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The resilient economic impact of CPEC and future of MNCs: Evidence from Pakistan

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This article examines the developmental collaboration under CPEC to see if the stated scenario of developed-country progressive cooperation with developing countries holds true on the ground. The economic development of countries is determined by their economic relationships with other countries including megaprojects like CPEC which interlink countries geographically, socially, and economically. The present study has adopted a mixed method technique and the data for this study was gathered using questionnaires and one-on-one interviews with respondents. Furthermore, Pearson correlation, reliability, and KMO were used for analysis. The findings revealed that except for GDP growth and poverty alleviation, all dimensions of resilient economic development such as infrastructure development, investment, economic growth, employment, transportation and knowledge transfer initiatives have positive relationship with CPEC development. Our findings reveal that the GDP and welfare of both Pakistan and China will improve by a maximum of 0.3 percent as a result of transportation innovation. Moreover, the results of the study positively validate the hypothesis. These findings provide policymakers with guidelines for establishing effective policies to support the mega-plan CPEC which will boost global economic growth in the region.

KEYWORDS

CPEC, Pakistan, economic corridor, economic development, infrastructure innovation, transportation

1 Introduction

Nations do not survive and grow in isolation. Exchange between different countries plays a significant role in the financial enhancement of any nation. In the present-day world, trade comprises over 19.09 trillion US dollars (2018) where natural borders hold little more importance than transnational associations. In this sense, China's USD 62 billion direct investment in different CPEC projects is widely seen as a substantial contribution to modernizing Pakistan's regressive infrastructure (Khetran and Saeed,

2017; Bahoo et al., 2018). A prominent Chinese project named "Silk Road Economic Belt and the 21st-century Maritime Silk Road", also known as the "Belt and Road Initiative" (BRI), is a visionary project of joining likely markets and accessing assets that will represent China's interface across Eurasia. As one of the six land-based corridors of the Belt and Road Initiative (BRI), CPEC is seen to be a unique flagship project that is only in one nation; Pakistan (Menhas et al., 2019). The China-Pakistan Economic Corridor is a significant part of BRI. It can be seen as the "symbol of a new era of connectedness and integration" for Pakistan, as it will not only transform the economic growth of the region but Pakistani people's well-being. (Mehdi, 2020). In other words, acceptance of CPEC project is linked to perceived benefits, including business opportunities and regional growth (Kanwal et al., 2020). According to another research, authors noted that local people's perspectives on quality of life, greater economic possibilities and poverty reduction have all altered as a result of CPEC projects, (Saad et al., 2019). Alternative trade and energy channels as well as easy access to the Middle East, Africa and Europe are projected to benefit China. As a result, CPEC is a multifaceted project that; 1) provides China with the shortest access to the 21st Century Maritime Silk Road in the Indian Ocean (Roy, 2019; Safdar and Zabin, 2020); 2) develops, connects and integrates regional economies and markets (Faisal, 2019; Mirza et al., 2019; Hussain, 2020; Khan et al., 2020; Yu et al., 2020); 3) secures Pakistan's status as a vital BRI participant and 4) offers China with a secure economic corridor in the case of conflict in South China Sea (Hali et al., 2014; Gordon et al., 2020).

In 2013, China and Pakistan agreed to a milestone agreement for CPEC, wherein China offered to contribute 51 billion US dollars to construct an energy and transportation network in Pakistan. Islamabad's goal with CPEC is to upgrade Pakistan's infrastructure in order to spur economic growth (Mardell, 2020) while also strengthening connections with an important regional player. As Ramay (2020) pointed out Pakistan has limited long-term potential to reduce poverty so, this multibillion-dollar initiative has the potential to alter the people and country's fate. This was an official order to build up a network between the two nations while tending to the increasing demand for energy in Pakistan, which is why this is a fundamental contribution towards any potential industrialization attempt. Pakistan is expecting to use this multibillion-dollar investment for the enhancement of its industrial and economic limits, backed by a supply of large amounts of energy. CPEC holds significant importance in building Pakistan's economy. It will connect Gwadar Port with the Chinese province of Xinjiang through Kashgar by two routes: Eastern and Western Pakistan. In a broader sense, CPEC connects China to the Middle East, Africa and Europe through Gwadar Port while the corridor connects Pakistan to Central Asian countries; Russia and Europe through western China (Ali et al., 2019). These routes will help in the socio-economic development of less developed areas of Pakistan. Therefore, the planned routes would connect Baluchistan, which has the worst economic development and infrastructure, to the center of future business in South Asia, where the deep-sea port of Gwadar will play a big role (Rehman, 2019). Additionally, it will also ensure productivity and infrastructure development in these areas on a priority basis. Energy and transportation infrastructure construction have remained at the top of the priority list (Zhang et al., 2017) because they will help the host nation overcome its chronic energy problem (Sun et al., 2020) and outdated transportation and communication systems along with the culmination of GDP ratio (Kanwal et al., 2020).

Among the countries around the world, China is ranked as the second-biggest consumer of energy and its economy also enjoys the same rank however, it imports oil to meet its needs and the protection of this supply chain is of very significant importance to the country (Leung, 2011). 83% of oil in China comes through the sea route, of which 77% is operated by the Strait of Malacca, which may possibly act as a gridlock for China (BP Statistical Review of World Energy, 2014). China can only resolve this issue by approaching Arabian Sea for which it needs to reach out to Pakistan (JUKOKO Part-2, 2017). Therefore, CPEC is a project that will connect the city of Kashgar to Gwadar (Karachi, Pakistan) through a network of roads between these two cities in Pakistan and China (Li et al., 2017). CPEC is expected to not only open up new trade and commercial opportunities between Pakistan and China but also to serve as a powerful showcase of how the B&R Initiative could be executed (Khattak, 2016). Kashgar is a land of rich economic opportunities and possibilities to reach out to the markets of Pakistan, Afghanistan, Iran, India, Uzbekistan, Kyrgyzstan, and Kazakhstan by road (Ahmad, 2013).

For the time being according to Khan and Khan, (2019), China's "opening up strategy" to the East and West which, coincides with BRI, redefines China's geopolitical relations with other countries. Similarly, this strategy will hasten the establishment of the Silk Road Economic Belt which will connect 64 Asian, African and European countries. China outlined specific objectives for BRI including the establishment of a community of countries along the new Silk Road with common interests, security and destiny. Therefore, CPEC must be treated as a project rather than a road as it will be the driving force behind increasing the amount of connectivity in Pakistan through road development, railway optimization, pipeline connectivity, fiber-optic connectivity, and special economic zones. (Hussain and Ali, 2015). As Southeast Asia is regarded as the world's most isolated region, CPEC project offers Pakistan a huge opportunity to strengthen its ties with other countries in the region as well as the rest of the world (Ma and Li, 2015).

A strategy carried out for survival in the current competitive business atmosphere for the business class is to establish strategic partnerships with other business organizations which have the same or diverse goals (Frey Ridgway, 1997). Knowledge

preservation and transportation is a key concern for all business holding companies and managers. This is why the focus is to design new revolutionary "techniques and systems" so as to maintain a good conveyance of knowledge (Davenport and Prusak, 1998). In this way, the execution of knowledge transfer ought to be the most notable consideration especially for the institutions dealing with global markets. Numerous organizations in China have recently developed so quickly that they are starting to become MNCs. Furthermore, there are only Chinese MNCs that are willing to share knowledge and technology transfer between their subsidiaries functional in Pakistan. CPEC also holds incredible significance for two reasons: firstly, for the establishment of Chinese MNCs in neighboring nations and secondly, for the rapid growth and development of Chinese MNCs.

1.1 Problem statement

As part of this study, we tried to discuss issues in the China-Pakistan Economic Corridor (CPEC) in the same way that we tried to show that it is important to improve not only the modern limits and industrial profitability of Pakistan and China but also the practical and resilient economic gains from CPEC, which depend on the powerful limited working of Pakistan. It is further clarified that gains from this multi-billion-dollar project are only viable upon its successful completion. Furthermore, we discuss how it is required to present current innovative knowledge and training to the local labor force to use modern techniques for production through effective skill development, technology transfer and global business improvement.

1.2 Significance of the study

The problems mentioned above need time to be addressed and develop an insight into the theoretical and practical effect of CPEC investment on Pakistan and the region. The findings of the study will redound to the economic gains from CPEC. Consider how the investment will effect Pakistan in future and what policies Pakistan and China need to address in the outside world. The study further intends to determine what the future of MNCs will be and what policies companies need to adopt while entering a new region. Finally, the study aims to find out how knowledge and technology transfer will happen under the CPEC project.

However, the research focuses on a variety of important research issues, such as the resilient economic impact of the CPEC corridor on Pakistan and the future strategy of MNCs, summarized in the following 5 questions:

1) What will be the social, economic and political impact of CPEC investment on Pakistan in the coming years?
2) What are the commitment strategies of local governments in dealing with Chinese counterparts (concerning the CPEC Corridor)?
3) What policies do governments need to put into place or tailor to motivate other countries to be part of CPEC to attract more FDI inflow?
4) Are we expecting MNCs' relocation or setting up subsidiaries in Pakistan under CPEC investment? If yes, under what circumstances and strategies?
5) Are we expecting Gwadar Port and SEZs to be the economic hub of CPEC investment? If yes, what and how will its future impact be?

2 Literature review

2.1 CPEC and Pakistan's interest

The location of the land of Pakistan is very important and ideal with respect to economic, political and energy interests for the whole world (Meixell and Norbis, 2008). China-Pakistan Economic Corridor (CPEC) is a distinct game-changer for both nations. The successful consummation of this project will boost the economy of Pakistan and will also make it one of the quickest developing economies in the local region as well as around the globe, which is one of the reasons Pakistan is taking an unmistakable interest in the convenient culmination of the task. CPEC, a significant trade route added to the Belt and Road Initiative (BRI), will be a trade and commerce channel that will not only connect Pakistan to China but will also open the door for a land course to the entire South Asian Regions. The project will also create an infinite number of "economic opportunities" and will "host other positive externalities" (Pakistan Observer, 2018). Pakistan can get benefits from this new trade route especially by paying attention to "trade-opportunities" and their enhancement between Pakistan and China. Pakistan, due to its pivotal position on the world map, provides a transportation route for trade between non-coastal courtiers, Central Asian states, Afghanistan and the global market through the Arabian Sea (Anwar, 2011). The extension and the advancement of the Gwadar exceptional monetary zone under the (B&R) initiative play a significant role in CPEC highlighted ventures. Once the Gwadar port is established completely, it is estimated that Pakistan will become a trade center for the surrounding countries due to its "duty-free economic zone" (Bhutta, 2015). Pakistan will have a phenomenal increase in its trade with China and other countries, not because of the two-sided aspects of CPEC but due to the local dimensions of this project (Iftikhar, 2016). Southeast Asia is regarded as the world's most isolated area and CPEC project offers Pakistan a significant opportunity to strengthen its ties with other Southeast Asian countries as well as the rest of the world (Ma and Li, 2015).

As this project includes the development of several economic booster projects such as the establishment of industrial parks, the construction of energy projects and the restructuring of the network of roads and railway lines, airports, hospitals, fiberoptic, education and technical skill institutes, industrial parks and special economic zones, this project will lead to employment and residents of Pakistan will take ownership of these projects. While highlighting the cordial connections on CPEC, which contributes to Pakistan's development and economic progress, a major boost is related to the economy of Pakistan (Raza et al., 2018; Zafar et al., 2016). Pakistan could have 4 million new openings. If Pakistan completes the project and supports it with reforms, trade will grow by 9.8 percent.

The fluctuation in Chinese investment, business and workforce sprouting out beyond the border presents great opportunities for Pakistan. As a partner, Pakistan plays an important role in the manifestation of the Belt and Road Initiative (Masood, 2015). The advantageous aspects of CPEC will not limit themselves just to strong trade and economic cooperation between the two countries but will also extend their fruits of benefits to cumulative cooperation under the Belt and Road Initiative (Khattak, 2016). The positive outcomes of CPEC will also be exhibited by the expansion in GNP, GDP, exports and foreign exchange etcetera because of the inflow of businesses, tourism, employment opportunities, warehousing and transfer of knowledge and technology.

2.2 CPEC and China's interest

Trade beyond the boundaries of a country plays a significant part in the economic advancement of any nation. In the 21st century, China proposed a visionary project, the "Belt and Road Initiative (BRI)", to connect with likely markets and access resources. The China-Pakistan Economic Corridor (CPEC) is of core significance in the BRI project. It is a 3000-km long road passage for transportation in order to connect Kashgar (China) with Gwadar (Pakistan). Currently, every country is trying to boost its economy by inventing "short trade routes" to minimize trade costs and conserve time, that is, maximize trade in less time. Economic links established by the CPEC assist to cover time and cost, making it an excellent project management tool (Alam et al., 2019; Basit, 2019). That is why a lot more is invested in the enhancement of land route infrastructures such as roads and railways according to modern day techniques and requirements. Such strategies help the country's economies culminate by lowering the cost of transportation and saving time (Alam et al., 2019). The shipping industry holds a key position internationally because large-scale import and export are carried through it and according to an estimated value, 80% of the trade is possible around the globe through this industry (Bernhofen, et al., 2016; UNCTAD, 2015). This transportation is only possible for China by approaching the unfathomable Arabian Sea via Gwadar because this route to global markets is the shortest and cheapest of all possible options (JUKUKO, 2017). The construction of Gwadar has become a necessity for China because it needs to protect its energy supply chain from the Gulf and keep an eye on the US and Indian naval activities happening in the Indian Ocean (Kalim, 2017). As a result, the CPEC trade route will become the most straightforward and secure route to China, reducing shipping costs and time (Shaikh et al., 2016).

The Chinese Navy in the Gulf has some political reasons as well which are not limited to preventing Indo-US dominance in the Indian Ocean (Nixon, 1992), but also to achieve a dominant naval power in the Gulf region (Yun Liu, 1972; Yeuh et al., 2016). The deepest port of Gwadar retains 'geo-strategic and geo-economic' interests for China before the construction of Gwadar port, as Sering states,"... China always found its security interests compromised due to its inability to monitor the Persian Gulf and the Indian Ocean region" (Kalim, 2017). This port will facilitate China's expansion of trade with Central Asia, the Middle East and Africa with the benefit of a decrease in 2500-km sea distance (Mumtaz, 2009). Due to the successful completion of the CPEC route, China will receive a profit of more than $70 billion (these calculations were made using trade data from 2016). It is anticipated that substantial benefits will be introduced to both countries after the completion of all infrastructure and changes in the mode of transportation from sea to land.

2.3 CPEC and its implication for europe

BRI is a master plan to connect China with the rest of Asia, the Middle East, Africa and Europe. BRI will pass through 71 countries around the world with the promise of establishing new opportunities and improvement in infrastructure. The process entails constructing infrastructure through these regions, boosting economic growth and ensuring a win-win strategy among the participants (Hali et al., 2014) also incorporates the Mainland Area and the Maritime Area. The Mainland Area is called "The Silk Road Economic Belt" which will increase and expand road routes through the construction of an "Eurasian Land Bridge" and will also have various economical passages to join China with Russia, Mongolia, Europe, the Middle East and Asia. The Maritime Area, also known as "21st Century Maritime Silk Road," will connect China to Europe via South China Sea and Indian Ocean (China-Britain Business Council 2016). The total cost of BRI is equal to 12 times the Marshall Plan which is approximately 120 billion US dollars currently (Jetin, 2017).

The influx of two economic corridors under BRI; the New Eurasian Land Bridge and China-Mongolia-Russia Economic Corridor (CMREC), claims to promote trade between Mongolia and its neighbors as well as facilitate Mongolia's

road passages of the European Union and sea ports in Asia (Graceffo, 2020). From a European point of view, the most important infrastructural ventures of the BRI are railroads and ports. The interests of BRI in the railroad and port framework will surely influence exchange relations between China and Europe by abating transportation costs and expanding exchange volumes. The new arena of land routes, specifically roads, will enhance trade with European countries with 10% decrease in railways and air traffic while the maritime costs will heighten trade by 2%, 5.5%, and 1.1% respectively (Garcia and Xu, 2016). BRI offers great potential opportunities to European-based business firms. Partnerships between Chinese and European companies can support infrastructural development in the region and collaboration on relevant projects in developing countries. As a result, new markets will emerge across the BRI and new methods of logistics and supply chain will change the way goods are transported around the world (China-Britain Business Council, 2016). The effective business models of BRI are joint ventures, technology transfer, knowledge transfer, foreign investment, public-private partnerships and changing supply chain methods. These models will benefit EU companies by allowing them to efficiently sell their products and services to developing countries.

2.4 CPEC and trade significance

The China-Pakistan Economic Corridor is a revolutionary project that will alter the whole trade structure of China, Pakistan, South Asia, Central Asia, Africa, Europe, and the whole world. China's oil and petrol consumption is a big challenge as the country imports it expensively through Shanghai Sea routes. Therefore, China wants to adopt a strategy based on mutual benefits with Pakistan that can save it from "economic stagnation" and improve its "revenue and earnings." China meets its oil demands by transporting 80% of it from the Middle East through the Malacca Strait. This route is about 16,000-km in distance, which will be reduced to 5,000-km in distance through CPEC and Gwadar Port (Ali, 2015). This long-term project of CPEC, in this way, will help both countries to get a new, shortest and most time-conserving way of transporting raw materials and oil from the Middle East (Changqian, 2015). Consequently, all of this will directly improve the economy of both nations and the living standards of locals. Pakistan's import rate from China has increased in the last few years which is disproportionately as compared to exports from the country. Imports from China were approximately 64 million PKR in 2015 and approximately 61 million PKR in 2019, compared to exports to China of 31 million PKR in 2015 and approximately 42 million PKR in 2019 (Figure 1).

The trade deficit between the two countries in the last few years has been steadily increasing as shown in the Table 1 below. Being a developing nation with a trade imbalance is unavoidable. However, we must take the drop in exports to China seriously.

2.4.1 Trade intensity index

The trade intensity index has been used to analyse whether the value of trade between Pakistan and China is less or more than that of a share of the world trade. Hence, the trade intensity index can be defined as "the ratio of one country's export to the country of interest and total exports of a country to the world divided by the ratio of world exports to the country of interest and total world exports" (SME Observer, 2017).

$$\text{Trade Intensity Index}\left(TII_{xy}\right) = \left(\frac{\left(\frac{E_{xy}}{E_{xw}}\right)}{\left(\frac{E_{wy}}{E_{w}}\right)}\right)$$

Where.
X = Pakistan.
Y = China.
E_{xy} = export of country x to y.
E_{xw} = total export of country x to world w.
E_{wy} = world w exports to country y.
E_{w} = total world export.

The index has a value between 0 and +. Values above 1 show a strong trade relationship with the country of interest. A value of less than 1 means that trade flow is smaller than expected. The trade intensity index in 2018 was 0.963, which means that export intensity with China is less than expected. It is expected that the value of trade intensity in 2021 and 2022 will be 1.063 to 1.188 between China and Pakistan. As a result, the export intensity between blood brothers will be slightly higher than anticipated. According to the expectation and future assumption, we will see an increase in trade intensity due to CPEC investment between China, Pakistan and neighboring countries. The natural trading partner theory asserts that countries learn to trade more with neighboring countries. Table 2 shows Pakistan's export value to China.

3 Conceptual framework and hypothesis

3.1 Effect of global managerial alliance (China and Pakistan) on local knowledge development and market performance (Pakistan)

For a foreign subservient to attain success in such a competitive environment, the headquarters' knowledge is essential, as suggested by the literature produced on MNCs' knowledge management (Fang and Zou 2010; Qin et al., 2016). Moreover, well-grounded literature has revealed that the company's performance is dependent on the headquarters' knowledge to a greater extent, having a positive

TABLE 1 Pakistan trade deficit with China in US$ (source: trademap.org).

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
4.01	2.78	3.81	4.79	3.60	3.43	7.67	9.08	12.09	14.62	13.00	10.20	10.60	17.70

TABLE 2 Pakistan trade intensity index with China (source: tradingeconomics.com).

Pakistan-China	2012	2013	2014	2015	2016	2017	2018	2019
Trade Intensity Index	1.081	1.026	0.882	0.861	0.774	0.860	0.963	0.814

influence on it (Gupta and Govindarajan 2000; Lee and MacMillan 2008). Market innovation brings new and diverse consumers, competitors, business collaborators and practices, and their effective management necessitates proper organizational knowledge and skill sets (Prusak, 1998; Riesenberger, 1998). Considering the subservient life, not only its local ecosystem but besides its MNCs where headquarter knowledge transfer happens in different business environments, we contend that an increase in global business alliances and global political alliances under BRI intensify the favorable effect of headquarter knowledge transfer (China) to local business ecosystem (Pakistan) in the following ways.

To begin with, a subsidiary with a strong worldwide managerial alliance that delivers private and relevant data about the local company environment may appear strange when compared to the information it receives from headquarters. Meanwhile, the global managerial alliance might change the way international subsidiaries' accounts are handled (Pakistan) and further encourage the subordinate to extend the headquarter knowledge base (China) while increasing the useful headquarter knowledge to the ecosystem.

Second, a foreign subsidiary's alliance with local authorities and organizations is critical (Pakistan). In an MNC ecosystem customs and standards are important for an alliance to perform well, the foreign subsidiary is more likely to shape its market practices around standards. This makes the knowledge of the headquarters more important to the performance of the local market (Figure 2).

Hypothesis 1—A subsidiary's 1) global business alliance and 2) global political alliance fortify the favourable effect of headquarter knowledge transfer in local business ecosystem.

3.2 Headquarter knowledge transfer in MNCs and local knowledge development

Apart from headquarter knowledge transfer, we consider local knowledge procurement and the host country's knowledge an essential source to continue an outside subsidiary in its local market performance. This aspect can be explained on a theoretical basis through a "knowledge-based view". The view elaborates on the technicalities involved in the growth of a company in order to gain a pace in market competition, which can be done by "creating and learning know-how." The knowledge-based view is more focused on the elements important in the process of "knowledge creation, transfer and acquisition" happening in the organization (Conner and Prahalad, 1996; Grant, 1996). This puts the term "knowledge learning" in the limelight to evaluate in detail the process of acquisition involved in knowledge transfer and the role of co-partnership and strategic alliances in the process of knowledge transfer. Different from their roles that compel the effect of headquarter knowledge transfer, we contend that the global managerial alliance fills in an asset that fortifies the culminating effect of local knowledge acquisition. The global managerial alliance can give away local alliances, making them more likely to arrange knowledge from their host countries and local business ecosystem. Since, some freely accessible information may not be handily comprehended by outside firms, stronger alliances with local firms encourage the outside subsidiary to decipher such information in a more important and significant way (Figure 2). Hence, we hypothesize that global managerial alliance increment, and, social and cultural embeddedness reinforce the positive effect of local knowledge acquisition on subsidiary performance.

Hypothesis 2—The presence of internal mechanisms and absorption capacity in a subsidiary is positively related to the process of knowledge transfer acquisition and dissemination.

Hypothesis 3—The higher the absorptive level of a subsidiary's acquisition and dissemination, the higher the level of subsidiary performance.

4 Methodology

4.1 Research design

The mixed method technique is applied to this study which included both qualitative and quantitative methodologies. Assuming that a single data type would be insufficient for the study's goals (Creswell and Clark, 2015), different dimensions (attitudes and interaction practices) were investigated using

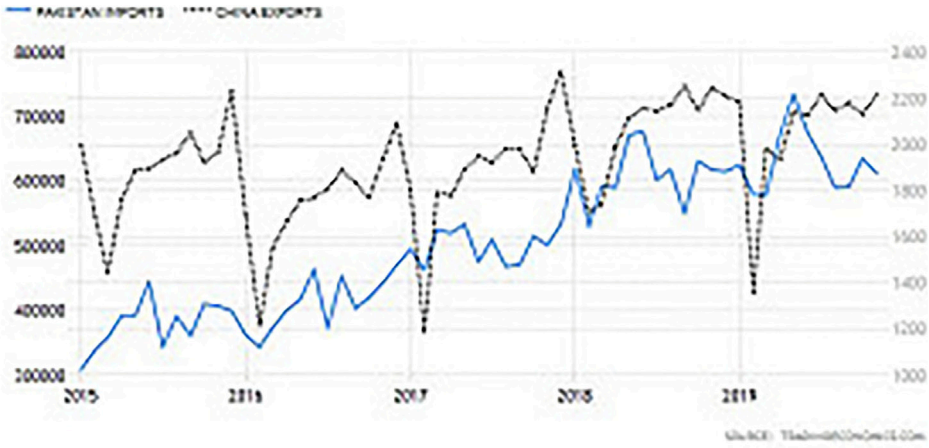

FIGURE 1
Trade balance between Pakistan and China (Source:tradingeconomics.com).

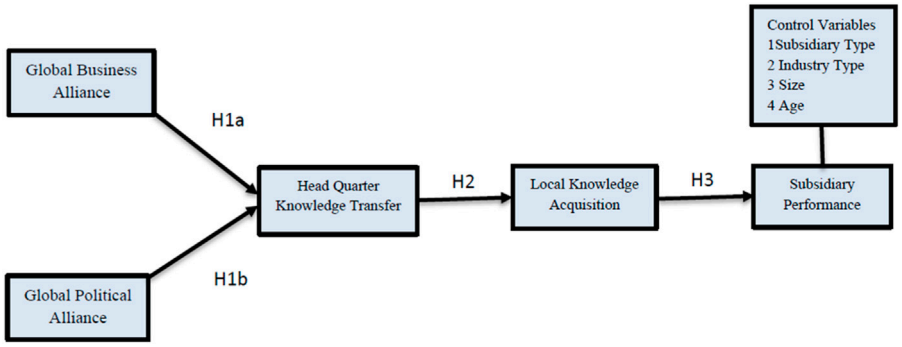

FIGURE 2
Conceptual framework model of knowledge transfer.

different approaches (quantitative and qualitative) (Teddlie and Tashakkori, 2009), with the goal of obtaining complementary data (Morse, 1991). Quantitative data helped to highlight overall tendencies while qualitative data helped to conduct an in-depth analysis of phenomena-related experiences from the inside (Creswell, 2015).

Based on the background of the problems raised in the current investigation the approach is qualitative and quantitative. Qualitative data is obtained from interviews and group discussions with stakeholders (in our case, MNCs, agencies, and enterprises) between the two countries. While quantitative data is obtained from importers and exporters, workers, PhD students in Management Science and Economics and business-oriented People working in China and Pakistan. Authors have selected participants as students and professionals due to their centre of attraction as in economic power (Kugelman and Hathaway., 2011; Sathar et al., 2013). The participants (PhDs and professionals) are selected on the basis of their connectedness to the project and the knowledge they have while evaluating one factor over another or the impact the project may have in the coming years.

4.1.1 Research participants and location

The investigation for the research goals is carried out in the south-west of China and throughout Pakistan. The location was selected because of synchronization between the research goals and the factors like accessibility to a selective field of information and the geography of the CPEC project. The eligibility criterion for the participants in the quantitative method was selected because of basic information regarding the project and its overall influence on community and geography. An e-questionnaire link was sent to all the selective students (n = 350). The rate of responses is 100% due to the nature of the quantitative methodology.

The eligibility criterion for the participants in the qualitative method was included in the study on the basis of their availability

TABLE 3 Cronbach's alpha reliability test.

Reliability statistics		
Cronbach's Alpha	**Cronbach's Alpha Based on Standardized Items**	**No of Items**
0.714	**0.722**	**15**

Value 0.722 representing alpha based on correlation among items. Value 0.714 representing covariance among items.

TABLE 4 Kaiser maier olkin and Bartlett's test.

KMO and bartletts test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.759
Bartlett's Test of Sphericity	Approx. Chi-Square	643.074
	Df.	105
	Sig.	0.000

and expertise. The initial results obtained from the qualitative stage (n = 24) showed that the participants include project managers, engineers, businessmen and workers at CPEC infrastructure project.

4.2 Data analysis

After gathering the required data an array of evidence was interpreted and analysed. The analysis and assessment of qualitative research is usually done by means of interviews and group discussion. While SPSS was used to perform the quantitative transformation of raw data to decipher conclusions. In this study, the survey method we followed has been adopted and modified from already published previous literature (Delamere et al., 2001; Yolal et al., 2016). All the survey questionnaires were measured with 5 points Likert-Scale from strongly disagree to strongly agree. As five-point Likert-Scale is widely use by previous scholars. The study use an online survey to collect data from Southwest China and the entire Pakistan. To check the reliability first we conducted a pilot study on 50 sample questionnaires in November and December 2020. In total 374 responses were received in approximately 1 month's duration. As the process was online, there was no chance of missing data.

4.2.1 Reliability tests

Cronbach's Alpha is used to measure the reliability of the variables in order to check whether the survey organised is reliable or not. All the variables are measured with a 5-point Likert Scale with 1 strongly disagreeing and 5 strongly agreeing. As the minimum acceptable value of Cronbach's Alpha is 0.6 and the value that is concluded for all the variables of the study, is higher than the minimum acceptable reliability, which is 0.714. Therefore, it is assumed that the investigation is reliable and it can be used for the study (See Table 3 for further detail).

4.2.2 Kaiser-Meyer-Olkin and Bartlett's test

Kaiser-Meyer-Olkin and Bartlett's Test (KMOB) helps in estimating the reasonableness of the information for executing the factor investigation. This test empowers the analyst to estimate the investigative ampleness of every factor in the model. The KMO test says if the value is between 0.7 and 0.8, it means the value is good. The KMO value is 0.759, which is very good and represents excellent and positive information measures. Based on Bartlett's test, the sig value is 0.000 which is less than the required value. Hence, it means the positive hypothesis chosen in the study dismisses the null hypothesis and the variables do corelate with each other (See Table 4 for more detail).

5 Results

Reliability analysis was performed through SPSS-26 to check the stability and internal consistency of the items by Cronbach's alpha, which is the best and most widely used technique for measuring reliability statistics (Lu et al., 2007). All indicators of the study were tested for reliability; Cronbach's alpha was found to be 0.714, and the lowest acceptable reliability in the social sciences is 0.7. (Hair et al., 2010). The maximum likelihood approach with promax rotation was used to run EFA to create variance factors. Five factors were identified, which accounted for 56.54 percent of the variation as shown in Table 5. The Kaiser–Meyer–Olkin measure of sampling adequacy showed a decent sample size of 0.759, and the Bartlett's test of sphericity was significant at $p < 0.000$. CFA was conducted on 23 items (four for investment, three for economic growth, three for infrastructure development, three for employment, two for poverty alleviation, two for transportation, three for knowledge transfer, and two for GDP. On the basis of low standardized loading, modification indices, and error variance, seven items were removed from the analysis. In the CFA, we kept a total of 15 indicators with eight constructs, as shown in Table 6). Moreover, AVE ranging from 0.61 to 0.79 exceeds the suggested value of 0.5, as shown in Table 7.

6 Discussions

The BRI's advance-thinking policies have brought Pakistan and China closer together allowing them to take advantage of new opportunities in the host environment through CPEC (Huang, 2019). The viability of CPEC's financial gains, infrastructure development, producing opportunities, decreasing people's poverty levels, increasing GDP in general,

TABLE 5 Explained variance test.

Total variance analysis

Items	Initial eigenvalues			Extraction sum of squared loadings		
	Total	% Of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.310	22.067	22.067	3.310	22.067	22.067
2	1.637	10.916	32.983	1.637	10.916	32.983
3	1.309	8.724	41.707	1.309	8.724	41.707
4	1.191	7.941	49.648	1.191	7.941	49.648
5	1.034	6.894	56.541	1.034	6.894	56.541
6	0.930	6.199	62.740			
7	0.842	5.614	68.354			
8	0.762	5.080	73.434			
9	0.724	4.830	78.264			
10	0.656	4.374	82.638			
11	0.616	4.106	86.744			
12	0.581	3.871	90.615			
13	0.536	3.572	94.187			
14	0.454	3.024	97.211			
15	0.418	2.789	100.000			

TABLE 6 Study variables.

Study variables	Factors/Domain	P.M	S.L	S.E
CPEC Investment	IN-1 Innovation	0.84	0.87	0.49
	IN-2 Foreign Business Confidence	0.72	0.81	0.51
	IN-3 Foreign Reserves	0.77	0.79	0.44
Economic Growth	EC-1 Capital Stock	0.81	0.76	0.34
	EC-2 Foreign Trust	0.70	0.73	0.39
Infrastructure Development	ID-1 Environment	0.69	0.72	—
	ID-2 Transportation	0.90	0.93	0.29
Employment	EM-1 Life Style	0.66	0.65	0.28
	EM-2 Education	0.60	0.62	0.33
Poverty alleviation	PA-1 Earnings	0.67	0.70	—
	PA-2 Community Standards	0.68	0.73	—
Transportation	GT-1 Private Sector Credit	0.78	0.81	0.36
Knowledge Transfer	KN-1 Technology	0.70	0.75	0.38
	KN-2 Labour Skills	0.64	0.67	0.35
GDP Growth	MN-1 Investment and Industry	0.71	0.76	—

NOTE: P.M, pattern matrix; S.L, standard loading; S.E, standard error; N = 374.

strengthening the economy, modern transportation networks, energy projects, Gwadar Sea-Port, Gwadar Airport, and special economic zones are all dependent on China and Pakistan's ability to work within their respective limits. From the Belt and Road Initiative to the China-Pakistan Economic Corridor, the entire project is pushed by the Chinese government which permitted other countries to join through a political conduit. Similarly, the case of CPEC is built on shared interests with both Pakistani and Chinese political regimes and the need is to push each other up in a context of significant interdependence (Afridi and Khalid, 2016). Through trade and diplomatic cooperation, CPEC has widened Pakistan's reach by reviving its geopolitical and strategic

TABLE 7 Pearson correlation matrix.

Variables	Cr	AVE	1	2	3	4	5	6	7	8
1Investment	0.71	0.70	0.837							
2Economic	0.78	0.67	0.573	0.793						
3Inf Dvlp	0.88	0.77	0.374	0.307	0.806					
4Employment	0.70	0.64	0.246	0.233	0.364	0.869				
5Poverty	0.73	0.61	0.458	0.444	0.528	0.215	0.873			
6Transport	0.95	0.79	0.672	0.686	0.417	0.205	0.476	0.797		
7KnTransfer	0.81	0.74	0.579	0.592	0.436	0.301	0.444	0.686	0.837	
8GDP Growth	0.73	0.69	0.546	0.559	0.419	0.325	0.409	0.763	0.749	0.451

ties with China, Russia, Afghanistan, Iran and Central Asian states. It has also brought national and provincial parties on the same page in terms of their support for CPEC and China for national objectives (Ahmed, 2018). It should also be noted that since the inception of CPEC, Pakistani administrations have attempted to enhance the business climate in order to increase FDI and therefore address the socioeconomic problem that has plagued the country's economy for decades. As a result, factors such as "ease of doing business" which has recently risen to 108th rank from 136th before the start of CPEC, reflect the government's ongoing efforts to improve business scenario. Furthermore, the establishment of CPEC Authority demonstrates civil-military collaboration in order to speed the completion of relevant projects in consultation with the institutions (Ahmed, 2018). The administration has had a favorable influence on the local environment due to its emphasis on transparency (Ayla, 2018).

The world powers have remained interested in Pakistan due to its geographically prime location, natural supplies, valuable minerals and geopolitical value in Asia. With the BRI strategy, China similarly has been strengthening its political interaction with Pakistan's governmental stakeholders. The Chinese government has already begun developing its far western Xinjiang province through political initiatives, with the goal of reducing ethnic militancy and engaging locals in socioeconomic opportunities via BRI corridor routes (Hameed, 2018). On the Pakistani side, China has demanded Pakistan's political and military cooperation to overcome insurgencies against China-Pakistan joint economic interests, particularly in Baluchistan province, in order to maintain CPEC stability (Shah, 2016).

CPEC is the form of private foreign direct investment inflows, the biggest ever in the history of Pakistan. Current research studies conclude that infrastructure development, power and transport, covering the energy crisis, decreasing poverty by employing direct job sources and boosting trade are related to CPEC. Research considers Special Economic Zones and Gwadar as economic hubs in the future. Many of the CPEC projects are now being built and both nations are gaining from them according to a Chinese administration official of China Harbor Engineering Company. As a result, prevailing projects have provided locals with direct and indirect jobs and contracts. Logistic-related companies have benefited greatly from the developed transportation system, travel time and costs have been reduced due to smooth and short routes (Ali, 2018). Chinese ambassador Sun Weidong has remarked that CPEC energy projects are lowering electricity deficit providing trade opportunities and jobs, supporting transportation infrastructure and expanding GDP to cater to the large population demands (Menhas et al., 2019).

Moreover, China does not want to hinder its energy imports by passing via the Malacca Strait due to pirates and contested marine areas surrounding Indonesia, Taiwan, the Philippines, Vietnam, and India, where Chinese ships may be forced to go an extra 500 miles (Chowdhary, 2015). Corridor is a Chinese transit route, and its development has drawn up a lot of China's products and services including cement, steel, flat glass, aluminum, high-skilled labor and other services (Rahman and Shurong, 2017). As a result, CPEC has increased the number of jobs available to Chinese citizens along with the assurance of decent wage. CPEC is thought to be a helpful hand in bridging between the Uygur community and government stakeholders (Cai, 2017). This will be accomplished by establishing import and export zones, cross-border socioeconomic activity, industries, logistics, and a transportation network that will provide residents with employment, income and a way to live in harmony with other Chinese (Kanwal et al., 2020). Economists feel that several CPEC projects would increase Chinese enterprises through FDIs (Rahman and Shurong, 2017). Furthermore, China's western Xinjiang province alone touches eight foreign borders that are; India, Pakistan, Afghanistan, Kyrgyzstan, Kazakhstan, Tajikistan, Mongolia and Russia. Hence, CPEC assists China's western development policy for Xinjiang, Qinghai and Tibet (Malhotra, 2015). The Xinjiang government has recently experienced receiving 10 percent cheaper sea food from Gwadar port in only 10 days with the help of the CPEC route and now has decided to develop the transport network between Pakistan and China with an investment of US $24.72 billion, resultantly, enhancing Xinjiang's economy through exports and imports with Central and South Asian markets (Jingjing, 2017).

Pakistani civilizations have been experiencing backwardness in a variety of ways, including an impoverished lifestyle, old infrastructure, limited utility services, low income with minimal savings and redundancy (Kanwal et al., 2020). For example, the continuous Chinese influx through CPEC would consciously encourage and enable Pakistani people through knowledge exchange by Chinese specialists to revolutionize the leadership style of Pakistani employees. Not only will Chinese technical partnership encourage employee innovation, but it will also diversify Pakistan's domestic industrial sector which will benefit society and the economy. The implications of CPEC are believed to continue the societies of both Pakistan and China for a long time because the ongoing and prospective projects are of extremely futuristic type. These projects are designed to not only enhance socio-cultural domains of both nations but also extend interaction between both groups by delivering economic development opportunities.

Finally, Pakistan, although being one of the nuclear-weapon states, continues to fall behind in the industrial and technical areas since long. However, as Pakistan's "all-weather friend," China appears to provide greater technological value in Pakistan's primary domains such as energy and transportation infrastructure, agriculture, industry, security and technology transfer. Chinese technology has been witnessed transferring knowledge to Pakistan's various small-scale companies, businesses, offices and families in recent years. Rapidly inventive goods not only facilitate companies and people's everyday lives, but they also encourage local industry to collaborate with Chinese technology producers (Ayla, 2018). Moreover, this transformation and transfer will provide easy access to basic amenities of life like banking, technology, local market, transportation, education and health. Specifically, it will provide access to education and health in different rural and remote areas. These factors contribute directly or indirectly towards improvement in the living standards of the Pakistani people and lead them towards development and prosperity (Haider and Haider, 2015). Moreover, this also includes empowering local firms and industries to apply effective administrative techniques. China can support Pakistan under CPEC investment to build up its similar profitable industries such as mining, agriculture, manufacturing, electric infrastructure, automobiles and parts assembling industries. In this way, the different modes of modern industrial collaboration might include joint ventures, technical cooperation, setting subsidiaries, foreign investment, mergers and acquisition.

7 Conclusion

CPEC is a powerful economic windfall for Pakistan's economic development in the next ten to 15 years as well as a chance for Pakistan to stabilize its society and remodel its image from a fragile state to a growing Asian economy. The findings of this study have five main policy implications, especially at the planning and execution stages of megaprojects for Pakistan's advancements, ranging from political integration to resilient socioeconomic reform and from social unification to technological advancement.

Firstly, the results confirmed that CPEC has no trivial socio-economic impacts on Pakistan as it will cover the energy crisis, improve local infrastructure and transportation and be a source of economic and financial growth. Secondly, the statistics also confirm that the large influx of investments will act as a powerful economic incentive for Pakistan's government and social sectors to improve the business environment and increase commercial attractiveness for more foreign investments, which will benefit not only the Chinese investors involved in CPEC but all foreign investors in Pakistan including US and EU. Thirdly, stabilization and greater security are two more benefits that CPEC might provide. With planned infrastructure, energy, industrial investments and employment, CPEC would expand private sector opportunities and provide a realistic alternative out of poverty for Pakistanis, particularly the severely poor who could otherwise be enticed to join the Taliban or ISIS as mercenaries. Fourthly, it will provide China an opportunity to play a major role in helping people import and export goods around the world. It will also make it easier to transport goods from Shanghai to Europe and oil from the Gulf to mainland China. Finally, our study revealed that due to CPEC investment, lots of Chinese MNCs will establish production units in Pakistan or set up subsidiaries. As a result, knowledge and technology transfer will occur and local labor and professionals will get extra skills.

Lastly, it is concluded that individuals involved in policy making must take into consideration the long-term environmental concerns of CPEC. As expected, the ecosystem and long-term sustainable growth may be affected in the future by coal energy projects. But as projects develop and the environmental challenges worsen, strict laws will be needed to limitize the damage to the environment.

7.1 Implications

This study has several implications. Through this study, the residents of the country will understand that the project is in favor of the country's future and especially themselves. To balance trade deficits, Pakistan should use the CPEC instrument to strengthen its industries, allowing it to not only meet national import demands but also export excess commodities, balancing the current account, increasing tax income and motivating local production and purchasing (Masood et al., 2016). A significant number of organizations working under CPEC are not Chinese government entities. They will invest to make sure of advantages for their organizations and for it, Pakistan ought to figure out how to connect with them and think of the right proposition. Motivations ought to be encircled and offered to support various nations of Europe to be part of

CPEC. Arranging seminars and media campaigns about CPEC project highlights and special economic zones can provide an attractive opportunity and will empower other nations. In the event one window self-sufficient CPEC body arrangement is needed for the entire CPEC tasks and works, this would deal with the inside difficulties of arranging, financing, knowledge, language, technology transfer and planning between associations and provinces to achieve rapid results. The most significant of all, Pakistan needs to manage this multi-billionaire venture with twenty-first century tools not with twentieth-century ones. It would support both China and Pakistan to achieve the task on schedule with better results and appropriate measures.

7.2 Limitations

Several limitations and gaps were observed while conducting this research which may be improved for future studies. CPEC is a dual-nation project, so there is a lack of reliable data. It is also noted that countries are unwilling to release national information openly, which is a hurdle in carrying out empirical analysis. There is also a significant divergence in policy and investment norms and regulations between the two nations. The CPEC is a business-focused initiative, yet it fails in distributing the rights and profit shares of the project between both nations. Moreover, nations that carry inadequate law, red tap situation and poor governance are prone to environmental, social, and corruption threats for indigenous investment projects. Finally, the project does not include enough guidelines for environmental safety and sustainable long-term growth.

7.3 Strengths

Because of the project's access to various parts of the world via the CPEC route, the host country's (Pakistan's) strategic location is ideal for its execution. The HC's ideal short route from the Gulf to Shanghai via Gwadar made it competitive and unique for the import and export of goods and oil. The underdeveloped transportation system lacks infrastructure innovation and energy projects as well as the absence of competition and strong political and strategic ties between China and Pakistan, are its biggest advantages. It was also different because it has the lowest cost of labor and the highest number of young people who could work on projects.

7.4 Weaknesses

CPEC is a multi-billion US dollar project; because of quick global, regional and local changing conditions, it will be hard to reap its rewards exactly despite employing all conceivable means and resources. Furthermore, lack of transparency, political instability, corruption rate, less education and skilled people, greatest percentage of interest on foreign investment and less facilitation and ease of business made this project vulnerable. Finally, absence of information for other investors regarding the project loses its attraction in the international arena.

7.5 Future recommendations

As the project is not fully operational, it is hard to calculate the actual figure, cut of data and cost associated with the CPEC Corridor. The data we used for the study came from Southwest China and Pakistan, so future researchers may look at other parts of China, the Middle East and Europe. Researchers are suggested to include other economic variables in future research studies like cost, revenue, logistics i-4 and supply chain etc.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary Material, further inquiries can be directed to the corresponding authors.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the (patients/ participants OR patients/participants legal guardian/ next of kin) was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

SA, carried out all the major works of the manuscript, and modification of the manuscript. Data collection, Calculation, Writing and Design under the supervision of ZW, while AS made the paper reading proof.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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