Ministry of Industries and Production, and the Ministry of Food, Agriculture and Livestock at the federal level; and the Education, Labour, and Social Welfare Departments at the provincial level).<sup>14</sup> This task force to devise a mechanism to bring synergy in all these departments.
  - Conduct survey for international certification, join syllabus development, foreign country profiling so that human resource exactly matches the required export to the host country.
  - Develop road map for giving incentives to private sector for enhancing the footprint of TVET in country.
- Federal and Provincial Governments to allocate appropriate funds for TVET sector so that OOSC and early school leavers can be accommodated in TVET sector. Presently 2.4% of the federal education budget, which is 1.7% of the total annual budget, is allocated for the TVET which is lowest in the region. With this meager amount, it is not possible to uplift the TVET sector of Pakistan.
- In order to link informal trainees with prospects for formal employment, RPL needs to be adopted in

an all-inclusive manner. Moreover, there is a need for special courses for individuals with informally acquired skills utilising the infrastructure of existing TVET providers, especially for training of master-craftsmen in identified areas.

- There is a need to establish a TVET Research Centre at the national level to understand and analyse the demands of industry. The TVET needs to be demand driven instead of supply driven.
- There is challenge of a staggering mismatch between capacity and potential which needs to be addressed at priority both at federal as well as provincial level.
- Central database for TVET programs, enrolment, and certifications etc needs to be developed for facilitating policy decision.
- There is a need to conduct skill mapping for different countries through Pakistan embassies to exactly know the specific skill set required in foreign country. Without proper skills mapping it will not be possible to produce Human Resource for export. Ministry of Foreign Affairs (MoFA), Pakistan Overseas Employment Promoters Association (POEPA), The Overseas Employment Corporation (OEC) need to be taken on-board.

## Conclusion

Economic development of any country heavily depends upon the availability of skilled workforce. Unfortunately, Pakistan being the 5<sup>th</sup> populous country

in the world has never been able to fully extract the desired dividends from its more than 60% of the youth population. International development indicators like the World bank repository, shows that all those countries who spend heavily on the skills development of their citizens have high GDP and ranked high in HDI. Unfortunately, Pakistan's both indicators of economic development i.e. GDP and HDI are far below than what it should have been.

This piece focused on the importance of skills education and concluded that non availability of a skilled workforce is one of the contributory factors of economic decline. Pakistan must uplift its TVET regime to accrue true benefits of its youth which is its biggest asset. There are several challenges being faced by Pakistan TVET sector due to which we are unable to produce the skilled workforce which can cope up with the national and international employment requirements.

Moreover, due to less government spending on skills development, the quality of training being imparted at TVET institutes is not capable enough to produce skilled work force which can cope up with the technologies of fourth industrial revolution like Internet of Things, Robotics, Cloud Computing, and many other technologies which will overcome the conventional technologies and leave large number of unskilled workers if they are not upskilled. There is a need to maintain consistency in the policies. There is also a need for international linkages in the TVET sector so that our skilled graduates possess the same skills which are required in the national and international industry.



## NOTES

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