



Impact of CPEC on Supply Chain of Industrial Sector in Pakistan

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Abstract

This study explores the impact of the China Pakistan Economic Corridor (CPEC) on industrial sectors supply chain of Pakistan. Study was very helping in detection of ways to better use our company's opportunities to improve logistics efficiency. The research focuses on helping Pakistan to cover the unfavorable trade balance with China and neighboring countries, also the fusion of cultural, academic and regional knowledge of the people of both countries. China Pakistan Economic corridor ensures smooth and efficient transportation and reduces the time, distance and cost of achieving our goal. Article used a review of the research literature to explore the latest technologies related to CPEC and SCM. We used only secondary data sources which are extracted from completed research. Important equipment for collecting supporting data includes well-known journal sites. It also includes policy documents, and long-term plans of CPEC 2017-2030 which details the CPEC plan. Based on the literature review, we found a large research evidence to support that CPEC will help Pakistan's industry providing international capabilities and import modern tools and services for innovative products. Many researchers believe that "supply chain management goes beyond the trade route to China". Think of it as an opportunity to succeed, and you can change the infrastructure of your business. We analyze the internal and external factors that influence the supply chain management and the benefits offered by the project in the scenarios, access to information and technologies, tools and methods for communication and planning, stakeholder relations, organizational flexibility and services. Mix method (quantitative and qualitative) research can help you find more information about improving your SCM system. Pakistani companies improve their SCM with international capabilities through CPEC and import the latest tools and innovative services with less shipping and costs. In this article, we look at some economic growth pitfalls that see CPEC as an opportunity to use all the advantages to improve the industry. In fact, industry is the backbone of Pakistan's economy. Novelty of this article is that it opens up discussions about the positive impact of CPEC on industry success and economic growth. CPEC is expected to have a significant impact on Pakistan and move the economy in the right direction.

1. Introduction

China Pakistan economic corridor is large-scale project that includes poverty reduction by improving regional interconnectivity, energy production, infrastructure, industrial construction,

agricultural improvement, livelihoods, education and sanitation facilities. The alliance has been approved in all Pakistan states (Menhas et al., 2019). Various projects under the CPEC have triggered the country's economic boom. This huge investment on the industry required a lot of study

and research to check the impact, local investors need to be aware that future CPEC projects in the country will need to change their business activities. Our aim of this research is to explore the impact of CPEC implementation on supply chain/logistics and overall performance of local industries (Abbas & Kamal, 2018).

Mr. Xi Jinping, President of China first proposed the concept of "Belt and Road" during a visit to Kazakhstan in 2013, the "Belt and Road" initiative was a compressed form of the silk road economic belt and the 21st century maritime silk road. The communist party and the state council of china make a decision of strategic global change and implement in international and domestic situations (Majid & Li, 2019). Corridor is executed by him as a regional connectivity framework in 2015. It was termed as "Project of country" at time being a forerunner of previous project one belt one road (OBOR) and belt road initiative (BRI). OBOR/BRI consists of 6 major economic corridors in 65 countries in Asia, Europe and Africa. It represents 40% of Gross Domestic Product GDP (www.cpec-centre.pk, 2017). Pakistan's industrial sector often faces many obstacles, including energy shortages, lack of new technologies, limited research and development assistance, lack of funding and capital, a tough regulatory environment, and increased competition (Baymout, 2016). Pakistan became best trade center for China because of CPEC. China has adopted Pakistan as the main trade route with the EU, East Africa, Russia and central Asian Republic. This economic corridor has a positive impact on Pakistan's logistics and strengthens relationships with relevant supply chain stakeholders (Kamran et al., 2019). This project helps link strategic relationships with higher levels of economic, political and military alliances (Ghani & Sharma, 2018). This improves the quality of their operations. In these two development processes, Social and economic development is much effected through infrastructure and transportation of that region. It also contributes to sustainable development, stability and peace, and trade and economic support (Kamran et. al., 2019). Governments should also focus on providing equal opportunities to benefit all states from the projects, especially in vulnerable areas of Baluchistan.

2. Supply Chain

Supply chain is an integrated process in which raw materials are converted into end

products and delivered to end user, raw materials are manufactured to final product and delivered to customer/end-user through appropriate distribution channels (Beamon, 1998). Production planning and inventory management processes, distribution and logistics processes are its basic components and it is critical to business success. Njoku & O.U. (2015) proposed that systematic implementation of supply chain management can help small businesses improve profitability in a highly competitive marketing environment. This will help in effectively managing the flow of funds, materials and information from customer to supplier through service and production and ultimately meet requirement of the enterprise.

Today, businesses assume that standard setters need to compete in the market, not in the organization (Azfar et al., 2017). Researchers further define the components of the supply chain management process, including components for customer as demand/supply management, relation/service management and process management etc. purchasing, product development, sales and returns (Kamran et al., 2019). Review of the literature on the scope showed that adopting SCM has many potential benefits for organizations. Use various indicators to measure the performance of an organization, including financial measures, innovation progress, and shares of market and satisfaction of customer. In terms of on-time delivery, flexibility, sales, coordination and communication is a base in reducing risk also process duplication between organizations (Fawcett et al., 2008 and Thoo et al., 2017). The responsibility of senior management is to improve responsiveness because supply chain decisions and strategies affect the entire supply chain. Information technology and resource decisions are also made by senior management. Culture of organization, staff training, production and environment are some of the organizational factors affecting coordination (Hayat et al., 2012)

3. Economy, Supply Chain and Industry relation

Developed countries prefer physical infrastructure, but consider it to be a necessary condition for better industrialization and overall economic development (Junejo et al., 2019). Pakistan currently faces severe energy shortages, volatile economic conditions also increasing unemployment. As we all know that energy is basic requirement of our industrial/economic structure.

CPEC is stimulus for Pakistan's growth and economic stability. In addition, according to CPEC, foreign direct investment will increase (Menhas et al., 2019). Coordination in the supply chain is critical to achieving sustainable competitive advantage (Hayat et al., 2012). Physical infrastructure is composed of two parts, the first part is the economic infrastructure such as roads, irrigation, telecommunications, electricity, etc. Infrastructure. In fact, it has been observed that physical infrastructure has long been used to increase income and production levels (Junejo I. et al., 2019). According to Shan, (2011) logistics efficiency is built on smooth transportation and strong infrastructure. Studies have shown that shortening the route length can improve logistics efficiency. In today's competitive business environment, logistics is critical to survival and seems to have become a leader in their respective industries (Chang, 2015). It's estimation that 44% of transportation costs are related to the entire logistics system (Chang, 2015; Russel, 2015; Junejo, et al., 2019 and Mustafa & Zafar, 2017). The economic corridor supply chain and logistics through transportation, innovation, information technology and substantial investments. Reducing travel distance and time can reduce fuel consumption and costs, and reduce greenhouse gas and carbon dioxide emissions. This makes sustainable development the center of sustainable development and social life (Azfar et al., 2017).

Our basic small scale or medium scale organization that is also known as SMEs are vital for economic stability. The innovation and flexibility are visible in most developed countries. Potential benefits of SCM for SMEs include good customer services responsiveness, better supply chain communication, reduction of risk and duplication and improved electronic transactions including inventory reductions (A.C. et al., 2017). For the industry, logistics help optimize existing manufacturing and distribution processes (Aqeel, 2016). To achieve strategic growth and economic development in countries around the world, the "Smart Economy" is currently focusing on the implementation of economic corridor strategy. Economists claim that the economic corridor can play its role and that it is an economic expansion initiative to promote economic growth and stability (Ahmad, et al., 2017). Pakistan must focus on the timely completion of the project and protect the

project from national and other negative factors effect.

3.1. Impact of CPEC on Supply Chain (Pakistan/China)

The economic corridor in China and Pakistan is considered the most feasible and economic route due to its potential transport distance and leading time. The CPEC route also offers the opportunity to make trade-offs focused primarily on key success factors (Azfar et al., 2017). CPEC route infrastructure offers great opportunities for transportation and SC to increase capacity improve and revitalize network. In addition, it promotes green, sustainable and sustainable prosperity in East Asia, the Middle East, Europe and even North America (Azfar et al., 2017). According to the "Observatory of Economic Complexity (OEC)" China is the world's largest export economy. According to OEC estimates, the total oil imports to China account for 13.4% of crude oil, and CPEC will shorten the distance and delivery time (Junejo et al., 2019). The new route will enable China to shorten imported crude oil with a 10-day lead time. Pakistan faces serious challenges such as poor governance, poor governance and poor social/economic, but Pakistan has a strategic location (Junejo et al., 2019). The CPEC project is a network that includes roads, railways and highways connecting Kasghar and Gawadar. The Karachi-Peshawar railway was modernized to increase the speed of trains by 160 kilometers per hour. The Gawadar project will contribute to economic development in Central Asia, which includes Sri Lanka Uzbekistan, Iran, Afghanistan and much more. Pakistan is famous for exporting fruits (Junejo et al., 2019). The data show that by the end of 2020, Pakistan's logistics industry will grow to \$ 30.77 billion (www.cpec.inf.com), and Pakistan's logistics system is likely to become an efficient integrated transportation system in the future. According to your estimates, more than 90 % of cargo is transported by land, not by air, but by Pakistan. The official website of CPEC (www.cpec.inf.com), the main goal of Pakistan's logistics system is to reduce transportation costs and provide fast and efficient connections between urban and rural (Junejo, et al., 2019). Seamless logistics integration between company and supplier means there is no national border, so the material flow from supplier is well coordinated and uninterrupted production can be realized (Abbas & Kamal, 2018). CPEC is

an economic plan to promote the economic strategies of both countries. The "Chinese Certified Public Accountant" is one of the most important agreements to promote the integration of the emerging economies of the two countries. However, this is one of the preferred factors for Pakistan to achieve industrial development and overcome the economic crisis, as it is a key factor for stabilizing and alleviating the internal crisis of the Pakistani economy (Ali et al., 2018).

4. Literature Review of Previous Research on CPEC

Many previous studies have described CPECs impact on Pakistan infrastructure, energy production, growth of GDP, transportation routes and employment opportunities. China's investment in the CPEC framework is US \$62 billion (revised), of which more than US \$20 billion is used for various small projects. This has a direct contribution to our economy by 8% of GDP, (Menhas, et.al., 2019). According to another study (Rehman, 2018), there is a very important link between unconstrained transport and transport efficiency achieved through trade and the development of CPEC infrastructure. They also

observed an important link between developing transportation routes through CPEC and reducing travel time for cargo and passengers (Rehman, 2018).

All projects under economic corridor implemented in short, medium and long term as 2017, 2025 & 2030. CPEC is lined up with the basic energy requirements of Pakistan and china. According to a Deloitte, (2016) report, the CPEC will increase China's exports to Pakistan, promote the development of the Western Province, and help China support Pakistan's energy and transport. Therefore, CPEC tends to influence Pakistan economically and politically (Kamran et.al., 2019). Establish a model of peace and development and benefit everyone. CPEC wants to build a better future region through peace, development and economic growth (Ghani & Sharma, 2018). CPEC will bring positive change to local, national and international companies by establishing long-term mutual relationships between stakeholders in the supply chain (Kamran, et.al., 2019). The table given below shows a research evidence of CPEC impact on Pakistan's sustainable economy logistics and industries.

Table: Finding of Previous CPEC Studies

Author (Date)	Title	Findings
Junejo, et al., 2019	Role of China-Pak economic corridor (CPEC) in logistic system of Pakistan and China	CPEC is the largest direct investment in Pakistan's history and accounts for 10% of Pakistan's GDP. Improve logistics and create better opportunities for overall GDP growth. Shipping cost and delivery time are considered an improvement in overall SCM performance. The CPEC project will support China and Pakistan.
Rehman et al., 2018	Role of CPEC in development of trade, transport and economy of Pakistan	The survey results show that CPEC guarantees smooth and efficient transportation, saving time, distance and cost. It allows locals to maximize their social involvement.
Ghani & Sharma, 2017	China Pakistan economic corridor agreement: Impact on shareholders of Pakistani firms	The impact of CPEC on the energy, transport, industrial, and financial sectors of Pakistan's economy is expected to significantly increase the present value of future cash flows of Pakistani shareholders making up the KSE 100 index.
Abbas & Kamal, 2018	supply chain integration and performance: the effects of CPEC on long-term relationships, information and logistics integration	CPEC has a positive impact on logistics and IT for all companies, CPEC's sharing of information and logistics integration with key suppliers also has a positive effect. CPEC negatively impacts all of the above in a long-term relationship.
Kamran et al., 2019	Impact of CPEC on supply	CPEC surveyed the respondents' views that

	chain management of SMES in Pakistan	Pakistan 's SMEs supported by CPEC beneficial to internationalization, import the most advanced tools, produce innovative services and increase opportunities for transportation, they will be able to buy and supply more efficiently and at lower cost.
Idrees et al., 2019	The role of logistics infrastructure in CPEC energy generation development	The article concludes that the power project at CPEC has been interrupted due to the construction of road and rail infrastructure has been delayed. Improved road and rail networks can enhance SCM and make it more efficient. Logistics can accelerate business growth and help reduce energy consumption. This promotes industrial development.
Abbas et al., 2019	CPEC utility and concerns under OBOR initiative: a Pakistan industrial perspective.	The research shows that CPEC is good for Pakistan & China, and also for other regions. Their research shows that the development of the corridor has created employment opportunities and that Pakistan's industrial growth through CPEC has had a positive impact on GDP. CPEC will not threaten Pakistan's sovereignty. CPEC officials expressed concern about the government's intentions.
Shapiee & Idrees 2017	(CPEC); Most valuable dream for Pakistan through economic integration in the region but may not become true without upgradation of physical infrastructure and legal system!	The study concluded that Pakistan's sustainable economic development can be achieved first through a powerful and comprehensive social and legal framework for logistics investment at the national and regional levels. This will increase Pakistan's economic competitiveness and open the way for productive logistics investment through the China Pakistan Economic Corridor. We can gain the momentum of this logistics investment and get the results you expect from CPEC.
Azfar et al., 2017	Application of lean agile resilient green paradigm framework on china Pakistan economic corridor: a case study	With the CPEC routing option, the SC's transport distance and lead time can be reduced, allowing for faster, more agile and leaner response, providing eco-friendly global logistics and SC flexibility. As a result, it integrates sustainability into global logistics and supply chain management.
Hanjra et al., 2017	Understanding port efficiency a CPEC perspective.	They found that evidence of port efficiency plays an important role in promoting international trade. The dynamics of trade flows require the right tools. As a result, supply chain operations related to port clearance remain competitive and cost-effective. Management must fully understand the factors that optimize efficiency.
Hayat et al., 2012	A study of the different factors that affecting the supply chain responsiveness.	In the case of a responsive supply chain, companies need to strengthen senior management's commitment to building a responsive supply chain. Information flow also needs improvement.
Aqeel, 2016	Impact of CPEC.	The results show that in terms of transportation costs, the supply chain needs to reduce trade transportation time, as it can save about \$ 41 billion in imports and exports to specific destinations. The

		results of this study also show that China has saved shipping time and that quick delivery has enhanced China's market competitiveness. As mentioned earlier, CPEC is changing the picture in this region, benefiting not only Pakistan and China, but also all other countries.
Mushtaq et al., 2018	Reverse logistics route selection using AHP: a case study of electronics scrap from Pakistan	Objective of study is to determine the best reverse logistics route for e-scrap, taking into account transportation costs, transportation time, the number of goods transported, the nature of the goods, and the monetary value of the goods being transported. CPEC was also considered in the available routes analyzed. The results show that CPEC is the best approach.
Menhas et al., 2019	Sustainable development under belt and road initiative: a case study of CPEC socio-economic impact on Pakistan	Studies show that CPEC investment has stimulated Pakistan's GDP growth. This had a positive impact on economic development by creating employment and business opportunities for local people. At CPEC, cultural exchange is also carried out through language and educational exchange programs. After the development of rural infrastructure, rural areas are connected to cities. In sustainable development of Pakistan. CPEC is initiative. CPEC plays a catalytic role in stabilizing Pakistan's volatile economy.

A thorough study of all previous and current studies and research reports, it is concluded that Pakistan's sustainable economic development was largely achieved by creating a robust and comprehensive social and legal framework for domestic and regional investment in logistics. In addition, organizational sector depends upon competition of export. The Pakistan Government has launched the Economic and Trade Corridor Program (ETCP), which includes a comprehensive portfolio of ports, railways, roads, oil and gas pipelines, to achieve the goals of sustainable economic growth and global export goals. This will increase Pakistan's economic competitiveness and open a fruitful investment channel through the Pakistan Economic Corridor in China. Get this type of logistics and get the desired result from CPEC ([Shapiee & Idrees, 2017](#)).

4.1. CPEC in Numbers

CPEC is one of the world's largest corporate investments, with an estimated investment plan of \$ 62 billion for various projects, including energy, railway, highway, oil and gas pipelines, industrial development, fiber optic cables, and the construction of Gawadar Port ([Dawn News, 2017](#) and [Junejo I. et al., 2019](#)). The economic corridor

of the park connects the port of Kasghar in China with the port of Gwadar in Pakistan. The distance between Xinjing, Beijing (China) Kasghar is approximately 5,513 kilometers, and the Persian Gulf is approximately 2,500 kilometers. According to OEC estimates, the distance between China and the Persian Gulf for crude oil, reducing the distance from 2500 km to 1300 km and delivery time to 10 days from 45. These new routes are help China import crude oil within 10 days, thereby reducing transit time.

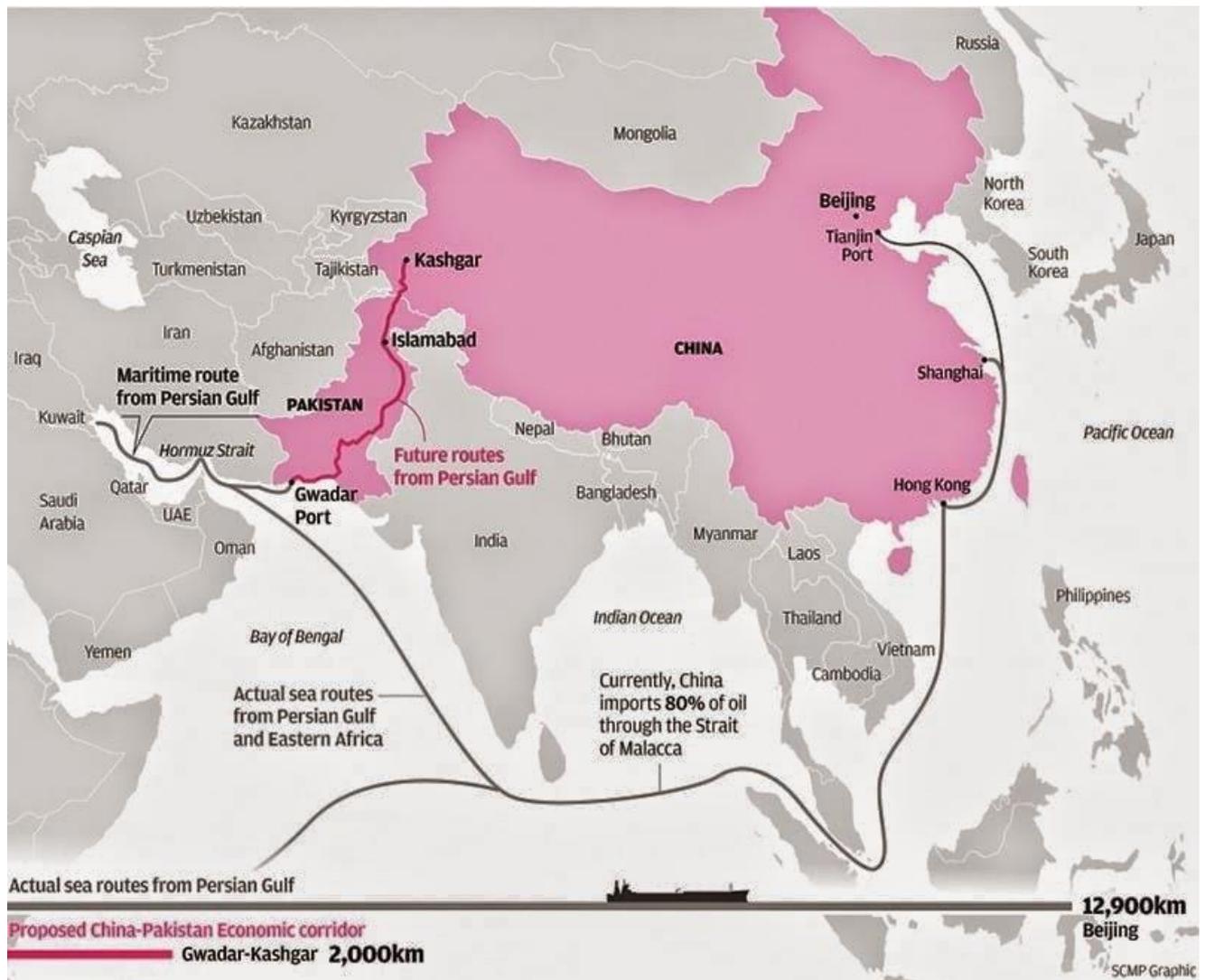


Figure 01: CPEC Route (Deloitte Study Pakistan Economic Survey, 2014-15)

The idea of connecting more than 60 countries through large-scale investments in various infrastructure projects in Asia, Europe and Africa which is "one belt-one road" according to China (The Economist, 2016 and Ghani & Sharma, 2018). As shown, a freight rail contract between Gwadar and Hungerab has been established to connect Afghanistan, India and Iran. The plan will restore the extension of the Karakoram Highway between Xinxiang, northern Pakistan, and Gilgit Baltistan and Khyber Pakhtunkhwa provinces. The physical link between China and Pakistan through the CPEC offers the opportunity to establish many economic zones and corridors. Working group of CPEC Energy Planning is formed and began to implement related energy projects.

These are 21,690 MW power generation projects implemented in China with the support of the CPEC policy. CPEC is a huge project aimed at starting road and rail connections in most parts of

Pakistan (Rehman, 2018). Internationally, the prerequisites for improving infrastructure have promoted trade cooperation between South Asia, Afghanistan and Pakistan. Of the \$ 9 billion trade corridor fund, \$ 5 billion is for highways and \$ 1.5 billion is for track upgrades. In addition, a trade zone will be set up along the highway to reduce business costs, and Pakistani products will make the market globally competitive (Rehman, 2018). According to the "World Investment Report 2017" Pakistan 's foreign direct investment in Pakistan increased by 56% came from China's because of CPEC (Rehman, 2018 and Hassan et al., 2018).

4.2. Procedural Evaluation

This article uses a review of the research literature to explore the research on CPEC impact on SCM of industrial sector in Pakistan. Literature review is the starting point for subsequent theorizing. In this study, we use secondary data

sources. This is a type of data extracted from completed research. First, using auxiliary data can save your cost. This is because such data is easily accessible to researchers and time saving. Important equipment for collecting supporting data includes well-known journal sites. It also includes policy documents, such as the long-term plan of Economic Corridor (2017-2030), which details the CPEC plan. In addition, Google search engines are used to collect data from trusted websites (Ullah, 2018).

A comprehensive analysis was performed. The results are based on an analysis of the secondary data. Data sources include Google Scholars, research journal publications, articles and analysis reports on CPEC and its effects. Research has sought to answer how to take advantage of this opportunity. Second, as mentioned earlier, this study uses secondary data as source of information. This is a type of data extracted from the previous research performed. One can get the access to the dataset used in the survey. It is important to note that the secondary data allows for a vertical comparison, so one can have good results with more completeness and reliability (Ullah, 2018). A literature review shows that case study methods are very common in logistics and supply chain management. Previous researchers used a scenario development approach in a logistics case study (Azfar et al., 2017).

5. Conclusion

The study examined all the benefits of CPEC's Pakistan supply chain network. Because CPEC has a good impact on IT and sharing information and logistics integration for all companies, new arrangements are being made to improve these firms. Over the next five years, CPEC will focus on improving the basic public services of Pakistani people, demonstrating local people's employment preferences, and providing extensive communication and cooperation in this area. This will lead to Pakistan's socio-economic development and poverty reduction (CPEC-Report-2019 www.cpec-centre.pk). After reviewing all previous studies, we have evidence for CPEC as best route available in both regions. The study also considered the benefits of the supply chain industry from CPEC to Pakistan. Main advantages of CPEC are the cost and time of transportation, the quantity of goods transported, and the monetary value. The study will provide not only the detailed impact of CPEC on the supply chain, but also the economic

and industrial impact. Therefore, the main purpose of the CPEC is to redefine and strengthen the relationship between China and Pakistan and improve their economic stability. From a Chinese perspective, gain economic stability in its Xinjiang province (Kamran, et.al., 2019).

Logistics systems create better opportunities for overall GDP growth. The cost of the secondary department paid by the manufacturer is estimated to account for 40% of the total production cost. Delivery costs and times are considered improvements in the overall performance of supply chain management. The development of this infrastructure not only supports Pakistan's logistics industry, but also improves industrial production, export levels, raises stock prices in financial markets, and links with national (local and urban transport systems) and international levels (Junejo, et al., 2019). A joint working group responsible for socio-economic development and poverty reduction was established under CPEC. It will be responsible for housing, labor-intensive industrial relocation, skills training, off-grid solar home solutions, job creation, clean drinking water, education, healthcare, Forestry, technology transfer, etc. (CPEC-Report-2019 www.cpec-centre.pk).

5.1. Recommendation and Future Research

As long as Pakistani policy makers recognize opportunity and successfully formulate a comprehensive strategy and establish mutually beneficial partnerships with these countries, the China-Pakistan Economic Cooperation plan will provide huge opportunities. We all need to develop policies and strategies to take advantage of all the benefits this project can bring to the industry and the economy. We recommend that do not politicize the CPEC and work to maximize the interests of all stakeholders through driver- led political leaders. In addition, the study suggests to critically examined the current logistics arrangements of China and Pakistan regarding their commitment for services and trading. CPEC offers the opportunity to improve governance bodies. However, to attain more pragmatic, and ethical solutions to local and societal problems, future research might be based on mixed method design (quantitative & qualitative).

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