

## IMPACT OF CPEC ON SUPPLY CHAIN MANAGEMENT OF SMES IN PAKISTAN

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### **Abstract:-**

*This study intends to understand the effect that the proposed China-Pakistan Economic Corridor or CPEC project will have on the Supply Chain Management of SMEs in Pakistan when it finally gets completed. It has been decided that as research methodology, both primary and secondary data shall be taken into consideration. Therefore, interview of selected group of respondents from SCM that are established across the CPEC belt region in Pakistan has been considered. Since this is necessarily a qualitative research, thematic analysis format shall be used for interpreting the collected data and predicting the results.*

**Keywords:** - CEPC, Supply Chain Management, Sino-Pakistan relationship

## INTRODUCTION

China Pakistan Economic Corridor (CPEC) refers to the network of structures that aim at establishing connectivity between different regions of the economic corridors of the two countries. The major objective of the CPEC is thus to redefine and strengthen the Sino-Pakistan relationship and help Pakistan in gaining economic stability. From the standpoint of China, this project will help it gain economic stability in its Xinjiang province. Improved diplomatic relationships with China will also work towards making the border regions of China secured against terrorist attacks (Abbas and Kamal, 2018; Mustaf and Zafar, 2017). The idea of developing CPEC was first conceived by the Chinese Premier Li Keqiang during his visit to Pakistan on May 2013. As per the envisioned plan, this project would connect the north-western Chinese province of Xinjiang with the Pakistani port of Gwadar through a network of roads that measure approximately 3000 kilo meters. The plan calls for completion of all the projects connected with it by 2030 (Bhattacharjee, 2015).

The Small and Medium Scale Enterprises sector is considered as the backbone of the economy of Pakistan that plays crucial role in the overall social and economic development of the country.

The sector provides employment to about 78% of skilled and semiskilled laborers in the country. This sector alone contributes around 30% to the GDP of Pakistan and 15% to domestic investment (Baymout, 2016). However, the SME sector of Pakistan encounters some barriers on a regular basis among which are energy shortage, water shortage, unavailability of newer technology, limited R&D support, lack of capital and financial resources, stringent regulatory environment and rising competition (Baymout, 2016). In such a scenario, full-fledged performance of CPEC will make Pakistan the focal point of Chinese trade. China would be able to trade with EU, Middle East, East Africa, Russia and Central Asian Republic with Pakistan as its major route. This CPEC will in turn have positive effect on the logistics of Pakistan besides benefiting the local, national and international firms of the country and strengthening the relationship of their corresponding supply chain stakeholders. The CPEC project will also contribute towards generating greater number of jobs in Pakistan, boost the country's GDP, increase government revenue, and enhance international trade (Abbas and Kamal, 2018).

In addition to strengthening the economic association between China and Pakistan, the project will also contribute towards taking the strategic relationship to a higher level of economic, political, and military alliance (Ghani and Sharma, 2018). The CPEC will bring about positive changes in the local, national and international firms by establishing long term and mutually integrated relationships between the supply chain stakeholders. This will enhance the quality of business operation of these firms. There will also be boost in job generation metrics along with increased international trading relationships. This will enhance international government revenue and GDP growth in Pakistan (Abbas and Kamal, 2018). As this project is a part of the "One belt, One Road" master plan of China and is a plan of network of roads, rails, oil and gas pipelines that connects China to south and central Asia so it is also expected to create directly positive impact on investment scopes in Pakistan. This is because the energy projects is projected to produce more than 15000MW of electricity, thereby giving boost to the current industry (Aqeel, 2016). Thus, the scenario will appear tempting for the private investors and investments can increase by 6% sharply. The revenue and share prices will increase for the cement and steel sectors due to heavy construction. high demand and availability of energy will also lead to productivity increment of the Pakistani manufacturing firms (Aqeel, 2016).

### **Aim of the paper**

This paper aims to study the impact of CPEC on supply chain management of SMEs in Pakistan

### **Literature review**

#### ***Components of supply chain management***

The supply chain is an integrated manufacturing process in which the raw materials are converted into final goods and then delivered to the end users through appropriate distribution channels (Beamon, 1998). In talking about the components of the supply chain, Beamon (1998) indicates that at the highest level, a supply chain comprises of two fundamentally integrated processes, namely, Production Planning and Inventory Control Process, and Distribution and Logistics Process. Croxton, García-Dastugue, Lambert, & Rogers (2001) define the components of supply chain management process further and enlist them as Customer Relationship Management, Customer Service Management, Demand Management, Order Fulfillment, Manufacturing Flow Management, Procurement, Product Development and Commercialization and Returns. While discussing more on these eight components of strategic management, the scholars further elaborate that these run across the length of the supply chain and cut across firms and functional silos within each firm. Felea & Albăstroiu (2013) describe the components on the basis of the supply chain stakeholders instead of activities with the purpose of identifying the fundamental components throughout the chain that range from the movement of products and services from point-of-origin to point-of-consumption. Thus, the scholars enlist the components are suppliers, manufacturers, warehouses, stores and other intermediaries.

#### ***Factors affecting supply chain of small scale industries***

The supply chain of small scale industries is affected by a range of factors; while some of them are internal to the organization, others are external to it. Quesada, Gazo, & Sanchez (2012) analyze both the internal and external factors affecting the supply chain management of small scale industries and propose environment within the company, internal

access to information and technology, communication tools, planning techniques, relationship between the stakeholders, organizational flexibility, quality of service, extent of innovation and marketing strategies that are in operation as some of the internal factors. While indicating towards the external factors, the scholars presented government support and uncertainties specific to the external environment in the form of political scenario of the country, social scenario, cultural issues, and religious issues among the cardinal ones. Malik, Musa, Ahmad, & Mohamad (2014) talk about factors that are internal to the organization and play significant role in determining the productivity and performance of the supply chain. Thus, the scholar indicates towards supply chain disruptions as the major factors. In elaborating on this, the scholars show that these disruptions may occur in the supply chain due to incidents of major breakdown in the production or distribution nodes of the chain. In addition to this factor, the scholars indicate towards shortage of material supply to specific nodes of the supply chain which eventually causes delay in the pre-determined order scheduling process. Thirdly, the scholars talk about equipment malfunctioning and systems failure as bane on supply chain performance. Lack of buyer power is indicated as yet another factor that creates complications for the small scale industries as they are unable to influence suppliers which in turn makes these firms pay more for the materials that they need to purchase for running the supply chain smoothly. In identifying the external and internal factors affecting the supply chain performance of small firms, Ibrahim, Ahmad, Shahid, and Asif (2015) talk about trade management as a paramount factor which is a sum total of variables like innovations, process strategy and marketing strategy as an internal factor. The scholars indicate towards computer technology and telecommunications as another internal factor. As external factor, the scholars indicate towards environmental uncertainties such as unexpected changes of supplier, competitor, customer, and technology (Ibrahim, Ahmad, Shahid, and Asif 2015). Among other external factors include government support. Elaborating on this factor further, it can be said that government can encourage better SCM performance by making regulations and policies regarding import of raw materials and products from outside as well as domestic sourcing and encourage logistics competency. Yet other external factor that encourages better SCM performance are minimal presence of uncertainty aspects from the overseas market in terms of political, social and cultural uncertainties, availability of up-graded IT infrastructure, communication tools, planning tools and cordial relationship with the supply chain stakeholders (Quesada et al., 2012). Again, while quality of the produce from the existing supply chain is yet another internal factor, level of customer satisfaction is another external factor (Ibrahim, Ahmad, Shahid, and Asif 2015).

#### ***Impact of effective SCM in a business, particularly for small scale industries***

Scholars have explored the significance of SCM on the business prospects of small scale and medium scale firms from various dimensions. According to Ibrahim, Zolait, and Pandiyan, (2010), supply chain management processes have direct impact upon the overall performance of the firm. These processes also give competitive edge to the organizations because SCM implementation means addition of value creating elements in various supply chain processes like supply, manufacturing, and distribution processes from raw material extraction, the transformation process, and end user consumption. Njoku and Ou (2015) suggest that a systematic SCM implementation acts as a catalyst for SMEs for enhancing their profitability in fiercely competitive marketing environment.

#### **Models of supply chain management used by small scale industries**

The following models of supply chain management have been proposed by various authors for small scale industries to help them accomplish their business goals and maintaining their market competitiveness:

##### ***Deterministic Analytical Models***

The Deterministic Analytical Models is a multi-program mathematical model that intends to determine and predict the outcome of a series of activities through the process of analyzing the relationships between various states, stages or stakeholders. When applied in supply chain management, this model proposes that the supply chain costs are determined by various factors under various situations. Moreover, the transportation of goods through various nodes of the supply chain have an impact upon the price of the final product (Beamon, 1998; Patzold et al., 1998).

##### ***Stochastic Analytical Models***

This model was developed and proposed by Cohen and Lee in 1988. The purpose of this model was to establish a material requirement policy for all the materials that are needed at different stages of the supply chain management system. This model is considered as well fitted for any supply chain because the basic nature of any supply chain is that it comprises of several stakeholders who are not from the same company. In most cases, the operational decisions are taken individually by these stakeholders without considering any local criteria. As a result, local optimization takes place in a competitive way and leads to loss of efficiency for the whole supply chain. Thus, this mode; proves effective in identifying the control parameters and enhancing supply chain performance in the process (Beamon, 1998; Jemai, 2003).

##### ***Simulation model***

The simulation model is used in supply chain with the intention of analyzing the effect of various supply chain strategies on demand amplification. Basically, this model helps in finding out which supply chain strategy is best suited for evening out the variations in demand pattern. Thus, this model proposes fine tuning of the existing decision rules first of all followed by working towards reduction in time delays at every stage of the supply chain. The flow of information across the supply chain is also integrated and made qualitatively better and improvements are achieved at every stage of the supply chain (Beamon, 1998).

## **Methodology**

In order to explore the impact of CPEC on supply chain management of SMEs in Pakistan, the study considered an exploratory research design whereby a deductive approach was chosen. In this regard a qualitative research methodology was adopted whereby purposive sampling led to choice of small scale industry's SCM representatives (n=10) from different businesses of textiles, furnishings, sports goods and carpets in the CPEC belt. Open ended questionnaire was used to collect data and the data was thematically presented to explore the impact of CPEC on supply chain management of SMEs in Pakistan.

## **Analysis**

### ***Demographic***

Majority of the respondents in the interview were male (n=9, 90%) and 10% or n=1 was female representative. In addition, it was also found that 60% of the representatives were of the age more than 40, whereas, 30% of the respondents between 30-40 years of age. The distributions of the respondents on the basis of type of business are 40% sports goods, 30% textile, 20% furnishings and 10% carpet. It was also found that majority of the representative implied that CPEC will help and improve the supply chain management of their business (n=6), whereas, 40% of the participants also implicated no improvement on the supply chain management.

### ***General knowledge***

#### **Understanding CPEC**

It was found that all the interviewees had a good knowledge of the CPEC, as all of them correctly abbreviated CPEC as China Pakistan Economic Corridor. Interviewee 1 informed that, "*CPEC is the investment by China on Pakistan's energy and transportation sectors as a part of the One Belt, One Road (OBOR) initiative.*" Similarly, interviewee 7 said that, "*CPEC is the agreement between China and Pakistan where China will invest in Pakistan for economy growth.*" CPEC is in fact a mutual growth programme featuring that will help both China and Pakistan to help each other in economic growth (Butt & Butt, 2015). Therefore, the interviewees have fair understanding of CPEC.

#### **Different components of SCM**

The most common components of supply chain management identified by the interviewees were inventory, logistics, customer relations, third parties, transportation, delivery, returns, and planning. However, inventory, logistics, customer relations, third parties, and transportation are different functions of supply chain management. On the other hand, planning, sourcing, customer relations and delivery are the important components of SCM (Cao & Zhang, 2011). Only interviewee 2 and 9 gave correct information. However, it may be implicated that the interviewees have fair knowledge of components of SCM.

#### **CPEC will benefit China or Pakistan or both?**

There was a mixture of different perspectives amongst the interviewees with respect to the benefit of CPEC. Interviewees 1, 4, 7, and 10 said that Pakistan will have more benefit, while, 2, 8 and 9 said that China will have more benefit. Lastly, 3, 5 and 6 said that both China and Pakistan will have benefit. However, it is inclusive from the interviewee statements, like 2 stated that "Direct access to the oil and gas resources of Pakistan, logistical and transportation benefit, protection and economic growth of western China", whereas, interviewee 1 said that, "Investments directly will improve both the industrial conditions and increased expenditure by the government." On the other hand, the interviewees with both said that, "Improved economy and access to energy sector." According to a report by Deloitte, (2016) it is expected that with CPEC the China's exports to Pakistan will increase as well as China will provide support to energy and transportation of Pakistan. Therefore, CPEC tends to impact Pakistan both economically and politically. The report also implicated that, China too has its own advantage, one of which is increased trade to the rest of the world and the second is vast access to Pakistan's natural resource and economic development of the western province. Therefore, both China and Pakistan has its own benefits and the respondents have a fair knowledge of the same.

### ***Impact of CPEC***

#### **Internal and external factors that drive SCM of SME business**

The most common internal factors identified were knowledge, time, technology, leadership, communication, commitment, customer requirements, production forecast, inventory management, customer service, transportation, relations with vendors, integration with manufacturing, purchasing, order processing, and procurement. All the interviewees were found to have good knowledge on the components that impact the SCM of SME's. This is also implicative from the fact that researches by Aishah, Pyeman, & Tajuddin, (2013) and Baymout, (2015) found similar internal factors that impacted the SCM of SMEs in developing nations.

Thus, it is implicative that, the same mentioned factors have positive and significant impact on the businesses of the 10 interviewees.

On the other hand, the external factors found were business operations, business collaborations, industry, environment, social, cultural, economic, government policies, and political. However, political, environment, and economical were the most common factors perceived by the interviewees as the most important factors impacting SCM of SMEs in Pakistan. Again, Danish Ethical Trading Initiative, (2010) and Kot, (2018) too found and implicated the same factors as externally

impacting the SCM of SME's. Therefore, it may be indicated that the interviewees have good knowledge on the external as well as the internal factors impacting their businesses.

### **Impact of CPEC on industrial sector of Pakistan**

Half of the interviewees in this aspect implicated that CPEC will impact only the SME industrial sector of Pakistan, whereas the other half said that CPEC will impact all size of industries in Pakistan. This is from the fact that, interviewee 8 and 9 said that, “*regional cooperation, trade and industrial development are the main aspect that will impact the industries of Pakistan*”. This means that, CPEC is based on the collaboration of energy, roads, highways, railways and others for economic development and will help by regional cooperation, trade and industrial development. The interviewees also said that, CPEC will help improve the manufacturing industry of Pakistan and improve the industrial supply chain system. CPEC will also lead to formation of large-scale industrial workers and hence the productivity of the industries will increase (Butt & Butt, 2015). However, interviewee 2 and 7 implicated that, “*CPEC gives Pakistani SMEs an opportunity to internationalize, and import cutting edge tools and services to produce innovative products.*” This means that the SMEs will have global exposure and will be able to economically grow. Similarly, Aqeel, (2016) and Wei, Ali, & Huang, (2016) too implicated that, the CPEC will include energy projects, transport infrastructure sector projects, sea port related projects, and mass transit projects which will help the industries in involving themselves in SCM. Therefore, these projects will not only attract the industries but also other smaller companies and help improve the economy.

### **Impact of CPEC on supply chain of SMEs**

As mentioned in the previous section, it is believed that CPEC will help Pakistani SMEs an opportunity to internationalize, and import cutting edge tools and services to produce innovative products. It is perceived by the interviewees that CPEC help the SMEs to large economic opportunities not only to Pakistan but will physically connect China to its markets in Asia, Europe and Africa. This will help the SMEs to purchase and supply their products to markets in Asia, Europe and Africa. In addition, it is also perceived by the interviewees that, “*SCM will go beyond expansion of trade routes to China.*” Moreover, in the current situation the SMEs of Pakistan are under economic instability, CPEC is expected to improve the economic stability and help growth business (Baymout, 2015). With increased transportation, the SMEs will be able to purchase and supply more efficiently and at low cost (Butt & Butt, 2015). The infrastructure of business will, completely change in the SMEs of Pakistan.

### **Conclusion**

The main aim to study is to find the impact of CPEC on supply chain management of SMEs in Pakistan. China Pakistan Economic Corridor (CPEC) refers to the network of structures that aim at establishing connectivity between different regions of the economic corridors of the two countries. In this regard the current study conducted an exploratory study on representative of 10 SMEs in Pakistan. It is implicated according to the perspectives of the interviewees that CPEC will help Pakistani SMEs an opportunity to internationalize, and import cutting edge tools and services to produce innovative products and with increased transportation, the SMEs will be able to purchase and supply more efficiently and at low cost.

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