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Article: **China Pakistan Economic Corridor (CPEC), its Role in Pakistan Economy and its Social Environmental Status**

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China Pakistan Economic Corridor (CPEC): The Roadway to Socio-Economics Development of Pakistan

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Abstract

China Pakistan Economic Corridor (CPEC) is a game-changer project for Pakistan that can enhance Pakistan's economic, social and geopolitical status. It is the most effective deal with any country in Pakistan history. It is a plan to kick start practical cooperation between China and Pakistan, which is expected to propel Pakistan's and China's already strong relationship to new heights. Hope for economic transformation and assistance in overcoming Pakistan's power shortage. The strategic significance of CPEC must be described and studied from various historical, economic, cultural, and political perspectives. It aims to construct a network of roads, highways, and railways from Khunjerab, Pakistan's border with China, to Gwadar. So, this initiative presents a significant opportunity for Pakistan's economic growth. Because of its depth, Gwadar is an important port. This article discusses the economic gains from CPEC for Pakistan and its effect on infrastructure, GDP growth, trade, and revenue generated. Moreover, the effect of CPEC on the social and environmental aspects is also explained.

Keywords: BRI, CPEC, China, Pakistan, investment, economic corridor, power shortage

Introduction

CPEC is a framework leading to regional connectivity and a strong relationship between Pakistan and China. This project will provide benefits to both of the countries and have a positive impact on other countries to provide them with benefits to the whole Asian Republic. It ensures the increase in the linkages that are geographically connected, ~~which will cause the improvement~~ of roads and transport services system

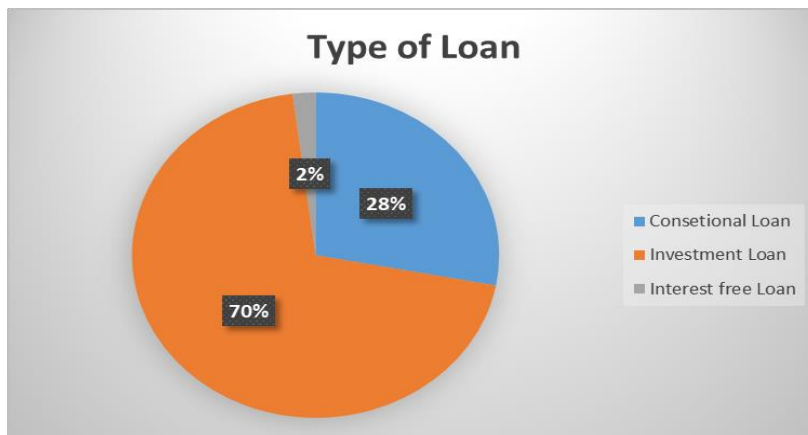
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and ensures the free change of knowledge with people by contacting them directly. It will ultimately increase the academic, cultural and regional knowledge of people. It will work to enhance the activity of higher volume of flow of trade and business which will cause the increase in the production activities and enhancing cooperation by win model leading to a well-connected and integrated region.

Pakistan and China initiated the plan for CPEC in April 2015 where they signed 51 agreements with a total of \$46 billion Chinese investment for the next 10 to 15 years. CPEC provides the way forward towards economic betterment in a specific region of the whole world. It is a source of developing peace, cooperation, and development in the nearby countries. This corridor is a lightning hope for the future because of an improvement in economic growth, development, collaboration and peace. This project is specifically critical as it aims to improve the infrastructure for both of countries. It is a mutually beneficial project that will meet both countries' needs, specifically the supply shortage for Pakistan. It is significant as it is providing an alternative secure route to China for importing energy and finding new markets for its goods and services to sell around the world. In the case of Pakistan, it will help to improve and overcome the energy crisis, infrastructure development, eradicate poverty by providing employment, and ensure peace and prosperity in provinces.

Figure 1

Source: pbs.gov.pk



The ministry of planning and development in partnership with the present development and reform commission (NDRC) China manages the CPEC activities in Pakistan. A Joint cooperation committee has been established by both countries that focus on the four major prospects: the transport infrastructure, energy, the industrial Corporation, and the Gwadar port. There are numerous obstacles to CPEC, including political and economic development, geostrategic dynamics, and various security threats. As the world's second-largest economy, China provides Pakistan with significant opportunities. Chinese investment plays an important role in the economy, providing Pakistan with several benefits. The positive aspects of the CPEC for Pakistan include overcoming the energy crisis, infrastructure growth, poverty alleviation, peace and stability in provinces, and economic development.

The research objectives of the study are:

- a) To explore the impact of CPEC on the GDP of Pakistan.
- b) To study the effect of CPEC on employment.
- c) To explore the environmental and social consequences of CPEC on Pakistan.
- d) What is the contribution of CPEC to the energy sector?
- e) CPEC and the network of road and rail transport.

The rest of the sections are arranged so that the literature review is written in the second section and the third section is about the impact of CPEC on Pakistan's economy. Description of CPEC projects is given in the 4th section The 5th section is reserved for the environmental and social aspects of CPEC. The conclusion is given in 6th section.

Literature Review

Economic corridors are infrastructure networks within a given geographic area that are intended to promote economic growth. These projects may be built within a nation, in countries, or between regions. Asia, Africa, and other regions do have corridors. These projects create a chain linkage of supply and demands in the markers (ADP, 2016). Corridors are designed as economic corridors, to combine hard infrastructure, transportation and logistics services, and institutional development from the outset.

Ali et al. (2018) Suggested that energy crisis has hindered the economic progress of Pakistan, but CPEC ended this crisis as their CPEC energy projects are meeting 75% of energy crises. They also highlighted the projects that should be priorities. They reported that energy shortage had decreased the progress in almost every sector, including agriculture, textile, industry and even services. They also proposed solar panels to reduce energy shortages for small and medium businesses.

Laghari (2013) noted the negative side of CPEC and claimed that passing 7000 trucks per day through the northern area means emission of 36.5 million tons of CO₂ that will decrease glaciers mass and cause extreme floods. (Nabi et al., 2018) suggested electric vehicles to overcome this problem. Qazilbash (2017) predicted water famine in a decade because of glacier melting and water based industrial activities.

(Kanwal et al., 2019) conducted primary research about the attitude of the business community towards the CPEC. The results, based on 255 questionnaires, showed the positive attitude of Karachi business community. Importers, exporters and transporters were top on positive attitude.

Previous studies explored the single dimensional assessment of benefits of CPEC, this study has explored the multidimensional economic gains from CPEC to Pakistan and what are the future prospects

Economic Impact of CPEC on Economic Condition of Pakistan

China is a country with a rising economy in the world and can prove as a great support to strengthen the economy of Pakistan. The bilateral relations are now strengthening in different sectors by developing infrastructure and starting energy projects. This is a great project and both of the countries have great expectations from it. It will play an important role in enhancing and promoting the economy of Pakistan and will work to increase social and infrastructural development.

CPEC Effect on Gross Domestic Product

The value of CPEC projects was \$62 billion in 2020 (The Times of India. 9 August 2020). This initiative can generate new job opportunities

for new phases into the labor force. Pakistan is aiming to achieve 8% growth rate as its set goal. The inflation rate should fall to 1 digit from the year 2018 to 2025. Pakistan's vision for 2025 is that there should be an increase in exports from \$25 billion to \$50 billion. The main objective of increasing exports is the long-term sustainability and development of the country.

Hussain (2015) concluded that this large project would aim to solve the economic conditions and is expected to stumble to slow growth to add 2% GDP. This project is also expected to lessen the economic barrier of 22 billion dollars which is about 7.6% of the GDP, with a concessionary loan. The Sino investments are said to accelerate the GDP to 6%, influencing FY 2016-18. The investment of 18 billion dollars will undertake Gwadar port, Hydro plants for 50-80% and the share for coal is 20%. The indirect impacts will lead to an increase in the 15000 MW power in the national grid station, which accounts for 74% of the present energy demands of Pakistan.

This will affect private sector activity and its productivity. Private investment has averaged 9.6 percent of GDP during the last five years, compared to 12.7 percent in the previous five years. At the same time, private sector credit has averaged 9.6 percent of GDP. Pakistan's GDP rate has dropped from 28.8 percent to 12.6 percent, and growth could reach 6% this year, compared to the previous year's rate of 28.8 percent. The economy can be boosted by supplying 10 GW of electricity to 4.1% of the population. Due to new power projects, coal consumption and energy consumption increased by 16 percent in 2018, compared to 1% in 2014. Cement production has increased by 1.3 to 2.3 million tonnes, indicating a significant increase in demand. Pakistan's purpose is to enhance the GDP rate from 12.6% to 20% in the coming year.

Economic Zones

Under the CPEC, 8 zones have been planned in various parts of Pakistan. The largest private bank in China, Industrial and the Commercial Bank (ICBC), and Habib Bank Limited Pakistan (HBL) are partnering to establish the economy in Punjab and other provinces. The Pakistani government introduced a special package for Economic Zones, including

tax exemption for ten years and duty-free importation of machines and equipment. Pakistan's two largest banks are playing a key role in the development. For investors, Pakistan's government has designated 34 Economic Zones, 29 Industrial Zones, and 22 Special Economic Zones throughout the country. These special economic zones will stimulate the economy and create millions of jobs and business opportunities for Pakistanis, reducing youth unemployment and increasing incomes.

CPEC's Impact on Trade

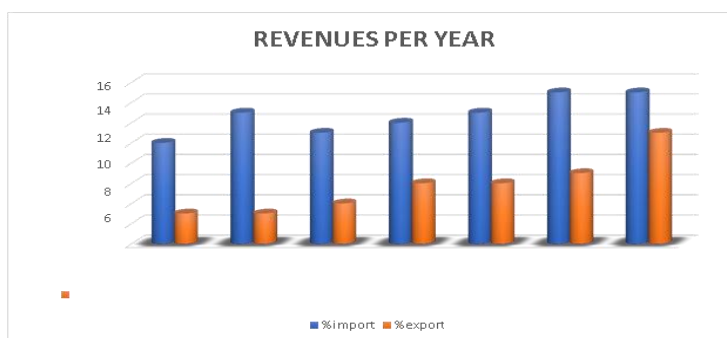
One of the signs of a growing country is sustained and high foreign trade; the terms of trade and investment are linked to country trade, business, and capital. CPEC will facilitate trade activities to enhance recent trade in Pakistan and neighboring countries, improving the economic situation of Pakistanis directly or indirectly. Xinhua (September 2021) reported that Pakistan's trade volume with China has increased from \$ 4.8 billion in 2007 to 16.4 billion in 2018.

Revenue Increase

The CPEC is a trade project that will transport world imports and exports from Gwadar to China and then to the rest of the world, with Gwadar being the central most center. Gas and oil are projected to bring in about \$1,000,000 in sales. Kiani (2019) reported that 40000 Pakistani and 80,000 Chinese are working on CPEC projects and the Pakistani official claims that there will be US \$ 6 billion to Us \$ 8 billion revenue per year from tolls tax. Such an amount would be beneficial to Pakistan's economy.

Figure 2

Source: pbs.gov.pk.



Components of CPEC

China Pakistan economic corridor is the collection of projects costing \$6 billion for their construction intending to expand and upgrade the infrastructure of Pakistan and to enhance the economic links between Pakistan and China. It is the extension of China's ambitious one belt, also termed as one road step taken by the Chinese government. This project is there to improve the living standards of the people of Pakistan and China by constructing an economic corridor enhancing the connections, investments, economics, trade and logistics for regional connectivity. It includes integrated transport, energy cooperation and agriculture development to eradicate poverty.

People to people communication and tourism communication are also the main agendas of this project. This project also seeks attention because of providing financial cooperation and human resource development. The five main components of China Pakistan economic corridor are as follow:

- i. Gwadar (it includes the port, city and also involves the socioeconomic development project)
- ii. Energy demands (Coal plant, wind, solar and liquefied natural gas (LNG))
- iii. Transport (road, rail and aviation)
- iv. Industrial development
- v. Mutual area of interest.

Energy Demands

The majority of the CPEC investment (US\$33.79 billion) will be used to construct power plants in Pakistan that will generate 17045 MW of electricity, with 10,400 MW of electricity generation capacity being built first. This massive investment will be made to use established energy resources and address Pakistan's energy crisis. The official website of CPEC (cpec.gov.pk) shows that the installed capacity of various power projects is 1110 MW, under CPEC. In 2020, 14 power projects has been completed. The majority of these power plants produce electricity. Coal and Hydel technologies are used in the majority of these power generation programs. Except for two power projects with a combined capacity of 1980 MW, all coal prioritized power projects would use import coal.

Along with the energy generation, CPEC calls for the urgent construction of an 878-kilometer transmission line from Matiari to Lahore.

This power line will have a maximum load of 4000 MW, with half of the transmission network already completed. A transmission line from Matiari to Faisalabad is also being built.

Seven of the high-priority energy projects have been established, with the rest projects under construction. As a result of FDI, 19 billion dollars have been allocated in energy projects, with 3240 MW of power added to the power network by the end of 2018.

The development of all energy generation by 2020, as well as energy imports through energy tunnels, will improve Pakistan's energy supply stability. This energy supply is projected to add 2.05 % to current production and increase growth to 7.9 percent. Energy projects alone have generated thirty thousand jobs as a result of these project-related investments (Kiani, [2019](#)).

The Port of Gwadar

Gwadar port will play a critical role in the growth of the landlocked country as part of OBOR. The following projects have received a total investment of US \$ 792.62 million for the construction of Gwadar.

- a) The creation of Gwadar University, with a special emphasis on marine sciences and other disciplines.
- b) The Gwadar industrial free zone will be home to forty different types of companies. Stainless steel and petrochemical industries are two major industries that have been prioritized.
- c) The projects for the fish promotion and the creation of a boat-building industry would be soon launched.
- d) In Gwadar smart city, institutes concerning vocational and training materials, hospitals, water supply, and distribution will be constructed. This will help to improve education, skills, and health. The main projects are the construction of terminals, the East-Bay expressway, which will link Gwadar with the Makran coastal highway, and the Airport present on the port. The Gwadar airport terminal and the East-Bay overpasses are complete 40% and 60%,

respectively. Thirty businesses have now spent 474 million dollars in the free sovereign territory. Pakistan is expected to become a trade center after these initiatives.

Infrastructure for Transportation

These started projects aim to build new roads and routes to enhance the trade in the country. The transportation system will include a wide network of roads, highways and electricity systems. 2500 two 3000 kilometer roads will link Gwadar port. One of the 8 road and railway infrastructure improvements has been finished and is still working, and about 70% of the Karachi- Lahore road work has been completed.

The transportation infrastructure investments would improve trade within Pakistan while also increasing economic integration with China. Pakistan would switch its trading routes with China and other countries from air or sea to road transport because it is less expensive. This would boost agricultural commodities exports in the global market, historically prevented due to high travel costs. As a result, the CPEC's powerful transportation system would minimize internal transportation costs and time, giving it a competitive edge in the international market.

Collaboration between Industries

The development of industrial areas is one of the main areas of international cooperation under this project, and it is regarded as a reliable method for fostering economic growth and job prospects. In all of Pakistan's provinces along the corridor, 9 economic areas with specific products or services will be created. Local manufacturing, aided by local raw materials and labor, would accelerate the urbanization process and increase earning potential (estimated at 2 million jobs), resulting in a higher standard of living, lower imports, and stable prices.

The establishment of steel and petrochemical industries is causing an increase in energy demand in the economy. The growth rate of FDI increased by 12.75 percent in FY-17 as a result of the CPEC development. This project will overcome the increasing demand for industrial activity and energy products in the market.

This result shows that Pakistan's development will generate robust economic activity as a result of massive investment in electricity, trade, the Gwadar port, and different industrial areas. This could lead to high economic growth driven by industrial activities, increased energy usage, increased trade, and a high level of FDI. The study supports a strong connection between the variables mentioned above and energy consumption. As a result, it's critical to calculate their effect on Pakistan's potential energy consumption under the CPEC scenario.

Employment

According to a report published by Stakeholders, China started projects are supposed to increase over 2 million employment and income to Pakistan's economy, causing an increase in the country's GDP growth rate to 7.5 percent. According to the study, between 2015-30 these mutual projects will generate 700,059 direct jobs increasing the nation's GDP per capita to 7.5 percent, from its present rate of 5%. Kiani (2019) estimated that Gwadar-related projects had provided direct employment of 60000.

Digital Pakistan

This project has devised an impressive program through which we can explore a variety of opportunities beyond energy projects. With the introduction of CPEC, fiber optics and satellite Internet access will be common in remote areas, which cause an increase in the information about facilities available. Furthermore, once the big infrastructure is completed, the favorable atmosphere may attract an increasing number of multi-national telecommunication companies.

Social and Environmental Status

The ongoing project also involves the social prospects and social development such as the Environmental Protection and providing educational opportunities to the people of Pakistan. The development of infrastructure may promote the educational level of the local people living in the country. This project is potentially important because, along with infrastructure, it aims to provide the health care facilities providing people with good health and well-being. The routes for many projects are passing through remote areas. The areas where the educational facilities are less

may benefit from basic education, which will aid them in getting jobs. One of the major causes of the low literacy rate in Pakistan is the long distance between residents and educational institutions. So, CPEC is providing transport facilities to the people to help them get an education.

The growing number of Pakistani in China suggests that this mutual relationship indirectly impacts education levels. It sends out encouraging signals that good studies will be facilitated in Pakistan after the projects are fully operational. China and Pakistan have allocated a significant amount of money to help boost communication and education. Power, defense, infrastructure, technology, and local community education are among the major benefits to be obtained from CPEC megaprojects. The megaprojects would address Pakistan's energy crisis.

The project is likely to increase the number of academic activities in the country and will lead to a decrease the gap between education and people. It will distribute the benefits of schooling in the communities where the infrastructure is promoted. All of which will help to boost the educational rate. Pakistan has some serious concerns like increasing pollution and unhygienic conditions of the country leading to the illness of people. This initiative may reduce the pollution level and may cause a betterment in the atmospheric condition by encouraging eco-friendly practices. In contrast, CPEC megaprojects may also pose a danger to the environment and policymakers should consider health at the priority while making policy for the construction activities of the project. China is moving quickly and has already developed an environmental safety strategy for it, while Pakistan is still developing and formulating strategies. Numerous projects can have a major environmental impact, but in the meantime, successful strategies are needed for long-term environmental protection. The three main streams of CEPAC are:

1. Natural environment: It involves the subjects like pollution indicators, noise, and environmental deterioration and focuses on waste disposal-type activities.
2. Economic: the second stream of this project is to enhance the economy of the country and to promote the well-being of people. The well-being of people is ensured by providing them with the necessities, job opportunities, education and many other things.

3. Infrastructure: (technology, health, access to markets, and distribution in supply chains, among other things).

FDI allows host companies to spend sufficient funds on CSR and environmental initiatives. It is also expected to raise inflows of goods into the manufacturing sector, which can be used to fund eco-friendly projects and improve the health planning of people. Because of its possible benefits and involvement in developing a favorable climate, CPEC was named an "environmental corridor".

Sustainable Development

Because of their positive effects on health and the environment, SDGs have become the area of interest for people worldwide as they promote sustainability in the surroundings. In remote areas of Pakistan, the CPEC provides easy access to basic services such as health, education, transportation, markets and banking. Improvements in health and education are important factors in long-term sustainability, and they contribute to a higher standard of living. The binary logistic regression analysis revealed that CPEC would aid in the socioeconomic growth of the study region, and socioeconomic development is the stepping stone to long-term sustainability (Abid & Ashfaq, [2015](#))

As per globalization theory, the Belt and Road Initiative (BRI) would promote social interaction and connectivity, technical assistance, and inter-connectedness in the area. The transition of human resources, information, and technology will play a critical role in Pakistan's growth under the CPEC. Physical capital is anticipated to develop the urban sector as a result of industrialization, allowing Pakistan's economy to remain stable. Infrastructure-driven growth is the bedrock of socioeconomic progress. The CPEC intends to make good use of natural resources and financial assets. Production, globalization, and infrastructure-led development theories all confirmed the evidence of this report. Many reforms based on a structural basis are done in the industries to strengthen the economics of the country. Furthermore, the ongoing project has been a source of FDI, which again will aid in the stabilization of the country's tremors. It is a multifaceted project that falls outside the scope of the BRI, Pakistan's leading development process for long-term development. The

evolution of infrastructure would aid in economic growth, poverty reduction, and improved living conditions- people's quality of living. Additionally, it will aid in eliminating the inflation chasm between various regions. Only by working together will we achieve the aim of sustainable growth by a multifaceted architecture program.

Conclusion

This discussion is concluded that CPEC has increased the economic growth of Pakistan. Hundreds of thousands of people have got direct jobs. Shortages of energy have decreased tremendously. Road networks have improved. Even it positively impacts the environment because the latest power projects are primarily based on non-renewable energy projects.

China Pakistan economic corridor is Chinese investment comprising of infrastructure development, energy production and working for social development. These sectors are directly or indirectly contributing through increasing gross domestic product and providing employment opportunities to the people and thus raising their social-economic status. The study illustrated the impact of the project on Pakistan's gross domestic production, its energy betterment, improvement in its infrastructure, and a better vision of Pakistan in terms of employment opportunities. China invested \$62 billion, which \$20 billion has already been spent under different projects. This investment is boosting Pakistan's economy and has reached the projects under CPEC involved transportation, trade and other construction activities. As long as the CPEC is functional, commercial and socioeconomic zones on the path of the corridor will also increase labor productivity. The CPEC would positively affect economic growth by providing residents with jobs and business opportunities. The CPEC also facilitates cultural transmission through language and academic exchange programs. After constructing rural infrastructure, rural areas would be connected to cities. Rural development is a critical component of long-term development. The CPEC may evolve as a long-term growth program in Pakistan.

Future studies can explore the future of CPEC in Pakistan in terms of how it can help in developing economic integration with the other

neighboring countries and create connectivity with the Central Asian countries.

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