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Education-Industry Gap in Khyber Pakhtunkhwa: Integrating Education with Local Economic Development

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Abstract

Education is the key indicator in a number of measures of economic development including but not limited to; Employment, Human Development Index (HDI), Multi-Dimensional Poverty Index (MPI) and living standards. The economy of Khyber Pakhtunkhwa is primarily agrarian, while the service sector dominates GDP, contributing approximately 58%. Khyber Pakhtunkhwa literacy rate has been increased from 53% in 2019-20 to 55.1% in 2020-21. This research examine that whether the existing curriculum and education standards are fulfilling the necessary and sufficient conditions for meeting the labor market demand for skilled/educated workers? The supply of skilled work force to the labor market is enough for the production of goods and services planned by relevant industry/sector or not? The province faces challenges like non-alignment between curriculum and market demand, resulting in a skill gap and unemployment which hindering local economic development. Further complicating the situation is the scarcity of resources within academic institutions. There is no research collaboration between academia and industry. KP is bridging the gap between education-industry as the evidences are that universities are actively engaged in establishing meaningful collaborations with various industries, to ensure curriculum relevance and alignment with evolving industry requirements, facilitating collaboration between academia and industry experts, launches industry aligned Bachelor of Science in Computer Science (BSCS), with ongoing workshops and trainings for faculty and students. Khyber Pakhtunkhwa Digital skills feeds the digital workforce into the digital governance and economy pillars. Government has taken initiative in the form of the

Business Process Outsourcing (BPO) industry and have created employment opportunities for the youth. Khyber Pakhtunkhwa has rolled out Digital Skills training at the elementary & secondary level. For integrating education with local economic development primary requirement is academia-industry trust, proper mechanism for equitable asset distribution among the Universities, rational assessment of the demands and supply gap, investment in education and training programs to develop a skilled workforce that meets the specific needs of the services sector is required.

Key Words: Academia-Industry, Curriculum, Digital skills.

1. Introduction

Education is the key indicator in a number of measures of economic development including but not limited to; Employment, Human Development Index (HDI), Multi-Dimensional Poverty Index (MPI) and living standards. Education is the source of literacy, creativity, innovation, productivity, and social mobility (due to shifts in living standards). A well-functioning education system directly contributes to building a knowledgeable and skilled workforce, necessary for economic growth, technological advancements, and global competitiveness (World Bank, 2020).

The Khyber Pakhtunkhwa province is having an economy which is predominantly agro-based and the services sector contributes 58% to the Gross Domestic Product of the province (KP, BOS 2022-23). This makes Agriculture and Services the major contributors to the production of goods and services.

Education is the major pillar of social service delivery and is provided by provincial government of KP at large while private educational institutions are the contributing partners as well. This subsector requires skilled work force on one side while producing literate output on the other side consumed in higher educational institutions or hired by the production establishments as per labor market demand.

In order to view the literacy rate of Khyber Pakhtunkhwa then those aged 10 and above in the province are with an increase from 53 percent in 2019–20 to 55.1% in 2020–21, the rate is higher in urban areas than rural. Table 1 shoes detail percentage of male and female literacy rate increase.

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Table 1 : Literacy Rate (10 Years and Above)-Khyber Pakhtunkhwa (Per cent)

	2018-19			2019-20			2020-21		
Province/Area	Male	Female	Total	Male	Female	Total	Male	Female	Total
Khyber Pakhtunkhwa	75	36	55	71	35	53	72.8	37.4	55.1
Rural	74	33	52	69	31	50	70.1	33.5	51.7
Urban	82	51	66	80	53	67	85.8	57.8	72.3

Source: Pakistan Economic Survey 2022-23

While taking Comparative analyses of Elementary and Secondary education, the statistics of financial year 2022-23 with the financial year 2021-22 Table 2 shows increased enrollment, number of institutions and teachers.

Table 2: Number of Mainstream of Elementary & Secondary Govt. Institutes, Enrolment and Teachers by Level

Level of Education	Enrolment (Number)				Institutes (Number)				Teachers (Number)			
	2020-21	2021-22	2022-23(P)	GR	2020-21	2021-22	2022-23(P)	GR	2020-21	2021-22	2022-23(P)	GR
All Primary*	3,544,349	3,456,988	3,961,711	14.6	26,625	26,534	28,107	5.9	89,602	87,573	111,283	27.1
Middle	1,058,659	1,077,821	1,100,422	2.1	3,129	3,379	3,467	2.6	19,824	20,776	21,706	4.5
High	473,873	485,481	495,656	2.1	2,641	2,692	2,702	0.4	39,307	40,555	40,158	-1.0
Total	5,076,881	5,020,290	5,557,789	10.7	32,395	32,605	34,276	5.1	148,733	148,904	173,147	16.3

Source: Development Statistics 2023, Bureau of Statistics, Khyber Pakhtunkhwa

Table 3 given below shows the higher education statistics from 2020-21 to 2022-23 with comparative increase of enrollmemt, institutions and teachers.

Table 3 : Number of Mainstream of Govt. Higher Education, Universities, Institutes: Enrolment and Teachers by Level

Level of Education	Enrolment (Number)				Institutes (Number)				Teachers (Number)			
	2020-21	2021-22	2022-23(P)	GR	2020-21	2021-22	2022-23(P)	GR	2020-21	2021-22	2022-23(P)	GR
Higher Sec	127,587	121,943	130,559	7.1	763	802	838	4.5	23,177	24,424	25,425	4.1
Colleges	245,390	244,517	250,069	2.3	270	290	320	10.3	10,385	10,519	9,430	-10.4
Colleges of Management Sciences	22,035	23,651	23,036	-2.6	41	41	43	4.9	1,060	1,060	1,868	76.2
Universities	105,121	105,121	127,142	20.9	23	23	28	21.7	4,660	4,660	4,367	-6.3
Total	500,133	495,232	530,806	7.2	1,097	1,156	1,229	6.3	39,282	40,663	41,090	1.1

Source: Development Statistics 2023, Bureau of Statistics, Khyber Pakhtunkhwa

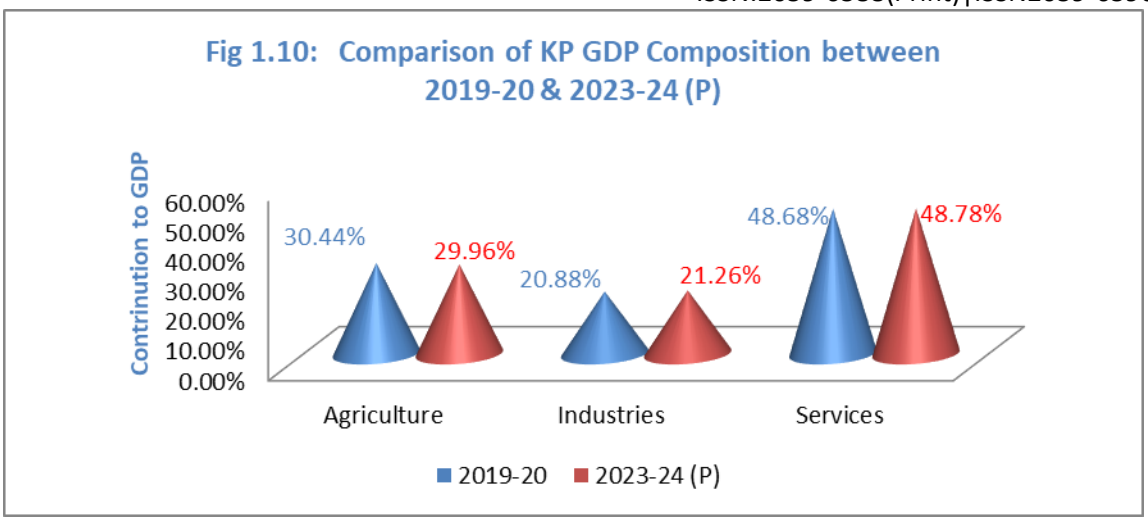
Table 4 given below shows the technology & polytechnic statistics of education from 2020-21 to 2022-23. Comparative analyses and increase of enrollment, institutions and teachers.

Table 4: Number of Mainstream of Technical vocational & Technology Poly Technic Govt. Institutes: Enrolment and Teachers by Level

Level of Education	Enrolment (Number)				Institutes (Number)				Teachers (Number)			
	2020-21	2021-22	2022-23(P)	GR	2020-21	2021-22	2022-23(P)	GR	2020-21	2021-22	2022-23(P)	GR
Technical & Vocational Institutes	3,935	6,328	10,129	60.1	64	46	69	50	283	283	436	54.1
Technology & Polytechnic Institute	16,198	15,321	15,269	-0.3	36	36	36	0.0	977	977	759	-22.3
Total	20,133	21,649	25,398	17.3	100	82	105	28	1260	1260	1,195	-5.2

Source: Development Statistics 2023, Bureau of Statistics, Khyber Pakhtunkhwa

The economy of Khyber Pakhtunkhwa is mainly based on Agriculture, Industries and Services. The production of each sector is detailed below;



Source: Regional Accounts Wing/GDP, Bureau of Statistics, Khyber Pakhtunkhwa

Khyber-Pakhtunkhwa has taken a significant step towards promoting skill development by deciding to integrate technical education into public sector schools across the province which will impart practical skills to the students alongside their academic curriculum. This initiative underscores the need for bridging the gap between academic education and practical skills, ensuring that students are well-prepared for the challenges of the job market. Because the province faces unique challenges, including limited industrial development and a significant lack of alignment between education and market demands.

This research is focused on highlighting the gap between academia and industry in KP and then how the gap has been attempted to be bridged by academia-industry linkage. What are the outcome and impediments in integrating Higher Education, Technical and Vocational Training, Digital skill on local economic development?

This research mainly inquires gap and bridging of education and economic development in order to set policy lines/recommendation for the grey areas addressal.

2. Statement of the Problem

This research examine that whether the existing curriculum and education standards are fulfilling the necessary and sufficient conditions for meeting the labor market demand for skilled/educated workers? The supply of skilled work force to the labor market is enough for the production of goods and services planned by relevant industry/sector or not?

3. Research Methodology:

The study would use different tools to collect information upon the production of skilled/vocational and professional graduates per year from all the universities/Degree & Diploma awarding institutes and vocational and training centers in Khyber Pakhtunkhwa Province. These tools would assess the proportion of these skilled workers employed in relevant industry.

The market value of these graduates in general labor market and in the relevant industry will be compared for finding the value addition of a specific skill when required.

This paper is based upon both primary data and secondary data with their sources and tools given below:

I. Primary Data

The tools would include:

A. Structured questionnaires for conducting interviews. (From Skilled Labor Force and Ordinary Labor Force Respondents)
B. Check lists for key informant interviews. (From Heads of Educational Institutions like Vice Chancellors & Director ORICS and Owners & HR Leads of different Industries/businesses/Sectors of the economy)
C. Focused Group Discussions. (Students of Universities/Professional Institutes/Technology Centers/Incubation centers/ HR Managers and Skilled workforce)
D. Telephonic/Postal Interview tools. (Public Service Commission officials and private sector hiring bodies)

II. Secondary Data Sources:

A. General Population Census 2023 (Pakistan Bureau of Statistics)
B. Socioeconomic Indicators of KP (Pakistan Bureau of Statistics, 2023)
C. Pakistan Labor Force Survey 2022
D. GDP report of Khyber Pakhtunkhwa (Planning and Development Department of KP from2015-16 t0 2023-24)

E. Economic Review of Khyber Pakhtunkhwa (Planning and Development Department of KP from2015-16 t0 2023-24)
F. Socioeconomic Indicators of Khyber Pakhtunkhwa. (Planning and Development Department of KP from2015-16 t0 2023-24)

4. Context (Gaps Identified in already conducted Researches/Studies)

Junejo, Memon, and Muhammad (2018) elucidated that the relationship between industry and university has gained significance in higher education. The establishment of University Based Incubators (UBIs) in both public and private universities in Pakistan is not supported by the government. Many graduates in subjects such as business, commerce, and economics lack practical experience and training internships, leaving a gap in their education. Companies have drawn attention to this gap because, although practical job experience is a continuous expectation for graduates, real output now falls short of expectations.

Malik, Raziq, Allen & Ahmad (2021) emphasized that HEC current focus is to align educational outcomes with economic demands. It can enhance students essential skills and to empower them to work with intelligent equipment in the fourth industrial revolution, which is also known as digitalization. Pakistan digitalization policy aims to accelerate and establish a strategic framework for innovation and growth, empowering individual businesses and institutions to thrive in a knowledge driven economy through a digital ecosystem.

Bano, Yang & Alim (2022) explained that Pakistan's youth unemployment constantly rising while companies has shortage of skilled employees. It is essential to concentrate on excellent vocational training, can help bridge the gap in Pakistan. There is a close link between Technical Vocational Education and Training (TVET) and industry, as industry is the basic client of TVET. The TEVT generates workers and they works domestically and internationally.

Inamullah, Naseeruddin, Hussain & Shah highlighted the present profile of technical education in Khyber Pakhtunkhwa, Pakistan, to pinpoint the physical facilities problems of technical education, to highlight the academic problems in technical education, and to recommend strategies for the improvement of technical education in Pakistan. To cope with this changing nature of the workplace, it is essential to develop through lifelong education, the necessary skills required to perform a job.

Sattar & Urooj (2024) stated that unemployment rate in Pakistan is high due to disparity between education offered and the demands of the economy, weak university-industry linkage, increase in job seekers and shrinking economy affect new investment and businesses. The main question is whether the current educational strategies prepare students for employment or merely contributing to produce educated unemployed youth? The introduction of programs, based on industry demands to equip students with marketable skills and the integration of modern technology can create more opportunities.

After review of the literature the gap came for research is to analyze whether the existing education system and standards of Khyber Pakhtunkhwa are aligned with market demands and connectedly is the skilled work force enough to ensure local economic development.

5. Analysis and Findings

5.1.Education-Industry Gap Analysis

Khyber Pakhtunkhwa has a fundamental and primary issue of the absence of formal partnerships between academic institutions and industries which hinders the ability of academic institutions to align their programs with the needs of the local economy. Such partnerships are essential for connecting academic programs with industry needs, providing students with internship and employment opportunities, and fostering innovation through joint research projects (Zahra et al., 2021). Without these partnerships, academic institutions and industries in KP remain disconnected, hindering local economic development.

There is no alignment of academic disciplines with skills demanded by industry contributing to unemployment in KP. Key industries in KP, such as mining, manufacturing, and tourism, require specialized skills that are not adequately covered in the current academic curriculum. Moreover, universities do not offer standardized degree courses on tourism and hotel management and the courses, a few private colleges and universities offer, do not meet the international standards.

Another significant impediment is lack of resources within Academia because many educational institutions in KP lack the required resources. Khyber Pakhtunkhwa is consistently expanding and improving education institutions across the province. More funds are required as Khyber Pakhtunkhwa resources are not enough to cater for 240 million people on education. Allocation

for Education sector in budget 2024-25 is Rs.362 billion which is increased from 2023-24 budget allocation which was Rs.43 billion.

The provincial government released funds to universities on need base, which has temporarily improved the situation. However, the shortfall is still present and will not be resolved in the long run.

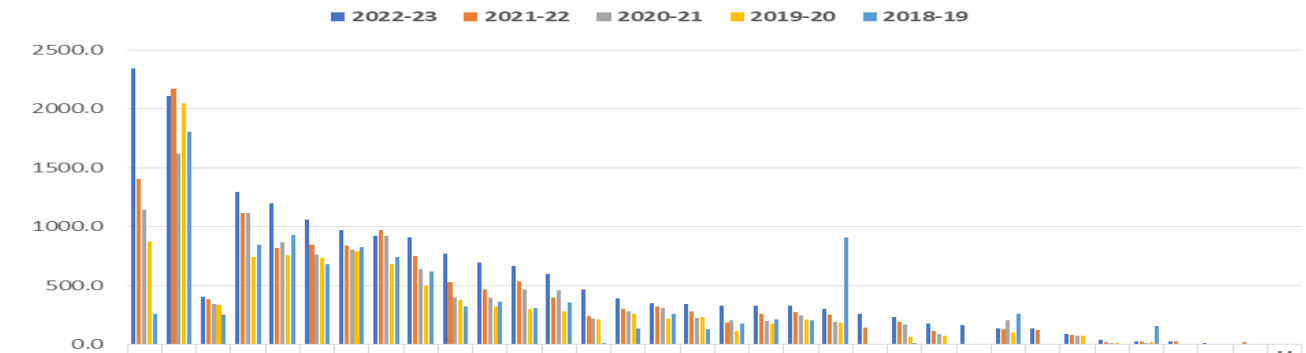
Universities have faced issues during the asset distribution and common example is between Gomal University & Agriculture University D. I. Khan and University of Science & Technology Bannu & University of Lakki Marwat where the parent University denied to give the property and other assets to its upgraded campus despite of the fact that University of Lakki Marwat was established in October 2017 whereas Agriculture University D. I. Khan was established in *March 2018*.

There is a grave issue of disproportionate funding of Colleges and Universities by KP government which is detailed below in Table 6

Indicators in Billions	Public Universities	Public Colleges
Total Expenditure	33.45	28.53(C)+5(P)=33.53
Self Generated Income	18.1	0.4
HEC Grant	9.4	0
Recurring Budget	0	33.53
Provincial Grant in Aid	1.9*	0
Deficit	4.25	0

Source: Higher Education Department, Khyber Pakhtunkhwa.

Additionally, 5Years Trend of Total Own Resources of PSUs is as following Figure 2



	KMU	UOP	BKUC	AWKUM	UETP	UAP	ICP	GUD	HU	KUST	UOM	UOH	IMSP	PAF-IASH	UOST	USTB	UOSW	WUS	AUST	SBBWUP	SBBUSD	UOL	WUM	UETM	UAGS	KKKUK	UOB	UOC	FATAU	UOTN	UAGD	UEAS	UVSS	UOSHNG
2022-23	23	21	40	12	11	10	96	92	91	77	69	67	60	46	39	35	34	33	32	32	30	26	23	17	16	13	13	86	39	28	26	11	2.	0.
2021-22	14	21	38	11	81	85	83	96	75	52	46	53	39	23	29	32	28	18	26	27	25	14	18	11	9.	12	12	80	21	26	25	0.	18	0.
2020-21	11	16	34	11	86	76	80	92	64	40	40	46	45	22	28	31	22	20	19	24	18	0.	17	85	0.	20	0.	72	13	16	0.	0.	0.	0.
2019-20	87	20	33	74	75	73	79	68	50	38	32	30	28	21	25	21	23	11	17	21	18	0.	71	74	0.	10	0.	75	11	19	0.	0.	0.	0.
2018-19	26	18	25	84	93	68	82	74	62	32	36	30	35	12	13	26	12	17	21	20	90	0.	14	0.	0.	26	0.	0.	0.	15	0.	0.	0.	0.

Unfortunately, the HEC has frozen its annual grants of 9.5 Billions to universities since 2018. The Federal Government intimated that following the 18th Amendment, higher education is a provincial responsibility. Older institutions, such as the UoP, GUD, AUP and UET-P are particularly struggling with outstanding pension payments ranging from three months to two years. For FY 2024-25 Provinces of Sindh, Punjab, and Balochistan have allocated 32, 17 and 5.2 Billions respectively for PSUs. Unfortunately for KP allocation for the FY 2024-25 is zero. HED, KP has requested for grant of 13 Billions as recurring grant and GIA for PSUs.

Moreover, there is no research collaboration between academia and industry. In other regions, academic research is a key driver of innovation in industries. However, in KP, industries and academic institutions operate in isolation, which limits opportunities for joint research projects that could lead to new technologies and solutions tailored to local economic needs (Khan et al., 2020).

Under-Enrollment and Lack of Research Output in Universities Table 7

Total Depts in all PSUs	Depts With Enrollment < 100	Dept With Enroll b/w 100 & 200	% of Dept with < 100 Enroll	% of Dept with < 200 Enroll	Depts with zero Publication in last 3 yrs	% of Dept with no Publication in last 3 yrs
698	240	219	34%	65%	208	30%

The manufacturing sector in Khyber Pakhtunkhwa is facing a scarcity of competent people, but the main issue is the disparity between the capabilities that the business needs and those that are readily available in the labor market. Productivity and the industry's capacity to implement cutting-edge manufacturing processes and technologies are impacted by this. Vocational training and educational programs are desperately needed to close this skills gap and guarantee a consistent stream of skilled workforce.

5.2. Integrating Education and Industry and its Impact on Local Economic Development

In the fiscal year 2023–2024, education made up 3.82% of the province's GDP, but it made up 7.83% of the value added by the services sector. This subsector's growth rate increased by 10.96%, and for the fiscal year 2023–2024, its GVA is Rs. 158 billion. This subsector includes all estimated formal and informal education-related activities. From pre-primary to higher education, religious studies to sports and cultural education, it covers all aspect of formal education.

Table 8: Gross Value Added, Growth Rate and Share of Education in Services Sector and Provincial GDP

Years	GVA (In billion)	Growth Rate (%)	Contribution to Services Sector (%)	Contribution to Provincial GDP (%)
2021-22 (F)	135	1.72	6.76	3.32
2022-23 (R)	143	5.97	7.16	3.51
2023-24 (P)	158	10.96	7.83	3.82

Source: Regional Accounts Wing/GDP, Bureau of Statistics, Khyber Pakhtunkhwa

Khyber Pakhtunkhwa is bridging education-industry gap. There has been linkages through joint research projects and publication, joint conferences and seminars and the universities have established consultancy with academicians. Moreover, students have been placed in industry to greater extent. The curriculum has incorporated industries input. The universities has arranged training to industry staff.

The evidences have been collected from various universities of Khyber Pakhtunkhwa. As the University of Technology Nowshera, through its Office of Research Innovation and Commercialization (ORIC), is actively engaged in establishing meaningful collaborations with various industries. Several significant MoUs have already been signed, including with the Information Technology Association Pakhtunkhwa (ITAP), which comprises 140 different software houses, Oxygen Private Limited, and the Nowshera Chamber of Commerce and Industries. The university is also in the final stages of formalizing an MoU with the Small Industries Development Board, following a successful meeting. Through these partnerships, ORIC is bridging the gap between academia and industry, ensuring that students and faculty collaborate on real-world problems, thus enhancing their technical expertise and problem-solving skills.

Outcome in the Form of Projects, Training, and Curriculum Development is that the University of Technology Nowshera has begun to reap the benefits of its strong industry-academic collaborations. For instance, the university successfully completed a project for Medasia Pharmaceutical, resolving their capsule filling issue. Additionally, two ongoing projects with Akora Seeds aim to develop an Automatic Seed Grainer and an Automated Seed Germinator.

These efforts are further reflected in the final year projects of the students, which include industrially relevant solutions such as an automated mushroom cultivator, hybrid power generation, and electric bicycles. The university has also established an Industrial Advisory Board (IAB), which regularly meets to ensure the curriculum is updated to meet evolving industry demands.

In line with current industry needs, the university has launched a Bachelor of Science in Computer Science (BSCS) program, and it regularly organizes workshops and training sessions for both faculty and students. Notable collaborations with GIZ have enabled training on digitalization, green energy, and gender inclusivity in alignment with sustainable development goals. These initiatives underscore the university's commitment to fostering innovation, addressing industrial challenges, and preparing students for the future.

65 % of graduated students are employed (public and private sectors). Students spend their whole final year in industry for supervised industrial training, this is mandatory degree requirement. ORIC has dedicated industrial liason officer to establish linkages with industry.

The young population of Khyber Pakhtunkhwa province offers potential for economic expansion. In Khyber Pakhtunkhwa, there are 6.4 million students enrolled in school and more than 6,000 ICT graduates from universities each year. The digital workforce fuels the pillars of digital government and economy through digital skills. Through the Business Process Outsourcing (BPO) sector, the government has taken the lead and given young people job chances. Digital Skills education has been implemented at the basic and secondary levels in Khyber Pakhtunkhwa.

The Khyber Pakhtunkhwa Information & Technology Board (KPITB) is leading a capacity-building project called "Employable Digital Skills for the Youth of Newly Merged Areas," in collaboration with DEMO, Data Point, and Tech Valley. The project aims to teach 840 young people in the newly combined districts of Khyber Pakhtunkhwa employable digital skills so they can be included in the digital economy through the KP Youth Employment Program (KPYEP). A total of 870 young people from combined districts have successfully finished their digital skills training thanks to the program.

In order to guarantee women's participation in the digital economy, the KPIT Board launched the "Women Empowerment through Digital Skills" initiative under its flagship program, the KP Youth Employment Program. The Multi-Donor Trust Fund and The World Bank provided funding for the initiative, which had the backing of the Khyber Pakhtunkhwa IT Board. Digital tool productivity, Word Press design and development, blogging, graphic design, and social media marketing are among the courses that are provided. Its main goal is to provide 3000 young women with digital skills training so they can contribute more to the province's digital economy and Pakistan's broader digital ecosystem.

The academic community is very interested in how artificial intelligence will affect the economy. The world economy is unavoidably impacted by the rapid advancement of artificial intelligence technology, which has had a significant impact on many international sectors. A favorable growth trend in the information and communications technology sector is apparent from the overall number of customers to various services in Khyber Pakhtunkhwa. With a growth rate of

4.55%, the number of subscribers climbed from 26.923 million in the fiscal year 2022–2023 to 28.150 million in the fiscal year 2023–2024.

Preparing students for the real-world demands of the labor market requires including technical courses into the academic program. Enrollment in KP-TEVTA has gradually increased, with an average of 30,000 young people trained annually. During the reporting year, 31,123 trainees were registered in the aforementioned trades and technologies. Given their importance to economic growth, the light engineering, manufacturing, and construction industries have been among KP-TEVTA's top goals.

In an effort to improve the connections between KP-TEVTA Institutes and nearby enterprises, the organization has engaged seven Vocational Counseling and Job Placement Officers. Through various interventions including Workplace Based Training (WBT), Apprenticeship Training, On the Job Training (OJT), and others, both completed and in-training trainees are connected to the industry.

6. Recommendations

Policy measures are required as per Triple Helix Model “Academia Industry & Government” to make it a win win Situation.

- There is a divide and lack of trust between academia and industry since academic research is viewed as long-term profit while industry wants to make immediate monetary benefits and keep up with emerging innovations. Therefore, mutual trust is the main prerequisite for reaping the full benefits of the academia-industry nexus.
- Development of an Innovative out of the box mechanism to overcome financial issues in the Universities. Proper mechanism may be developed for equitable asset distribution among the Universities. Grant greater autonomy to universities while implementing robust accountability mechanisms linked to their funding to ensure efficient resource utilization and academic performance.
- Informed decision making and rational assessment of the demands and supply gap and trends in job market is necessary. Professionals and students should have access to skill-based information systems, and training should be provided in accordance with market demand. To close the gaps between the supply and demand of skilled labor, a network of

numerous organizations should be developed, comprising both information producers and users. To close the skills gap in supply and demand, the platform must be accessible to all relevant parties, including companies, immigration authorities, policy makers, planners, technical training institutes, and job searchers.

- Industries with a shortage of skilled workers should be given priority over those with an excess of qualified workers in order to create various needs that align with the supply side. The need for skilled labor across sectors and levels needs to be anticipated in order to minimize heterogeneity in vocational and technical institutions. It is necessary to investigate the possibilities for training facilities for the pharmaceutical and marble sectors.
- It is necessary to invest in education and training programs in order to create a qualified workforce that can satisfy the unique demands of the services industry. To close the skills gap in the labor market, a trained workforce must be developed through vocational training facilities and industry-specific educational initiatives. Encouraging lifelong learning and continual skill development will guarantee that workers are able to adjust to changing industrial demands and technology breakthroughs.
- To evaluate and raise digital literacy levels, a framework for digital competency and literacy must be created. To enhance learning outcomes, there should be a greater emphasis on the use of technology in technical and vocational education and training, as well as in primary, secondary, and tertiary education. To prepare our children for the future, demand-driven digital skills will be taught at the elementary, secondary, and university levels.
- To facilitate planning, research, education, training, and career prospects for TVET graduates, all technical, vocational, educational, and training institutions should have a link to the NAVTTC website. In order to preserve the balance between the technical and educational sectors, more technical institutions are needed than vocational ones, taking into account the demands of the modern world. In order to undertake research on all the specified areas in each Industrial Zone and connect it with the skilled labor force looking for work, a research center must be formed in the provincial TEVTA. In order to plan and deliver TVET, the role of Chambers of Commerce and Trade Associations must be

significantly strengthened. Establishing a thorough communication channel with all parties involved addressing the need for TVET skills and TVET.

7. Conclusion

Bridging the education industry gap in Khyber Pakhtunkhwa is crucial for the province's economic development. By integrating higher education, vocational training, and digital skills with local economic needs, KP can create a more skilled workforce, drive innovation, and enhance its competitiveness in the global economy. This requires a concerted effort from all stakeholders, including government agencies, academic institutions, and industries, to create policies and partnerships that promote collaboration and innovation. With the right strategies in place, KP has the potential to transform its education system and harness its human capital for sustainable economic growth.

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