

# Impact of Gwadar Deep Seaport Development under CPEC on Poverty Alleviation in Gwadar City

Umar Farooq<sup>1</sup> and Bilal Haider Subhani<sup>2</sup>

<sup>1</sup>School of Economics and Finance, Xi'an Jiaotong University, China

<sup>2</sup>School of Economics and Management, Xidian University, China

## Correspondence:

Umar Farooq: [umerrana246@gmail.com](mailto:umerrana246@gmail.com)

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## Impact of Gwadar Deep Seaport Development under CPEC on Poverty Alleviation in Gwadar City

Umar Farooq

School of Economics and Finance, Xi'an Jiaotong University, China

Email: [umerrana246@gmail.com](mailto:umerrana246@gmail.com)

Bilal Haider Subhani

School of Economics and Management, Xidian University, China

Email: [bilalsubhani5@gmail.com](mailto:bilalsubhani5@gmail.com)

### ABSTRACT

*The purpose of this study is to investigate the impact of the deep seaport development project under the China-Pakistan Economic Corridor (CPEC) on poverty alleviation in Gwadar city. A review of past research highlights the feasibility of similar projects that have been initiated in other countries and their positive outcomes for regional economies. Previous literature indicates that port development projects enhance local economic growth and help reduce poverty in the region. This study uses three key indicators to measure poverty: education level, health facilities, and living standards. The statistical analysis reveals that improvements in these three indicators have led to a decrease in poverty levels in the region. Under CPEC, various development projects have been launched across the country. However, several issues can limit the benefits of these projects, such as political interference, pressure from vested interest groups, and adverse effects on the natural environment. The study recommends that improving regional connectivity and fostering social interaction among inhabitants are crucial for maximizing the benefits of these development projects and effectively alleviating poverty.*

**Keywords:** CPEC, gwadar city, deep seaport development, poverty alleviation, economic growth, regional development, environmental impact, socio-economic impact, regional connectivity

### 1. INTRODUCTION

The impact of the Gwadar Deep Seaport Development under the China-Pakistan Economic Corridor (CPEC) on poverty alleviation in Gwadar City is a significant area of study. This development project holds the potential to bring about various socioeconomic changes in the region, particularly in terms of poverty reduction. By examining the effects of the port development on key indicators such as education, health facilities, and living standards, researchers can assess its overall impact on poverty levels in Gwadar City.

Through the creation of employment opportunities, improvement of infrastructure, and stimulation of economic growth, the Gwadar Deep Seaport Development has the capacity to uplift the living standards of residents and mitigate poverty (Taslim, 2023). Additionally, the integration of Gwadar City into regional and international trade networks facilitated by the port development can further enhance economic prospects and contribute to poverty alleviation efforts (Haq & Faiz, 2022).

Analyzing the direct and indirect effects of the port development on various aspects of poverty, such as income levels, access to basic services, and overall quality of life, can provide valuable insights into its effectiveness as a poverty reduction strategy (Sun & Scola, 2023). Moreover, exploring the role of government policies, private sector investments, and community engagement in maximizing the poverty alleviation potential of the port development project is essential for formulating evidence-based recommendations for sustainable development in Gwadar City (Tolga, 2021).

When development begins in any region, it becomes essential to invest in the infrastructure to support the region's economic activities (Zou et al., 2022). The aim of this study is to evaluate the CPEC development projects and their role in poverty alleviation in Pakistan, particularly in Gwadar. Located on the Arabian Sea, Gwadar is a vital port city. The CPEC initiative commenced on May 22, 2013, and within five years, it has significantly impacted Pakistan's development in sectors such as energy, logistics, and investment.

**Table 1: Investment Summary in Different Projects in Gwadar**

Sr.no.	Project title	Estimated Cost (US\$ M)
1	Gwadar East-Bay Expressway	140.60
2	New Gwadar International Airport	230.00
3	Construction of Breakwaters	123
4	Dredging of berthing areas & channels	27
5	Development of Free Zone	32
6	Necessary facilities of freshwater treatment, water supply and distribution	130
7	Pak China Friendship Hospital	100
8	Technical and Vocational Institute at Gwadar	10
9	Gwadar Smart Port City Master Plan	4
10	Total	796.60

Continuous investment in various projects is expected to contribute to poverty reduction in the area. Approximately \$1 billion is estimated to be invested in Gwadar through CPEC projects. Gwadar port serves as a crucial link between the Silk Road Economic Belt and the New Maritime Silk Road.

Focusing on specific projects, the Gwadar East-Bay Expressway, with an estimated cost of \$140.60 million, is scheduled for completion in 2018. Funds have been approved by the Executive Committee of the National Economic Council (ECNEC), and construction has begun. This six-lane, 19.5 km road will improve traffic flow and benefit the Gwadar region significantly.

The New Gwadar International Airport, costing \$230 million, will enhance Gwadar's connectivity to the world and boost tourism. This development is



expected to foster new business ventures and attract international investors, creating employment opportunities in the region. The construction of breakwaters, with a budget of \$123 million, will protect Gwadar from heavy sea waves and encourage investment in real estate, small businesses, and industrial projects.

***Figure 1: Construction at Gwadar***

Gwadar has become an attractive destination for entrepreneurs and international investors due to the establishment of various industrial hubs and municipal

projects, including the launch of 4G networks and infrastructure improvements. Increasing investment has proven to be an effective strategy against poverty and has promoted peace in the region. Residents have shown great interest in these projects.

Engaging the local workforce in diverse projects according to their skills will help utilize the emerging talent in Gwadar. Other proposed projects under CPEC include the Gwadar Coal-fired Power Project, HUBCO coal power plant, Gaddani Power Park Project, Technical and Vocational Institute at Gwadar, Quetta Mass Transit, Quetta Water Supply Scheme from Pat Feeder Canal, Gwadar Smart Port City Master Plan, Bao Steel Park, petrochemical facilities, stainless steel industries, and the development of Gwadar University. These projects, at various stages of development, will stimulate the economy of Baluchistan and positively impact Pakistan's overall economy. They will improve social and economic indicators and reduce poverty by creating jobs and increasing wages.

This study consists of four chapters: an introduction, a literature review, data and methodology, and a conclusion with future directions and limitations.

### **1.1. Research Questions**

- Given the significant investment, are there observable outcomes in poverty reduction in the region?
- Based on the experiences of similar port development projects in other countries, can we expect similar outcomes from Gwadar port development?

### **1.2. Research Objective**

This research aims to analyze whether the development of Gwadar port will help alleviate poverty in Gwadar. The study focuses on three key indicators used to measure poverty: health, education, and living standards.

## **2. LITERATURE REVIEW**

### **2.1. Port Development and Economic Growth**

There exist divergent perspectives regarding the economic advantages of port development and their impact on both national and local levels. Optimistic viewpoints assert that port infrastructure development brings substantial economic and social benefits to the local economy, particularly in the regions where ports are situated. Conversely, pessimistic views tend to emphasize solely the economic advantages of port development (Suzuki, 2022).

Well-developed and efficiently functioning seaports are envisioned to catalyze local economic growth by reducing transport costs and facilitating increased cargo

throughput. Conversely, inefficient ports fail to deliver such benefits (Apata, 2021). Key indicators such as Foreign Direct Investment (FDI) and the development of seaports play a significant role in driving local economic growth (Saidi et al., 2020). Numerous studies have demonstrated the malleability of urban development by seaport activities, particularly in Asia, where there is a close relationship between port development and local economic growth (Ma et al., 2021).

However, it's worth noting that the development of ports does not always translate into unequivocal economic benefits. Studies conducted in China on the relationship between port-city development often reveal contradictory outcomes, particularly concerning the relationship between economic growth and port logistic industry development. In some cases, economic growth may even reverse after a certain stage of port logistic industry development, as the benefits derived from this industry may overshadow other economic advantages (Bamrungbutr, 2020). Several research models suggest that the benefits of port-city development diminish after reaching a certain stage of port development (Murphey, 1989).

## **2.2. Economic Growth and Poverty**

Port development serves as a catalyst for economic growth, which in turn contributes to poverty reduction in specific regions. Economic growth, as a strategic element, plays a crucial role in poverty alleviation in conjunction with other factors (Jentsch, 2001). Reports from the World Bank (1990) and the Asian Development Bank (1994) highlight the association between poverty eradication and regional economic growth. Increased income levels resulting from local economic growth have been linked to poverty reduction in specific regions (Balasubramanian et al., 2023).

## **2.3. Employment Level and Poverty**

Two primary factors contribute to poverty at the city level: employment level and wage levels. Economic growth typically leads to an increase in employment opportunities, thereby enabling local workers to demand higher wages (Maestas et al., 2023). Higher wages, in turn, improve household living standards by increasing income levels. However, there are instances where the relationship between economic growth and wage levels may be reversed. For example, economic growth may lead to higher wages at the top level but not at the middle level (Herwartz & Walle et al., 2020).

## **2.4. Key Indicators of Poverty**

According to the Pakistan Economic Survey (2013-2014), poverty is defined as a condition in which individuals or households lack essential goods for living, including education, health facilities, food, and income necessary to fulfill basic needs. Baluchistan faces significant poverty despite its abundant natural resources, with districts such as Umerkot, Harnai, Panjgur, Killa Abdullah, and Kashmore experiencing the highest poverty levels (Nasir, 2016).

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## **2.6. Case of Port Development in Other Developing Countries**

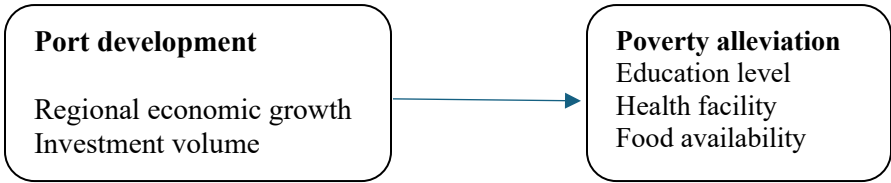
In Bangladesh, port development projects have played a vital role in economic growth, with the Chittagong port transforming the country into a globalized economy and enhancing international trade volume. The port has become an economic hub, stimulating various economic activities and contributing to poverty reduction and higher wages (Monir, 2016-2017).

The Colombo port in Sri Lanka has made an extraordinary contribution to economic growth by strengthening the domestic market and providing direct benefits to local residents. Recent expansions have further enhanced the port's functionality and utilization (Ofstad, 2011).

A study in China suggests that port development significantly impacts the economic growth of host cities, albeit with varying effects at the regional and provincial levels. Sea port investments have a discernible impact on economic expansion through increased cargo traffic (Shan, 2014). Similarly, the Jawaharlal Nehru port in Mumbai has bolstered regional economic activities and absorbed a significant workforce, thereby reducing poverty levels (Ray, February 15, 2004).

The aforementioned cases demonstrate that port development in developing countries stimulates regional economic growth and promotes employment. Literature consistently supports the notion that economic growth leads to a decrease in poverty levels.

3. THEORATICAL FRAMEWORK



*Figure 2: Relationship of Variables*

Port development is measured by the level of investment, serving as a proxy for estimating the poverty level. The study incorporates three indicators of poverty: education level, health facility, and food availability.

**3.1. Port Development**

Port development encompasses all infrastructural and non-infrastructural activities aimed at enhancing the port's capabilities. Infrastructural activities include civil engineering works to bolster business operations, while non-infrastructural activities involve efficient handling of business activities, improvement in legal implications, and technical support for sustainable development.

**3.2. Regional Economic Growth**

Regional economic growth encompasses the expansion of various physical and non-physical activities. Physical activities entail the expansion of existing businesses or the establishment of new ventures, and an increase in overall industrial production. Non-physical activities include the improvement in the living standards of local residents and growth in literacy rates, among others.

**3.3. Investment Volume**

The total investment volume under CPEC in different projects in Gwadar amounts to approximately \$800 million. The study investigates whether this investment volume has contributed to alleviating poverty levels in Gwadar.

**3.4. Poverty Alleviation**

Poverty alleviation is measured through various indicators such as employment level, wages level, and their impact on education, health facilities, and living standards of the population. The investment in the region has spurred different economic activities, leading to an increase in employment opportunities and wages levels due to high labor demand.

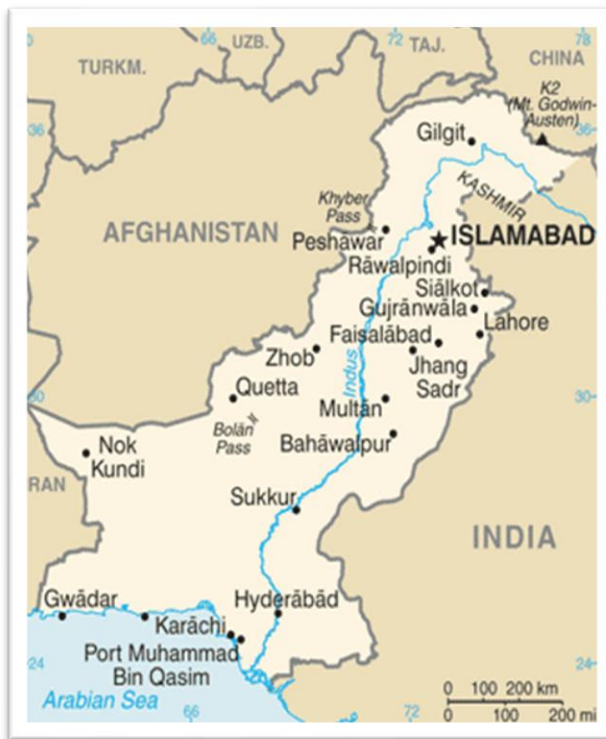


## 4. A CASE OF GWADAR

### 4.1. Historical Background of Gwadar

According to historical records, in 325 B.C., an admiral of Alexander the Great arrived in modern Makran and observed the area as dry and mountainous, inhabited mostly by fishermen. Following the dissolution of Alexander's empire, Seleucus Nicator, one of his generals, assumed control of the region in 303 B.C.

Subsequently, in 644 A.D., the Muslim commander Hakim bin Amr al-Taghlabi crossed the Makran border and conquered the area under the orders of Hazrat Umar (R.A), the second caliph of Islam, who decreed that the region should be under Muslim dominion. Gwadar town was later conquered by the Muslim army under the leadership of Muhammad bin Qasim in 711 A.D.



*Figure 3: Map of Pakistan*

From the 8th century to the 16th century, the area was subject to contestation between the Mughals and Safavids. In the 16th century, the Portuguese extended

their control to Gwadar, and subsequently, it came under the rule of various Baloch tribes.

In 1783, the Sultan of Muscat, Sultan bin Ahmed, and his brother Saad bin Ahmed engaged in discussions with the Khan of Kalat expressing their interest in the region. Nasir Khan I of the Ahmadzai family gifted the Gwadar port to the Sultan, who appointed a deputy (Wali) and ordered the construction of a fort to safeguard Gwadar Bay. Following the Afghan War, the area was annexed by the British government, and M. Goldsmith visited the region in 1863 as an assistant political agent. The British initiated development projects in the area, including the establishment of a telegraph in 1894 and a post office in 1903.

In 1947, while other regions were merged with Baluchistan, Gwadar remained separate. However, in 1954, the Pakistani government conducted a geological survey following the local inhabitants' desire for Gwadar to join Pakistan. Subsequently, Pakistan officially requested the requisition of Gwadar port from the Sultan of Oman. After formal negotiations and mutual agreements, Gwadar was purchased by the Government of Pakistan for USD \$3 million. Following this agreement, Gwadar became an integral part of the state of Pakistan. The feasibility study for recognizing it as a deep-sea port was conducted in 1993. Phase 1 of Gwadar's development was completed in 2005, and in 2008, the first shipment, containing 52,000 tons of wheat from Canada, was made.

Today, Gwadar has emerged as an economic hub, gaining prominence as a port following the initiation of the CPEC initiative on May 22, 2013. It became operational when the first cargo arrived from China on November 16, 2016.

#### **4.2. Gwadar port**

Like the cases mentioned earlier, the Gwadar port has generated significant economic opportunities and holds the potential to unlock further beneficial outcomes soon. The development of this port is projected to create a total of 40,000 jobs, with 20,000 of these opportunities reserved for residents. Additionally, new business ventures such as real estate, hospitals, hotels, and training institutions have begun to emerge in the region, further stimulating economic growth.

Moreover, the establishment of the Gwadar port has spurred scientific discoveries in the area. For instance, the number of new mobile SIM cards in the region has increased from 100,000 to 200,000 (XINHUA, May 15, 2018).

Furthermore, as part of the Gwadar port development projects, a desalination plant has been installed to purify 100,000 gallons of contaminated water per day for drinking purposes. Additionally, Chinese companies have entered joint ventures

with domestic industrialists, promising further job opportunities and economic growth in the region (TASLIM, March 12, 2018).



*Figure 3: Logistic at Gwadar Port*

#### 4.3. Issues

Port development indeed offers numerous benefits that can bolster local economies and transform regions into economic hubs. However, excessive political interference and unfair market forces often undermine the connectivity between cities and ports (Van Klink, 1995). Pressure networks exacerbate these challenges, making the advantages of ports costly and sometimes futile (Noteboom, Theo E., & Rodriguez, Jean Paul, 2005).

Furthermore, operational and development activities at ports can have detrimental effects on the local natural environment. Shipment activities, which involve the use of heavy machinery for loading and unloading, contribute to environmental contamination (ACCIARO, 2014).

Port development initiatives may yield considerable economic and social growth, but they can also degrade the environmental quality by emitting pollutants into the air and contaminating seawater (GRIFOLL, 2011). These adverse impacts can erode the confidence of the local population, hindering the transparent functioning of ports.

#### **4.4. Methods to resolve**

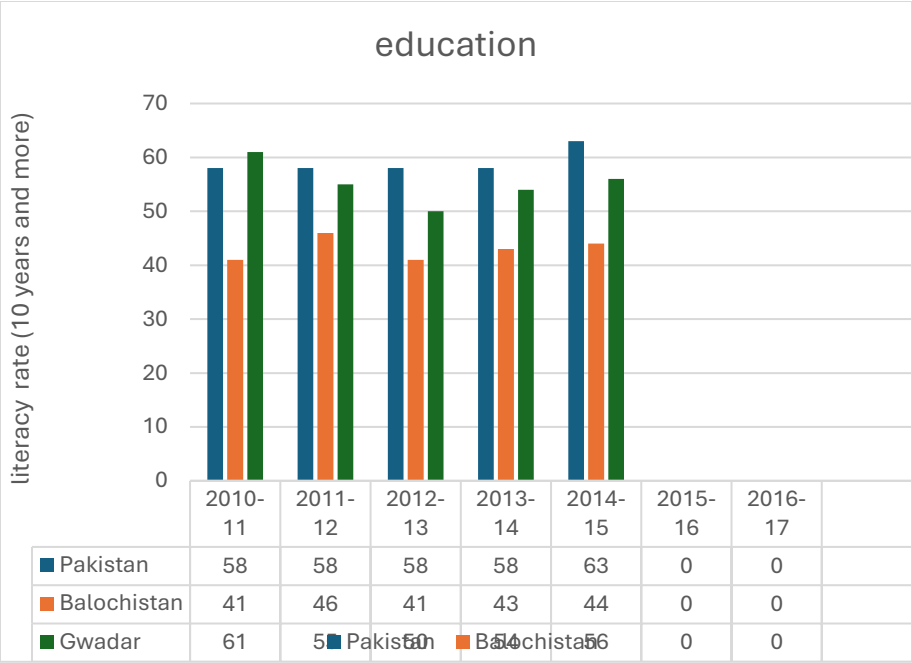
To address the challenges associated with port development, the involvement of stakeholders is crucial, as it provides a competitive edge in resolving these issues (Ashrafi et al., 2020). Port authorities should engage experts in port-related policy formulation and examine the theoretical viability and feasibility of policies intended for port development. Additionally, they should conduct thorough analyses and cross-check with international seaport policy frameworks to ensure alignment and effectiveness (Rutherford et al, 2020). This collaborative approach enables the development of robust and sustainable strategies that account for various stakeholders' interests and concerns.

### **5. DATA AND METHODOLOGY**

For the measurement of poverty, widely used indicators are education level, health and living standard of peoples. These indicators have already used for the measurement of poverty in Pakistan. Above mentioned indicators, presents real picture of social welfare index in Pakistan (Haq & Faiz, 2022). These indicators have also been used in (UNDP) Pakistan report for poverty measurement. For the purpose of analyzing the poverty in Gwadar, data has been collected from Pakistan social and living standard measurement (PSLM). This survey consist on the data of all over the districts of Punjab, KPK, Sindh and Balochistan. This study concern with the statics of Balochistan especially Gwadar because statistical analysis is common tool for being making the analysis of poverty and well being of society (Maggino, 2012).

#### **4.1. Education level**

Education is the necessary need of society. It prevails to recognize their rights. Without education, a society cannot make progress. Government of Pakistan has modified the definition of educated person in Housing and population census 2017. According to it “ A person who can read and understand the simple words with no restriction of language and also able to perform simple mathematical calculation i.e. addition, subtraction etc is called educated person.



Source: Pakistan Bureau of statics, PSLM

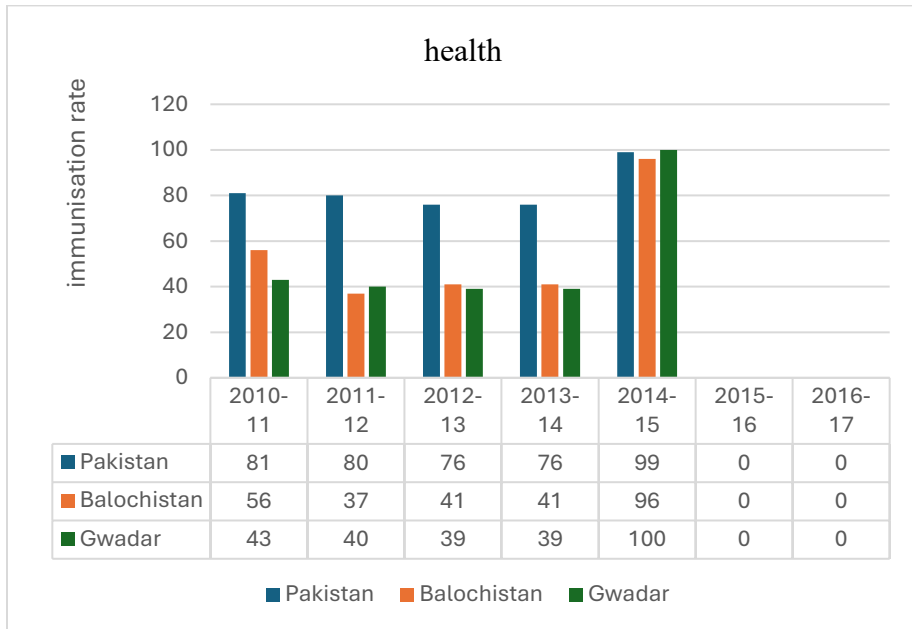
**Figure 3: Literacy Rate**

The graphical representation of education statics in different years has shown that the literacy rate in Gwadar has increased in 2013 and 2014 as compared to 2011. However, the statics for the years 2016 and 2017 is not available and it assumed that the literacy rate will grown with same pattern. Increae in literacy rate proved that poverty level decreases in Gwadar.

**4.2. Health Facility**

According to the WHO (world health organization) , the defination of health is “*health is a state of complete physical, mental and social well being and not merely the absence of disease or illness*”. The importance of facilities which are available to maintain proper health cannot undermine. According to experts “Life expectancy rate demonstrate basic health facility which is available for population”.It is best indicator for measuement of health development. But according to (UNDP, 2017) report, its impossibl to calculate the life expectancy rate because there is no data of mortality in Pakistan. As an alternative, two indicators use for health measurement consideration which are (1)immunisation rates (2) satisfaction with

health facility. So, in this study immunization rate used as indicator of life expectancy.



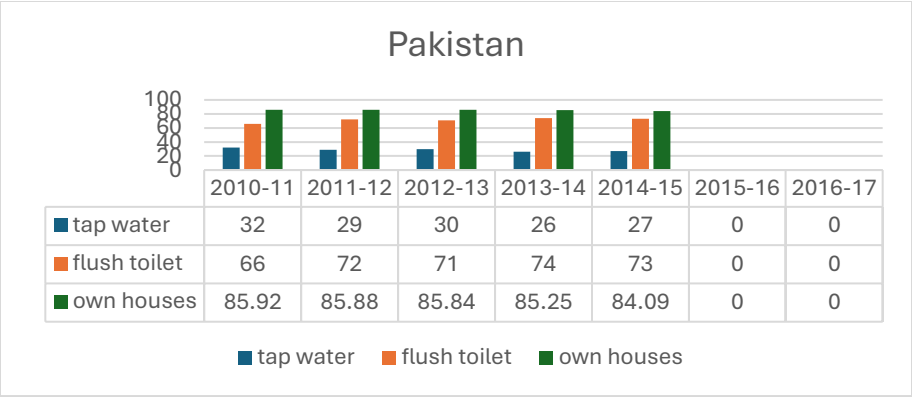
Source: Pakistan Bureau of statistics, PSLM

**Figure 5: Immunisation Rate**

Immunisation of children take as measurement of life expectancy rate in that region. Statistical data represents that rate of immunization has increased in Gwadar. This shows that health facilities have also increased in that region.

#### 4.3. Living Standards

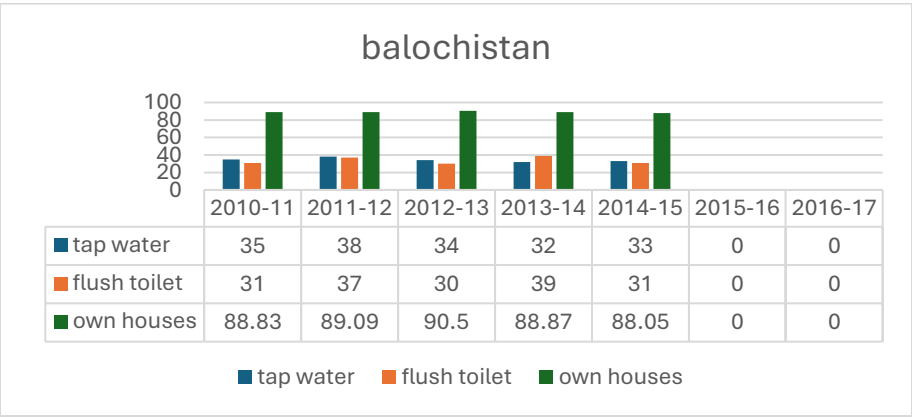
Standards of living can be defined as “ the level of wealth, purchasing power parity (PPP), physical goods available for use and fulfillment of basic necessities of life in a specific region for a specific period of time”. Living standard of any society explain the ease of life and protection of society from hazardous factors. According to (UNDP, 2017), living standard is key indicator for the measurement of poverty. It has different dimensions such as availability of electricity, drinking water, sanitation system, infrastructure, household fuel, household asset and GNI per capita. In this study, living standard is measured with availability of tap water, flush toilet and possession of own houses.



Source: Pakistan Bureau of statics, PSLM

**Figure 6: Availability of Facilities at Country Level**

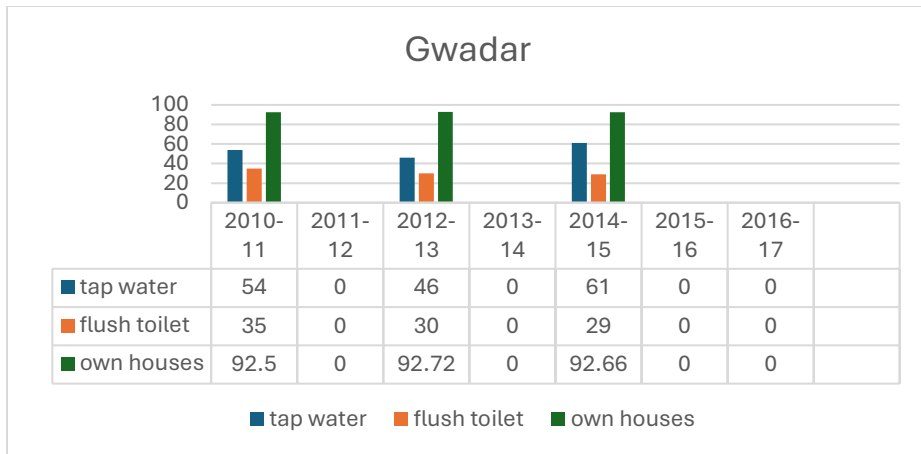
The above figure shows that there are mixed trends in statics when it was noticed at Country level. Tap water facility has downward trend in coming years and flush toilet availability has increasing trend as compared to base year. Similarly, own houses facility has decreasing trend.



Source: Pakistan bureau of statics, PSLM

**Figure 7: Availability of Facilities at Province Level**

When the analysis made at province level then again it was noticed mixed trend. Tap water facility has comparatively decreasing trend. Similarly, flush toilet has increasing trend in most years. Own business facility has first increased then decreased with minor difference.



Source: Pakistan Bureau of statistics, PSLM

***Figure 8: Availability of facilities at district level***

Again, when it was made analysis at city level mean in Gwadar which was main focusing point then it has seen that tap water facility has increased dramatically in 2014-15. It is suggested that this development may be due to a cleaned water plant which has been installed in Gwadar under CPEC development projects. But flush water facility has a diminishing trend and own houses facility also has a decreasing trend with minor changes.

#### **4.4. Overall analysis of living standard**

Graphical representation of different statistics of three key indicators i.e. tap water, flush water, and own houses, which were used for the purpose of measuring the living standard, shows that overall statistics have increased in Gwadar. It is proposed that the living standard of inhabitants of Gwadar has become better.

## **6. CONCLUSION AND DISCUSSION**

The study provides clarification that investment in development projects under CPEC contributes to poverty alleviation. Statistics indicate that port development under CPEC will effectively reduce poverty in Gwadar city by improving literacy rates, healthcare facilities, and living standards for residents. Additionally, port development not only benefits the local economy but also provides intangible advantages to the entire country. Countries prioritize port development as it enhances self-sufficiency by reducing reliance on neighboring ports, thereby safeguarding national sovereignty, defense, and security concerns.



Challenges such as political interference and involvement of pressure networks in port development can be addressed through suitable policy formulations and by earning the trust of local residents. It is crucial to focus on economic integration alongside port development and clearly define the boundaries of political interference. Enhancing regional population connectivity with port activities fosters confidence among local residents, which significantly impacts the success of port development projects and facilitates the smooth flow of port activities, ultimately combating poverty in the specific region.

## **7. POLICY RECOMMENDATIONS**

Port development is widely recognized as a catalyst for regional development in any country. It not only boosts employment levels in specific regions but also fosters regional integration with more developed areas within the country. However, the potential benefits of port development are often hindered by unnecessary political interference and the influence of pressure groups whose interests may override those of the general public. Therefore, it is imperative to address and mitigate these unfair associations to ensure transparent and efficient functioning of port activities, thus realizing their desired beneficial outcomes.

## **8. LIMITATIONS**

Certain statistical data crucial for contextualizing the narrative was unavailable, particularly in measuring poverty across different levels: nationally, provincially, and at the district level. Additionally, there is limited existing research on the socio-economic integration of CPEC, which constrains the depth of literature review and other theoretical objectives.

## **9. FUTURE RESEARCH**

The study focused on evaluating how Gwadar's deep-sea port development projects affect poverty reduction in the area. To expand future research, scholars could incorporate additional factors like the projects' influence on human resource development, infrastructure improvements, and agricultural innovation and growth in the region. Further studies could delve into specific socio-economic issues, providing a more comprehensive understanding of the impact of development initiatives on local communities and the economy.

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