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Human Capital Development for China-Pakistan Economic Corridor: What is Needed?

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ABSTRACT

CPEC is considered the game-changer for Pakistan and plays a significant role in improving human resources. Unfortunately, Pakistan is rich in Human resources as a high percentage of youth bulge but is facing the problem of a shortage of skilled workforce. The mega-projects will only be able to bring economic prosperity if they produce a skilled workforce for the various sectors in long-term projects. This study aims to discover the skills required for CPEC to be the game-changer for Pakistan. 16 Experts were identified to conduct the interviews for this research. The research found four significant categories of skills concerning CPEC, and further, these skills are divided into sub-categories. The skills are soft skills, technical skills, IT skills, and general skills. These skills will help CPEC become a game-changer for Pakistan. The government can develop policies to prepare youth by using findings.

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Introduction

Infrastructure plays a critical role in the development of any country (Chauvet & Baptiste, 2019). Its role in developing countries increases manifold as these countries are required to reduce poverty and boost economic growth. However, Pakistan is rich in natural resources but needs more infrastructure. Pakistan faces many issues in the energy sector, poor security and a meagre economy. The development of roads and transport infrasttransportlps povpoverty-drivenople living in remote areas improve their livelihood by connecting remote areas with main business centercentresarketmarketplacesarns them the opportunity to start a business or to find a job in order to alleviate their poverty and improve their living standards (Kanwal et al., 2019). China-Pakistan Economic Corridor (CPEC) is a flagship project of China under its grand vision of the Belt and Road Initiative (BRI). The Chinese government initiated the project 2013 to improve trade cooperation with European countries via Central Asian and Southeast countries. CPEC, with an investment layout of 62 billion dollars in Pakistan, is the strategic project of BRI (Kanwal et al., 2019). It is termed as the Game Changer in terms of the economic prosperity of Pakistan (Rana, 2016). CPEC helps both Pakistan and China. The project can help Pakistan resolve its energy and economic challenges and China successfully establish its South Asian presence by securing the trade route. It will connect both countries to Eastern Asia through Gwadar Port (Raza, 2018).

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Furthermore, the infrastructure that will be developed will generate investment opportunities for both locals and foreigners to invest in new ventures across Pakistan (Wang, 2017). According to analysts, CPEC projects are game changers for Pakistan, comprising various energy, education, economy, and infrastructure projects (Khwaja, 2018). The investment activities under this project are taking place in various regions of Pakistan, which has increased the demand for skills and talent in technical and non-technical jobs in the country. This tremendous economic initiative can improve the lives of its citizens and bring technological advancement to the country. Massive investment projects will generate entrepreneurship opportunities for citizens with the skills and resources to invest in new business ventures; these investments will give rise to job opportunities. The more job opportunities there are, the more people will be employed. Masses can earn money, which will help alleviate poverty and boost Pakistan's economic activities.

Pakistan has entered the industrialization phase and will establish nine special economic zones (SEZs) under CPEC. SEZs are considered significant, especially for industrial development, to attract and facilitate foreign investment, and to generate employment; industrial development provides a firm standing on which any country can expect to gain long-term economic benefits. Here, a question arises: Do we possess an adequate pool of skills to materialize the CPEC initiative as the game changer for Pakistan? Currently, Pakistan needs more skills to benefit from this project. Pakistan needs to identify the basic skills required for CPEC projects to develop human resources that will benefit from CPEC projects in Pakistan (Magsi, 2016). This research is very significant in filling this gap. Many Studies have been done on the CPEC project. The publications focus on energy optimizations, CPEC (Ali, Rasheed, Muhammad & Yousaf, 2018), CPEC, and illegal wealth (Khan, Jawaid & Siddiqui, 2020). CPEC impact on different regions (Butt & Butt, 2015), assessing potential and prospects of CPEC (Javaid, 2016), CPEC and social welfare (Haq & Farooq, 2016). However, However, more studies are needed on the skills needed for human capital development for CPEC projects. The research found that HR development for CPEC neglects and needs to pay more attention to the area of research, which is very significant in taking benefits from long-term projects (Ahmed, Arshad, Mahmood & Akhtar, 2017). Keeping this gap in view, this study attempts to identify the skills required to develop human capital to convert CPEC into a game-changer.

Literature Review

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.

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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 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 studies (Jeong et al., 2015; Ali et al., 2019; Awan, A. M., & Ali, Y., 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 (Mincer, 1974). The ability to work independently, to make decisions about how to complete tasks, and to do so without being directed (Doyal and Gough, 1991). According to Andrews and Higson (2008), 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 (Ullah.W. and Yang.B. 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

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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).

CPEC, Regional Connectivity, and Economics Development:

CPEC connects Kashgar(China) to the Gwadar Pot 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 (Ali, Sabir, Bilal, Ali, & Khan, 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 emphasises 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. A.H., 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. (Chapter 1 in Maclean and Wilson (2009) and NORROG (2003)). 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. Supported by Kazmi (2007), 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.

Year	Highly Qualified	Highly Skilled	Skilled	Semi-skilled	Un skilled	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

Table 1: Profession Wise Pakistani Workers Registered.
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 (Ha & Lee, (2013). 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 (ILO, 2009). 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,2011). More often, jobs are held by someone who does not need to meet the education and knowledge required for the job (ILO, 2011).

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 (Nafukha et al. 2004). Vaitkevicius et al. (2015) pointed out this as 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 (Mahbub-ul-Haq, 1997). 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 (Mahbub-ul-Haq, 1997; UNESCO, 2010). 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 (UKCES, 2009). The term "mismatch of skills" describes the discrepancy between the workers' prior knowledge and the knowledge required by their profession.

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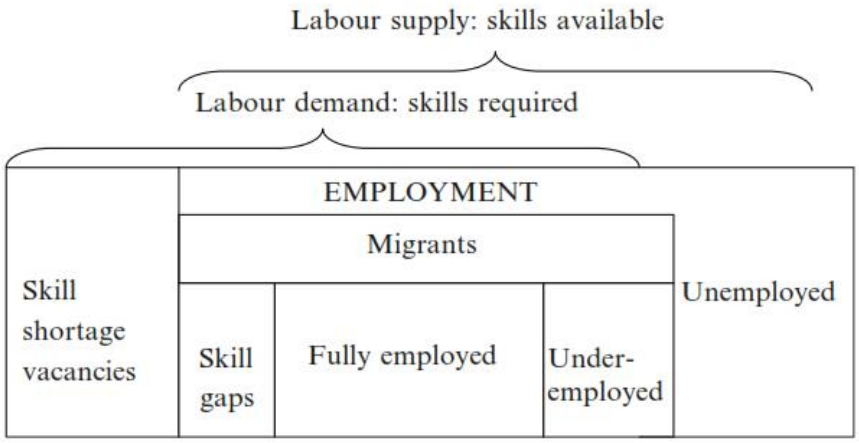


Figure 1: Components of Labour Supply and Demand
Figure Source: UKCES 2010: 40

Countries need varied levels of development skills for different jobs at different stages of economic growth. According to TVET enrollments, UNESCO figures show various nations' tertiary and upper secondary education systems.

Upper secondary				Tertiary (5B)			
Highest countries		Lowest countries		Highest countries		Lowest countries	
Uzbekistan	81.0	Lao PDR	1.1	Lao PDR	60.9	Mongolia	2.4
PRC	42.6	Nepal	1.7	PRC	44.6	Pakistan	5.1
Thailand	39.9	India	1.8	Malaysia	43.3	Philippines	9.6
Indonesia	37.2	Afghanistan	2.7	Singapore	42.3	Kyrgyz Republic	14.7
Kazakhstan	26.0	Bangladesh	8.1	Viet Nam	33.5	Thailand	15.5

Table 2: Countries with the highest and lowest elements at secondary and tertiary levels

Methodology

Data Collection:

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 16witherts 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. The table below lists the experts' biographical information.

S.No.	Institutions	Experts	Sample
1	Karachi Chamber of Commerce (KCCI)	Member Karachi Chamber of Commerce	4
2	UNDP	From Employee	4
3	Government Official	From NAVTTC	4
4	Academic	From an Academic institution in Karachi	4

Table 3: List of Interviewees

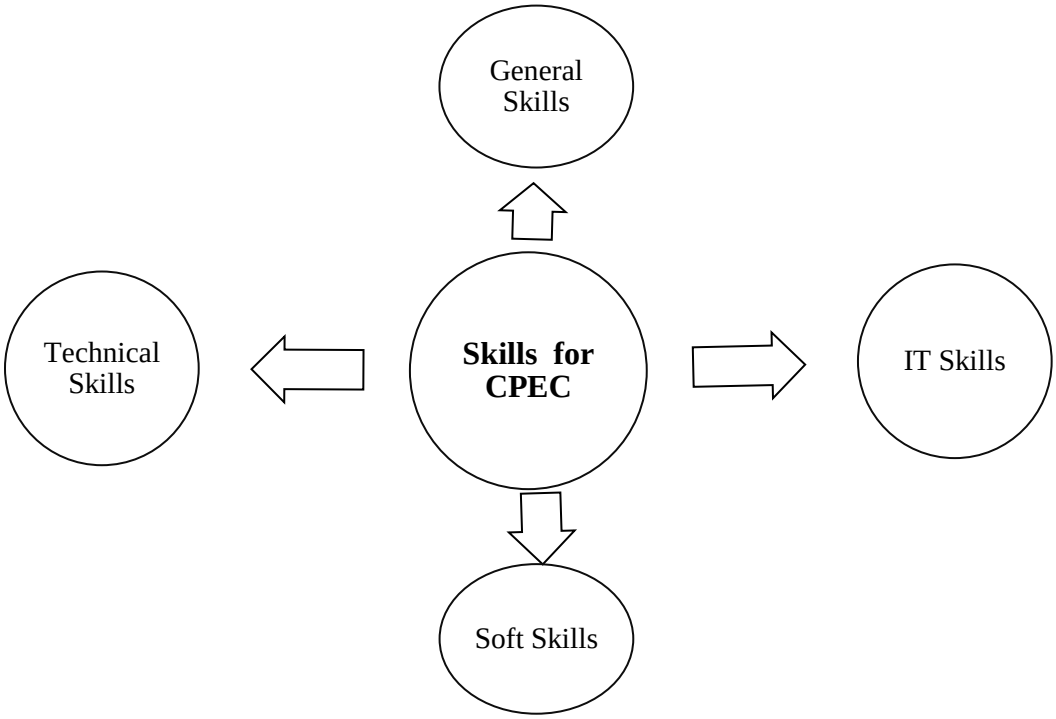
Analytical Techniques:

Data analyses were done in three steps:sation, 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 summarising 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.

Results and Discussions

Skills Required for CPEC:

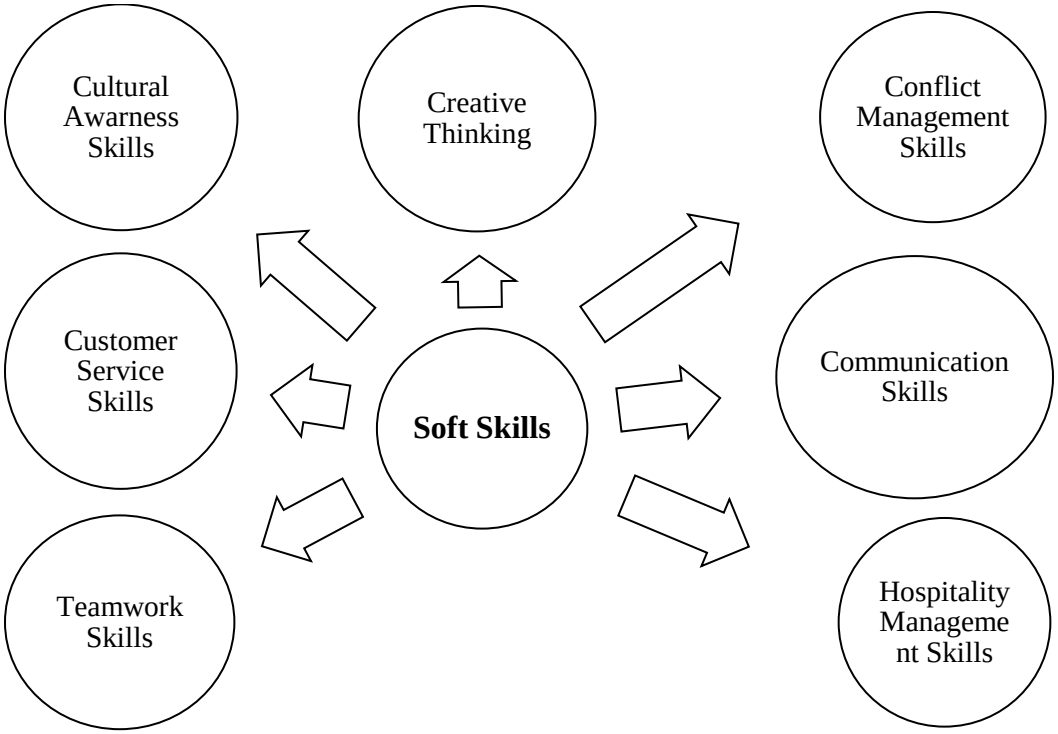
After analyzing the interview data, 22 skills related to CPEC were identified and divided into four categories. These Categories include IT, Technical, Soft, and General Skills. These skills can be seen in the chart below.



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.

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. These skills can also be seen in the chart below.



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 materialise them. This is significant in improving products and business processes in long-term CPEC projects.

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.

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.

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.

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.

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.

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.

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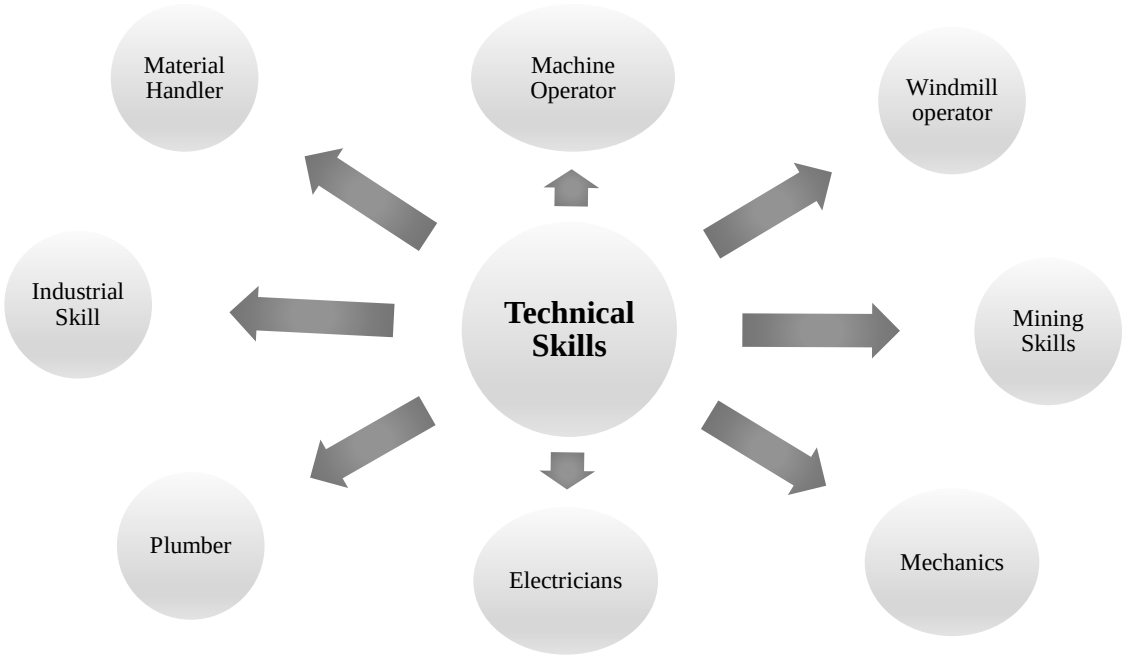
Technical Skills:

Trades skills identified in our study are:



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.

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.

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.

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

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Resolve vehicle-related issues, but they should have practical skills, good communication skills and an excellent knowledge of motor technology.

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.

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.

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.

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.

Information Technology Skills:

Technology is the most essential ingredient for the organisation'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:

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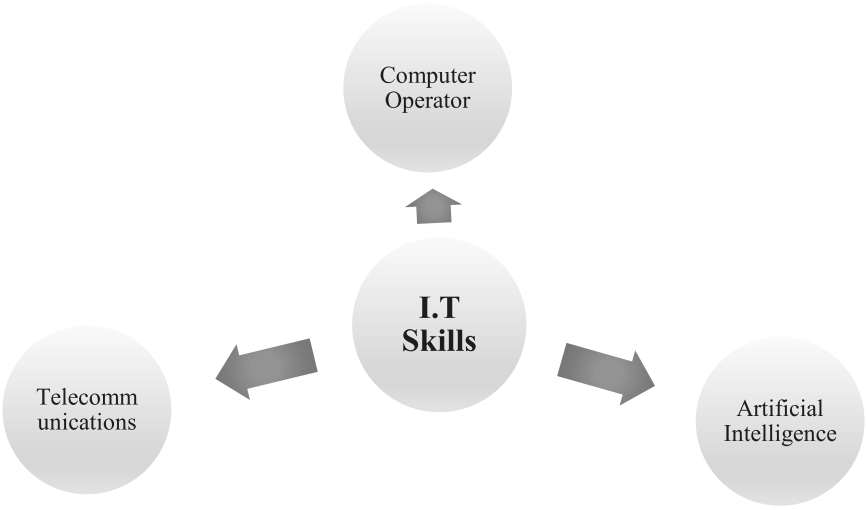

Computer Operator:

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.

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.

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 as everyneededabysation needs.

General Skills:

The fourth category of skills is the General category. This includes Town planning, Transport, financial, and quality management skills. These skills are highlighted in the following chart:

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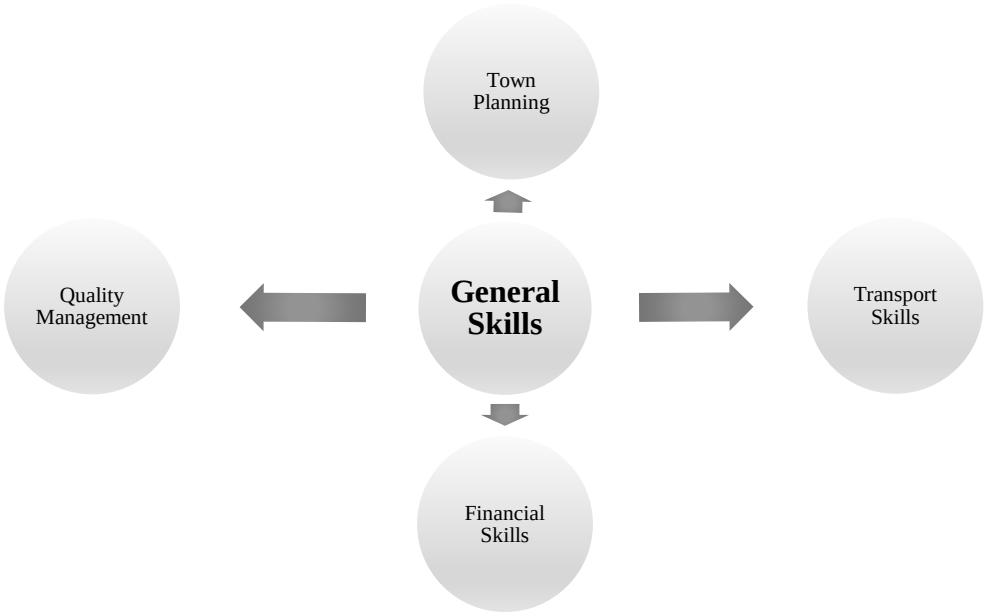

Town Planning:

Planning to construct plants and how to manage urban and rural areas pareas'tpopulationsded. 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.

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.

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.

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.

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To just manufacturing or packaging side. It can also relate to hotels, restaurants, office work, etc. The workforce should be trained in quality management so that projects in the CPEC pipeline can be implemented without any hindrance and with a high-quality standard of work.

Conclusion

Pakistan needs to emphasize its workforce development and upskill its managers, executives, professionals, technical workers, and unskilled labour force. To overcome the skills gap, Pakistan needs state-of-the-art high-level institutes that provide training in international standards. Pakistan needs to make its universities embrace the change, and the academic institutions of Pakistan should also change the course structure in order to meet the demands generated by the huge mega-investment. The government can develop strategies to prepare human capital based on the findings of this research. The government should focus on developing human capital by considering General Skills, Soft Skills, IT skills and technical skills. HRD policies may be revisited to upgrade the curriculum of human capital development for Pakistan Vision 2025 and 2030—rewriting the curriculum for technical and vocational education and building modern technology-equipped technical institute infrastructure. The government may also create specially designed training programmes to close the skills gap. With the help of Chinese TVET institutes, colleges, and universities, Pakistani technical teachers were trained by Chinese trainers to develop modern skills for the CPEC 2030 and remain permanent afterwards to improve the quality of skills and polish the skills in the workforce. Through a qualitative approach, this study outlines the crucial competencies needed for human capital growth in the many sectors covered by the long-term CPEC 2025 and 2030 projects. The quantitative methodology might be applied to construct the talents model for the upcoming study. Only 16 CPEC experts from Karachi participated in this study's interviews; however, the study might have included a larger group of experts from Pakistan's regions where CPEC is being implemented. Additionally, this research outlines the human capital development abilities necessary for all CPEC purposes. Therefore, a future study can be proposed to identify the talents at a specific level in each sector under the CPEC project 2025 and 2030.

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References

1. Ahmed, A., Arshad, M. A., Mahmood, A., & Akhtar, S. (2017). Neglecting human resource development in OBOR, a case of the China–Pakistan economic corridor (CPEC). *Journal of Chinese Economic and Foreign Trade Studies*, 10(2), 130-142.

2. Ali, Y., Rasheed, Z., Muhammad, N., & Yousaf, S. (2018). Energy optimization in the wake of the China-Pakistan Economic Corridor (CPEC). *Journal of Control and Decision*, *5*(2), 129-147.
3. Acemoglu, D. A. (1999). The structure of wages and Investment in General Training. Journal of Political Economy, 107 (3), 539-572.
4. Ahmed, A., Arshad, M. A., Mahmood, A., & Akhtar, S. (2016). Neglecting Human Resource development in OBOR, a case of the China Pakistan economic corridor. Journal of Chinese economics and foreign trade studies.
5. Ali, Y., Sabir, M., Bilal, M., Ali, M., & Khan, A. A. (2019). The economic viability of foreign rail investment: a China-Pakistan Economic Corridor (CPEC) case study. The Engineering Economist. doi:10.1080/0013791X.2019.1668096
6. Ali, Y., Sabir, M., Bilal, M., Ali, M., & Khan, A. A. (2019). The economic viability of foreign rail investment: a China-Pakistan Economic Corridor (CPEC) case study. The Engineering Economist, 1-18. doi:10.1080/0013791X.2019.1668096
7. Alvi, M. (2018). Pakistan's literacy rate stands at 58pc. Retrieved from. https://www.thenews.com.pk/print/309542-pakistan-s-literacy-rate-stands-at-58pc.
8. Ardel, N. A., & Dopson, L. (May ,2013). Future of Hotel Education:Required Skills and Knowledge For Graduates of U.S. Hospitality Programs Beyond the Years 2000-Part one. Journal of Hospitality and Tourism Education.
9. Ashton, D. A. (1996). Education, Training and the Global Economy.
10. Ashton, D. and Davis ,P. (2002). Education as a positional good :Implications for market-based reforms of state schooling . British Journal of Educational Studies, 50(2), 189-205.
11. Asian Development Bank . (2010). Public-Private Partnerships in ADB education lending 2000-2009. Manila,ADB.
12. Asian Development Bank. (2009). Greater Mekong Subregion economic cooperation programme, strategic frame work and action plan for human resource development in the greater Mekong Subregion (2009-2012).
13. Asian Development Bank. (2008). Education and Skills: Strategies for Accelerated Development in Asia and the Pacific. Manila: ABD.
14. Asrar-ul-Haq, M. (2015). Human Resource Development in Pakistan : evolution, trends and challenges. . Human Resource Development International , 1-8.
15. Attewell, P. (1990). What is skill? Work and Occupations, 17 (4), 422-448.
16. Australia, A. C. (2002). Employability Skills for the Future ,DEST, . 3.
17. Australian Industrial Group and Deloitte. (2009). Australian Industry Group. National CEO Survey -Skilling Business in Tough Times.
18. Avineri, S. (1968). The Social and Political Thought of Karl Marx. Cambridge University Press.
19. Butt, K. M., & Butt, A. A. (2015). Impact of CPEC on regional and extra-regional actors. *The journal of political science*, *33*, 23-44
20. Chauvet, P., & Baptiste, A. (2019). Road transport in Latin America: Evolution of its infrastructure and impact between 2007 and 2015. Economic Comission for Latin America and the Carribean.
21. Clarke , L., & Winch, C. (2006). 'Europen Skills Framework?-but what are skills ? Anglo-Saxon versus German concept'. Journal of Education and Work ,19(3), 255-269.
22. De Cieri H, R. K. (2008). Sydney: McGraw-Hill. Human Resource Management in Australia .
23. Deutsche Bank. (2008). The broad basis of societal progress. Deutsche Bank Research.
24. Doyal, L. A. (1991). A theory of Human Need. London,Macmillian .

25. Drucker, P. (1999). Knowledge-workerproductivity: The biggest challenge . California managemnt Review ,41(2), 79-94.
26. Elahi, M. F. (2018). CPEC: Potential game changer for Pakistan and the region. Retrieved from https://pakobserver.net/cpec-turning-point-life-common-man-says-ahsan-iqbal/.
27. Goodman, P., Devdas , S., & Hughson , T. (1988). Groups and Productivit: analysing the effectiveness of self-mnaging team in . Productivity in Organization .
28. Green, F. (1992). On the political economy of skill in the advanced industrial nations . Review of Political Economy , 4(4), 413-435.
29. Green, F. A. (2011). Job Tasks ,Work Skills and the Labour Market. Paris, OECD.
30. ILO. (11 May 2017 - 12 May 2017). skills for employment . International conference on jobs and skills mismatch,Geneva, Switzerland .
31. ILO. (2009). A skilled workforce of strong sustainable and balanced growth : Proposal to G20 leaders for a Training Strategy . Pittsburg G20 Leaders meeting.
32. Iqbal, A. (2017). Long Term Plan of CPEC. Reuters news, Retrived from, https://www.thenews.com.pk/latest/258078-cpec-long-term-plan-complete-document.
33. Javaid, U. (2016). Assessing CPEC: potential threats and prospects. *Journal of the Research Society of Pakistan*, *53*(2), 254-269.
34. Jeong, H. K., (2015). The price of Experience . The American Economic Review, 105(2), 784-815.
35. Kanwal, S., Pitafi, A. H., Pitafi, A., Nadeem, M. A., Younis, A., & Chong, R. (2019). China–Pakistan Economic Corridor (CPEC) development projects and entrepreneurial potential of locals. J Public Affairs, 1-12. doi:10.1002/pa.1954
36. Khan, W. A., Jawaid, S. T., & Siddiqui, D. A. (2020). CPEC: a route for outflow of illegal wealth from Pakistan. *Journal of Money Laundering Control*. https://doi.org/10.1108/JMLC-06-2020-0065.
37. khawar, H., (2018). CPEC and skill development. The Express Tribune.
38. Khwaja, M. A. (2018). Preliminary environmental impact assessment (EIA) study of China–Pakistan Economic Corridor (CPEC) northern route road construction activities in Khyber Pakhtunkhwa (KPK), Pakistan. Sustainable Development Policy Institute.
39. King, K. (2011). Towards a new Global world of skills development? TVET's Turn to make its mark . NORRAG NEWS,46.
40. Koch, J., Gerdt, S.-O., & Schewe, G. (2020). Determinants of sustainable behavior of firms and the consequences for customer satisfaction in hospitality. International Journal of Hospitality Management, 89, 1-11.
41. Le Van, C. (2010). New Technology, Human Capital ,and growth in a developing country. Mathematical Population Studies 17(4), 215-241.
42. Maclean , R., & Wilson , D. (2009). International Handbook of Education for the Changing world of work: Bridging academic and vocational learning .
43. Maclean, R., Jagannathan , S., & Sarvi, J. (2013). Skills development Issues, Challenges, and Strategies in Asia and the Pacific. Asian Development Bank.
44. Magsi, H. (2016). China-Pakistan Economic corridor and challenges of quality labour -force . The diplomatic insight .
45. Maitra , B. (2016). investment in human capital and economic growth in Singapore. global business review, 17(2), 425-437.
46. Maitra, B. (2016). Investment in human capital and economic growth in Singapore. Global Business Review 17(2), 425-437.

47. Maxwell, S. (2010). Using Rubrics to support gradded assessment in a compentency-based environment. Adelaide : NCVER.
48. McGinley, S., Mattila, A. S., & Self, T. T. (2019). Deciding to stay: A Study In Hospitality Managerial Grit. JOURNAL OF HOSPITALITY & TOURISM RESEARCH, 1-12. doi:10.1177/1096348020909537
49. NAVTTC. (2018). National Vocational and Technical Traning Commission . Government of Pakistan.
50. NORRAG. (2003). Debates in Skill development: Skills for life and work : Geneva , Working Group for International Cooperation in Skills Development .
51. O'Connor, D. A. (1999). Economic Opening and demand for skills in developing countries: A review of theory and Evidence (Technical paper 149). . Organisation for Economic Co-operation and Development, Development Centre, Paris .
52. OECD. (2005). Measuring the social outcomes of learning . Paris .
53. Powell, M.F. a. (2009). Employment and and skills strategy in Southeast Asia setting the scene . Paris ,OECD.
54. Rana, A. M. (2016). Making the most of CPEC. Dawn News , http://www.dawn.com/news/1265737/Making-the-most-of-CEPC.
55. Raza, H. (2018). China Pakistan Economic Corridor (CPEC): The counter balancer of momentous energy crisis in Pakitan. Advances in Social Sciences Research Journal, 6(7), 172-180.
56. Second belt and Road forum . (2019). Retrieved from https://tribune.com.pk/story/1960468.
57. Siath, A. (1989). Macro-economic issues in international labour migration. A review ISS working Paper Series/Gemeral Series , 48-54.
58. Siddiqui, A., (2017). The Human Capital and Economic Growth Nexus. In East and South Asia, 49(28), 2697-2710.
59. skill-development-in-pakistan-among-chinas-top-priorities. (December,2018). https://profit.pakistantoday.com.pk/2018/12/19/.
60. Strategy for Technical and Vocational Education Training (TVET). (2016-2021). https://unesdoc.unesco.org/ark:/48223/pf0000245239.
61. Suh, S.S. 2. (n.d.). Footmark of Korea Vocational Traning System-Focus on behind story of systematization process . The Korea Chamber of Commerce .
62. UK Commission for employment and skills (UKCES). (2009). Ambition 2020: world-class skills and jobs for the UK. England .
63. Ullah, W., & Yang, B. (2018). Investment in human capital and economic growth in Pakistan: a time series analysis for CPEC project . journal of account and financial management.
64. Ulrich, D., Younger, J., Brockbank, w., & Ulrich, M. D. (2013). The state of the HR profession . Human Resource Management, 52 (3), 457-471.
65. UNESCO-UIS. (2010). Global education digest 2010: comparing education statistics across the world . Montreal : UNSCEO Insitute for statistics .
66. Warhurst, C. a. (2007). "Who,s Got the Look?" Emotional , Aesthetic and Sexualized Labour in Interactive services. Gener , Work and Organization ,16(3), 385-404.
67. World bank. (2010). Stepping up skills for more jobs and higher productivity.
68. Zaman , D. A. (March 08,2019). Cpec Related Skill Development Challenges & Way Forward For An Inclusive Employment Strategy. http://www.cpec-related-skill-development-challenges-way-forward-for-an-inclusive-employment-strategy.