



CPEC and Skill Development: A Mixed Method Study Approach in Pakistan

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Abstract

The China-Pakistan Economic Corridor (CPEC) represents a transformative mega-project for Pakistan, with the potential to significantly boost economic growth, infrastructure development, and regional connectivity. However, the successful implementation of CPEC projects largely depends on the availability of a skilled workforce capable of meeting international standards. This study explores the critical skills required by Pakistan's human capital to fully leverage the opportunities presented by CPEC 2025 and 2030. A qualitative research approach was employed, combining secondary data from literature reviews with primary data collected through face-to-face interviews of 16 CPEC experts from Quetta using purposive sampling. The interviews were analyzed through a three-step process of data condensation, grouping, and structuring, enabling the identification and prioritization of the skills necessary for workforce development. The study identifies 22 essential skills, categorized into four broad areas: Soft Skills, Technical Skills, Information Technology (IT) Skills, and General Skills. Soft Skills include creative thinking, conflict management, communication, hospitality management, teamwork, customer service, and cultural awareness. Technical Skills cover machine operation, windmill operation, mining, mechanics, electrical work, plumbing, industrial operations, and material handling. IT Skills emphasize computer operation, artificial intelligence, and telecommunication, while General Skills focus on town planning, transport management, financial management, and quality assurance. Findings highlight the urgent need for Pakistan to up skill its workforce across all sectors to meet the demands of CPEC projects. Recommendations include establishing modern, technology-equipped training institutes, revising curricula in technical and vocational education, and collaborating with Chinese training institutes to ensure long-term skill development.

Keywords: CPEC, Soft Skills, Technical Skills, Information Technology Skills, General Skills

1. Introduction

The most significant project that marked the coalition between China and Pakistan is the China-Pakistan Economic Corridor (CPEC), which falls under the Belt and Road Initiative. Laid down in 2013, the CPEC plans to bring new infrastructure, energy projects, and a network of roads and railways to Pakistan (Iftikhar et al., 2021). The corridor is from Gwadar in Pakistan's Baluchistan province to China's western Xinjiang region, extending to 3,000 km or more (Ashraf, 2023). In other words, from a global perspective, CPEC promotes trade connections between China and the Middle East, Africa, and Europe. In contrast, from the Pakistani stance, it means economic uplift through infrastructure construction (Waheed et al., 2024). Many analysts have underlined the role of CPEC on the geopolitical and geo-economic map of the region. Waheed et al. (2023) note that through CPEC, Beijing got an outlet to warm water to avoid the vulnerable Strait of Malacca, making it more secure in providing energy. Similarly, Awais et al. (2019) argue that CPEC has emerged as a focal development project in Pakistan that might be useful in addressing critical issues such as the energy gap, infrastructure development, and FDI.

1.1. CPEC and Skill Development

CPEC, formally launched in 2015 as a flagship corridor under China's Belt and Road Initiative (BRI), aims to enhance connectivity, infrastructure, energy expansion, and economic zones in Pakistan. Several recent reviews emphasize its socioeconomic impacts—including employment and human capital dimensions—even if those are not the main focus in most studies. The narrative literature review by Shahzad & Sunawar (2024) notes positive effects on employment and infrastructure but also underscores regional disparities and governance challenges in maximizing benefits (Shahzad & Sunawar, 2024). Empirical work on citizen perceptions suggests Pakistani publics see employment opportunities and poverty reduction through CPEC, but are skeptical about education improvements unless policy focus is enhanced (Saad et al., 2019).

Several studies dilate the role of human capital development and regional connectivity in economic development. For example, Maritra (2016), in the case of Singapore, found a strong juxtaposition between human capital development, employment and economic growth. She argued that Singapore could achieve the growth target by investing in human capital development and enhancing its connectivity with the regional countries. Although Singapore is connected to the region through sea and air, it clearly indicates the role of connectivity (sea, road, air) in economic development.

CPEC has three railways-related projects; one of the projects is to upgrade the ML-1-line, which links Karachi to Peshawar; it is one of the significant lines of Pakistan as this line can carry 70 per cent of freight and passengers travelling across Pakistan (Ali, Sabir, Bilal, Ali, & Khan, Economic viability of foreign investment in railways: a case study of the China-Pakistan Economic Corridor (CPEC), 2019). This upgrade of line ML-1 is already in progress. Furthermore, two railway projects, including a dry port at Havelian, and the final one is upgrading the capacity of Pakistan Railways, including building new locomotives and carriages. The proposed

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investment in these projects is US\$82 billion, which will eventually cater for the trains with 160 KM/Hr speed for passenger trains and 120 KM/hr for freight transport. This massive investment in railways has generated jobs for unskilled and highly technical skilled people. After its completion, this project will transform how people travel and use cargo bookings for train transport. It will also save time for businesses using freight service of trains, overall enhancing the efficiency of trains (Ali, Sabir, Bilal, Ali, & Khan, Economic viability of foreign investment in railways: a case study of the China-Pakistan Economic Corridor (CPEC), 2019).

Many study (Ali et al., 2019) supported the idea that as more advanced technologies are adopted, the world is becoming a smaller, more interconnected place, making it easier to get the skilled labour that is needed anywhere in the world. According to Saith (1989), the practical and skilled labour force, a crucial participant in the process of national acceleration, can assist in increasing national GDP many more times. A skill is the capacity to complete a task with specific and desired results, frequently in a predetermined amount of time, energy, or both. A diverse set of human skills are necessary for a modern economy. Skills and health are the primary components of human capital in non-classical economics, with a rigorous individualist connotation. The ability to work independently, to make decisions about how to complete tasks, and to do so without being directed. Human capital can include soft talents and hard skills. According to Griffith et al. (2013), technical expertise is a hard talent that is necessary to carry out organizational operations. The non-technical soft skills are linked to the manager's collaboration and interpersonal interaction capacity. According to David A. Griffith (2016), decision-making requires using these soft talents. According to Bancino and Zevalkink (2007), recent research suggests that a lack of soft skills rather than a lack of complex abilities is a significant factor in project failure. Soft skill proficiency among employees was a deciding factor for businesses (Crosbie, 2005). It is believed that the best approach to managing a hotel is to "hire for attitude and train for skills" (Bobinski 2005, Carbonara 1996). A skilled and technical workforce attracts investors, generating new business prospects, new jobs, and higher productivity (Wajeesh & Yang, 2018).

The capacity to handle finances, think creatively, manage quality, manage conflicts, communicate effectively, manage customer relationships, and cultivate a service orientation are all talents that hospitality management professionals have, according to Ashley et al. (1995). According to McGinley, Mattila and Self (2019), the new working environment needs highly skilled laborers who can handle and use cutting-edge technology. Today's workplace demands staff with high-tech abilities and interpersonal skills. Employees are expected to stay current on changes in the global economy (Masri, M.W., 1998); therefore, consider adopting the TVE system as aggressively changing the job market and advancing technological developments (Koch, Gerdt, & Schewe, 2020).

1.2. CPEC, Regional Connectivity, and Economics Development

CPEC connects Kashgar (China) to the Gwadar Port in Balochistan. It is a natural deep-water port in Pakistan (Elahi, 2018). The connectivity from Gwadar to Kashgar would be by roads and railway links because such a mode of transportation will reduce the costs of transportation of goods reaching China. Economic viability of foreign investment in railways: a case study of the China-Pakistan Economic Corridor (CPEC), 2019). CPEC provides Pakistan with infrastructure and generates job opportunities for the Pakistani and Chinese labour force (Farooq & Khawaja, 2019). CPEC project is highly significant for both countries; it is not just an economic development project but also a transit route for trade. It will reduce the distance for goods to reach China, which will benefit China, and Pakistan will benefit with transit for international trade, eventually benefiting Pakistan's economy. It will give rise to employment opportunities, bring stability to the country, and, most importantly, alleviate poverty (Farooq & Khawaja, 2019). It will also attract foreign investors to invest in Pakistan to gain an advantage from transit routes developed in CPEC, ultimately increasing the GDP. Moreover, CPEC provides Pakistan with upgrading its infrastructure, ensuring Pakistan's energy requirements are met. CPEC will play a vital role in Pakistan's economic revival because of the plans to develop infrastructure, railways, seaports, and airports. The most undeveloped province, Balochistan, will benefit from these developments, and they will also enhance and boost the economic gains for the locals of the province. Belt and Road Initiative is a multibillion-dollar project. It is a huge experimental project, One Belt One Road, between Pakistan and China. It will not only benefit Pakistan and China but also other countries, namely, India, Afghanistan, Iran and other central countries. The CPEC will promote a better understanding of the exchange of regional knowledge, people-to-people exchanges, and cultural communication, and it will enhance considerable activity in the bulk flow of commerce and trade. According to Atta-ur-Rahman (2016), the CPEC, a flagship initiative of China under the auspices of OBOR and also known as the "corridor of knowledge," can contribute to Pakistan's long-term economic stability. However, HRD needs to receive the proper attention. For Pakistani workers, CPEC has already created 30,000–70,000 jobs. Anecdotal evidence suggests that the lack of skilled workers in the native labour pool is so significant that Chinese workers currently fill skilled positions within these projects. These include 16,000 labourers and engineers in CPEC energy projects and 13,000 in the transport and road sectors (Khawar Hassan, 2018). Pakistan Vision 2025 is a strategy plan to take full advantage of economic growth and improve everyone's standard of living through economic growth, which calls for qualified human capital and Social capital. In the HDI rating, which statistically evaluates life expectancy, education, and standard of living, Pakistan was rated 146th out of 187 nations in the UNDP Human Development Report 2013 HDI ranking. The Pakistan Vision 2025 strongly emphasizes raising education standards and enhancing life quality.

A solid educational infrastructure and a highly educated labour force are prerequisites for becoming a global financial hub (O'Connor and Luanti, 1999). As of primary level enrollment, Pakistan has a literacy rate of 54%, according to the Pakistan Economic Survey, 2017-2018. Punjab leads the rest of the country with a literacy rate of 59%, followed by Khyber Pakhtunkhwa

with a literacy rate of 53%, Sindh with a literacy rate of 48%, and Baluchistan with a literacy rate of 33%. 78% of girls and 94% of boys are enrolled in primary-level classes nationwide (Mumtaz Alvi, 2018). Additionally, comprehensive efforts must be made to enhance the education sector. Pakistan's youth comprise a sizable population, which presents a fantastic opportunity to prepare a workforce engaged for development objectives. Infrastructure development is a critical issue, and Pakistan's youth must be given the proper training, education, and sophisticated skills to attain economic success and long-term progress (Saleem, 2017)

The definition of technical vocational and education training offered by UNESCO in 1999 attributes to the learning process that includes, in addition to formal education, the study of technologies and related science, as well as the acquisition of practical skills, understandings, attitudes, and knowledge relating to required various dimensions of social life and in economic growth. Currently, TVET is seen as playing a vital role in obtaining adequate Education for sustainable and long-lasting development and high-quality education for all, and it is seen as a lifelong learning agenda during the development of skills (King, 2011).

A significant body of evidence supports the argument that TVET is crucial for the growth of the economy and human capital in the context of eradicating poverty and promoting sustainable development. This has significant advantages for each person, their families, and society. According to Drucker (1999), human capital significantly impacts economic development and a nation's ability to compete globally. In order to finally direct economic activities towards economic growth, strengthening, and progression, a balanced approach to human development resources strategy is required for both the development of skills and general and formal schooling (UNESCO-UNEVOC2016-2021). According to Finn (1991), governmental and private investment in higher education and skills development is essential for generating more incredible national wealth. TVET is well known for providing developed skill job opportunities that boost skilled workers' productivity, returns on investments (ROI), and total national economic growth. Pakistani workers registered between 2013 and 2016 are listed here, organised by profession, based on the Economic Survey of Pakistan 2015–2016.

Table 1

Year	Highly Qualified	Highly Skilled	Skilled	Semi-skilled	Unskilled	Total
2013	12,057	5,032	263,138	102,963	239,524	622,714
2014	14,647	6,216	287,649	120,204	323,750	752,466
2015	17,484	7,853	397,317	151,636	372,281	946,571
2016	16,510	8,172	335,671	152,235	326,765	839,353

Source: Pakistan Bureau of Emigration and Overseas Employment

In Asia-Pacific, high-skill growth is growing with more opportunities for employment due to the emerging trends of job polarization and structural changes (Yu & Noh, 2017).

Greater use of technology in the workplace has increased the demand for tech-oriented individuals who are flexible in working with technologies, problem-solving, and maintenance. Hence, Jobs these days require individuals with talent skills. The traditional ways of performing a single task at a time are long gone. With technology, a person can multitask and work efficiently. This transformation has broadened the skills required for the job. However, when considering the Asia Pacific workforce, the education and skill levels could be higher (ILO,2017). More often, jobs are held by someone who does not need to meet the education and knowledge required for the job (ILO, 2017).A road map of abilities is provided by human capital theory; this has focused on investments in learning and training for people. This directly impacts all stakeholders and economic development at an extreme level. The most critical reflection of the scientific research field. Human capital development issues are growing daily, and there exists a gap in knowledge or a need for specific skills demanded by the job.

High levels of skills requirements of jobs have also given rise to unemployment because of a mismatch of job skills and the talent available in the market for recruitment. In addition to participating in public-private partnerships for TVET enhancement and provision, the government must develop plans for skill development (Maclean, 2013).It has been observed in many field studies that in developing countries, effective training and development programs that focus on knowledge of everyday science, technology and entrepreneurship are closely associated with income-generating policies that help reduce poverty. In many countries, skills development projects are mostly handed over to NGOs (non-governmental organizations). The government should consider the development of formal education institutes and ensure the necessary transformation to satisfy the needs of vulnerable youth enrolled in such institutes and those not enrolled. According to Siddiqui & Rehman (2017), economic growth is rapidly increasing the demand for skills, and vocational education institutes should be made operational in every territory to ensure the development of skills in youth, and this will ultimately benefit economic growth. Because of a skills gap, there is a growing mismatch between the demands of the positions and the person employed to perform them. The issue of skill shortages is argued to be more severe than the labour and job deficit (Consearo, 2021).

1.4. Statement of the Problem

Despite the large-scale infrastructure investments under the China–Pakistan Economic Corridor (CPEC), Pakistan continues to face high unemployment, particularly among youth and unskilled workers. A significant skills gap exists between labor market requirements and the competencies of the local workforce. Although various workforce training and skill development programs have been introduced under CPEC, their effectiveness in improving employability remains unclear. Limited coordination between

industry needs and training institutions further constrains job absorption. This creates a need to assess how CPEC-related skill development initiatives contribute to reducing unemployment in Pakistan.

1.5. Rationale of the Study

This study is essential to evaluate whether CPEC-related skill development initiatives are effectively translating into employment opportunities. Understanding the alignment between workforce training programs and labor market demands will help identify gaps in implementation. The findings can guide policymakers in improving training frameworks to maximize employment outcomes. It also provides empirical evidence on the role of human capital development in leveraging mega infrastructure projects. Ultimately, the study supports sustainable economic growth and inclusive employment generation in Pakistan.

1.6. Significance of the Study

This study holds significance for policymakers by providing insights into how CPEC-related skill development programs can be optimized to reduce unemployment. It benefits educational and training institutions by highlighting gaps between training curricula and industry requirements. For the labor force, especially youth, the study emphasizes the importance of relevant skills for improved employability. Investors and industry stakeholders can use the findings to better engage in workforce planning and development. Academically, the study contributes to existing literature on infrastructure-led development and human capital enhancement in developing economies.

2. Methodology

Primary and secondary data were collected to achieve the objectives of this research. Secondary data was extracted from previous research. Primary data was collected by interviewing experts. A literature review was carried out on certain selected topics, such as skills related to CPEC, Pakistan Vision 2025 and 2030 and skills requirements in developing countries. Face-to-face interviews collected primary data from 16 respondents by using a purposive sampling technique. The interviewees were made aware of the interview protocol in advance. The interviewees were assured of the high ethical requirements.

3. Analytical Techniques

Data analyses were done in three steps: Condensation, grouping and during the data collected through interviews. In the condensation step, researchers made a summary of all the interviews in order to understand similar words and to develop a summary of findings. Furthermore, researchers extracted the skills mentioned by interviewees that need to be developed in Pakistani Human Resources, taking CPEC into consideration. After understanding and summarizing the interviews, the findings were categorized into different groups according to their nature and meaning. Finally, the findings were structured according to the priorities of the groups.

4. Results and Discussions

4.1. Skills Required for CPEC

After analyzing the interview data, 22 skills related to CPEC were identified and divided into four categories. The government of Pakistan must train its workforce accordingly to compete and convert CPEC into a game changer for Pakistan. These skills are further classified into the following subcategories for detailed understanding.

4.1.1. Soft Skills

The first category includes Soft Skills required for CPEC 2025. Further, there are seven sub-categories of skills in soft skills. These skills are Creative Thinking, Conflicts Management, Communication Skills, Hospitality Management Skills, Teamwork Skills, Customer Services Skills and Cultural Awareness Skills.

4.1.2. Creative Thinking

Creative thinking is the skill everyone is eyeing in this competitive era. There is a need for more such skills in the current market. Creative Talent innovates more innovative solutions to problems, and they are key players when it comes to innovative ideas and help materialize them. This is significant in improving products and business processes in long-term CPEC projects.

4.1.3. Conflict Management Skills

Workplace conflict can occur at any time and at any hierarchy level. What do you do when you enter into conflict and when resolving a conflict among your employees? There are professional ways. To deal with such conflicts at the operational and management levels. The workforce must be equipped to create a sustainable working environment. Chinese and Pakistani workforce have different cultures and attitudes to businesses and jobs. When these two different citizens work together, conflicts will arise. Managers with conflict management skills will help solve conflicts between them.

4.1.4. Communication Skills

Communication skills include written and verbal communication in English and Chinese. These skills help one to communicate his or her messages clearly to the audience. Such skills help people get jobs in Chinese firms and are also essential for doing business with them. Chinese language is one of the critical skills to compete in the Chinese market. Pakistani workforce should learn the Chinese language to communicate clearly with the Chinese.

4.1.5. Hospitality Management

Pakistan is blessed with natural beauty, especially in northern areas. Currently, most local and foreign tourists visit northern and other areas of Pakistan for tourism. Pakistani people are welcoming but need to be up to the international level. However, Pakistan needs to train its workforce in hospitality so that when tourists visit the country, they should have a great experience.

4.1.6. Team Work Skills

Teams that have synergy among them are more productive and efficient. Equipping the workforce with this skill will boost the efficiency of organizations. Pakistani people prefer to work individually. They are not comfortable in working with the team. Government and private institutions should focus on developing a workforce that prefers to work within a team to improve efficiency and productivity.

4.1.7. Customer Service Skills

Everyone goes to restaurants, mobile operator franchises, hair salons, mechanics, or service providers. CPEC pressures high-quality customer services to satisfy customers and compete in this competitive market. As foreigners are flocking into the country, the level of customer service should be at the international level, as the traveller will assume it to be. More customer service skills are needed in many sectors today.

4.1.8. Cultural Awareness

When it comes to behaviours, one needs to have cultural awareness. Many people visit different places in Pakistan, be they local or international. In all service delivery sectors, the workforce should know the values and beliefs of the other person. Such things matter when working with a guy from a different culture or when he is providing his service to someone from a different culture. The workforce should be trained and taught the values and beliefs of local and international cultures.

4.2. Technical Skills

4.2.1. Machine Operators

Machine operators or machinists work with heavy machinery from setup to operation. Heavy machinery will be required to execute many CPEC projects. Pakistan needs to train its workforce to operate modern and more advanced machinery to meet the demand of Chinese companies.

4.2.2. Windmill Operator

CPEC has some energy projects as well. Windmills are installed in Pakistan to generate electricity. Chinese engineers operate such mills, and Pakistan has a massive shortage of such operators. There are many more such projects likely to come in Pakistan. Pakistani workforce should be prepared enough to cash this opportunity.

4.2.3. Mining skills

Pakistan is rich in natural resources. There are projects to extract minerals such as gold, copper, bauxite, salt, chromite, iron ore and many more. New, more intelligent, and innovative ways to extract such minerals are to be implemented. Many opportunities will arise in this sector; training individuals on current mining trends will ensure that job demands are met and that citizens of Pakistan benefit from such opportunities.

4.2.4. Mechanics

Old traditional fossil fuel transport systems are in transformation. People are moving towards electronic modes of transportation. Furthermore, mechanics are not required to have skills to identify and resolve vehicle-related issues, but they should have practical skills, good communication skills and an excellent knowledge of motor technology.

4.2.5. Electricians

Electricians are Electricians with special trade skills; they are responsible for the electrical wiring of homes, buildings, stationary machines and related equipment. Pakistan needs to train its workforce to acquire electrician skills, practical skills, and confidence when using power tools; they should be able to analyze blueprints of electrical wiring networks to be implemented. They all should be trained to have a methodical approach to work.

4.2.6. Plumber

Plumbers are responsible for sewage, drinking water and drainage systems as more infrastructure is to be developed. More buildings will be built to accommodate offices. Plumbers will be required to lay down water systems. Professional plumber skills such as applying adhesives, sealants and caulk, accessing confined spaces, installing pipe systems for gas, water, steam and other liquids and manual dexterity are must-have skills for any plumber.

4.2.7. Industrial skills

More manufacturing, shipping and distribution are expected from this mega project CPEC. Pakistan's workforce should possess industrial skills to meet the market's demands. Basic skills such as industrial math and workplace problem-solving skills are expected in the market. Such skills should be developed in the workforce to meet the enormous demands of companies.

4.2.8. Material handler

Material handlers are responsible for moving products in warehouses, finding them, wrapping them and putting them on trucks or unloading material off the trucks and putting them on shelves. This is also one of the essential skills for catching opportunities for CPEC projects.

4.3. Information Technology Skills

Technology is the most essential ingredient for the organization's success in this competitive world. Three critical IT skills have been identified for CPEC projects. These skills are related to telecommunication, a workforce that operates computers and Artificial intelligence skills. Skills can also be presented through the following chart:

4.3.1. Computer Operator

Computers are everywhere and are required in every kind of work, whether professional, technical, or clerical. There is a skill shortage in Pakistan; people are supposed to be trained to at least be able to use MS Office. For more technical jobs, workshops on the latest technology and new software interfaces should be offered to the workforce.

4.3.2. Artificial Intelligence

AI is being introduced slowly and gradually, and most of the work will be replaced by machines in future. In the current scenario, how can one operate such machines if one encounters them in his workplace? CPEC is a mega-project by China, and it is likely that these advanced systems will be installed in Pakistan. So, proper training in this advanced technology is a must to compete in this mega project.

4.3.3. Telecommunication

We know that telecommunication skills are essential for a person. Communication occurs all the time with everyone. It can be face-to-face, or it can be through email. These skills are required at workplaces. Some of the skills required are networking, programming, and cloud computing. These are technical skills that must be developed.

4.4. General Skills

The fourth category of skills is the General category. This includes Town planning, Transport, financial, and quality management skills.

4.4.1. Town Planning

Planning to construct plants and how to manage urban and rural areas. A significant investment will be made in Pakistan for CPEC projects. Infrastructure is to be built, and many industries are supposed to come and operate. Town planning will be the initial step the government will focus on. Smart infrastructure will make sure no one gets affected by it and things run smoothly. Training on town planning and developing these skills will ensure progress in the long run.

4.4.2. Transport Skills

Transport planners are needed to ensure all the transport strategies in place are functional and practical for pedestrians, motorists and heavy transport. They also take environmental and safety issues into consideration. Pakistan needs skilled people to devise strategies to ensure the smooth transit of goods, as Gawadar port will be used to import and export the products.

4.4.3. Financial Skills

Many financial institutes are offering professional financial certification. Pakistan introduces many programs in this regard. However, to meet the demands of CPEC, more than the current workforce is needed. Pakistan must create strategies to develop such financial skills in its young workforce. As we all know, it will be a requirement of every company to have financially skilled people on board. They will help the company forecast and distribute the project budget.

4.4.4. Quality Management Skills

Quality management is of high value among international consumers. The products prepared in Pakistan must meet high-quality export standards. There needs to be more awareness among the workforce regarding which product quality will be accepted internationally. Quality management is not restricted.

5. Conclusion

The findings of this study underscore the critical importance of developing a highly skilled workforce to fully realize the transformative potential of the China-Pakistan Economic Corridor (CPEC) by 2025 and 2030. The research identifies 22 essential skills across four key domains—Soft Skills, Technical Skills, Information Technology (IT) Skills, and General Skills—highlighting that workforce development must be holistic, addressing both interpersonal competencies and specialized technical expertise. Soft skills such as creative thinking, communication, teamwork, and cultural awareness are vital for fostering collaboration and managing diverse work environments, while technical skills, including machine operation, windmill operation, mining, and industrial processes, are necessary to support the practical demands of infrastructure and energy projects. IT skills, particularly in computer operations, artificial intelligence, and telecommunications, reflect the increasing role of digital technologies in modern project management, while general skills in town planning, transport, financial management, and quality assurance ensure effective project coordination and sustainability. The study emphasizes that Pakistan's current human capital may not yet fully meet these requirements, signaling an urgent need for comprehensive skill enhancement initiatives. Strategic recommendations include establishing modern training institutes equipped with advanced technologies, revising technical and vocational curricula to align with CPEC-specific needs, and fostering partnerships with Chinese educational institutions to facilitate knowledge transfer and long-term skill development. By prioritizing workforce upskilling across all sectors, Pakistan can not only maximize the economic and infrastructural benefits of CPEC but also create a competitive, future-ready labor force capable of sustaining regional connectivity, innovation, and growth over the coming decades.

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