Journal of Social Sciences and Economics
Vol. 4(2), 2025, 127-143
ISSN (Online) 2958-1532
https://finessepublishing.com/jsse

Unlocking the Potential of Special Economic Zones under CPEC: A Strategic Analysis of Success Factors and Barriers in Pakistan

Muhammad Naeem Khan[a]*, Saira Naeem[b]

a. School of Management Sciences, Beaconhouse National University, Lahore, Pakistan
b. School of Architecture and Planning, University of Management and Technology, Lahore, Pakistan

Abstract: This study explains the drivers and barriers influencing the success of Special Economic Zones (SEZs) in Pakistan, with a focus on SEZs proposed under the China-Pakistan Economic Corridor (CPEC). A quantitative approach was employed, collecting data from 68 stakeholders, including industrialists, academicians, policymakers, and zone developers, through surveys and interviews. The results indicate that strong government support, robust regulatory frameworks, and effective linkages are essential for SEZ success. However, challenges such as political interference, inadequate infrastructure, and a lack of skilled labor significantly hinder progress. Comparative analysis of stakeholder perspectives identifies key areas for improvement, including aligning SEZ policies with national development goals, fostering linkages, and enhancing transparency. The findings provide actionable insights for policymakers to optimize SEZ strategies, improve institutional autonomy, and foster sustainable investments under CPEC. This research offers a comprehensive, stakeholder-informed analysis of SEZ success factors in Pakistan, addressing a critical gap in the literature on CPEC-related economic development.

Keywords: Special Economic Zones (SEZs), China-Pakistan Economic Corridor (CPEC), Economic Development, stakeholder perspectives, Infrastructure and Connectivity

1. Introduction

Economic zones have played a pivotal role in boosting the economies of developing countries across the globe. Dating back to the 14th and 15th centuries, these zones have been used as an instrument to attract investment and trigger exports [1]. mostly concentrated in central Asia, Latin America, Africa, and eastern and central Europe [2]. These zones are set up as a catalyst to trigger industrial activities in a region by offering a more liberal regulatory regime, streamlined administrative processes, and significant incentives in a geographically delimited area, making them attractive hubs for investment, as the state's policies are not applicable inside the zones [3]. To attract foreign direct investment (FDI), and to increase exports, these areas offer more reliable infrastructure, such as electricity, water, dry ports, transportation network as compared to their surrounding regions [4]. If implemented properly, SEZs contribute to regional development by creating forward and backward linkages, capacity building of the local workforce, infrastructure development, and technology transfer [5]

Countries use economic zones as a strategy for economic growth and to improve a location's competitiveness at the local, regional, and national levels. By increasing competitiveness, productivity increases. The evolution of SEZs is closely tied to the stages of competitive national development of the host country. According to Porter, nations progress through four stages: factor-driven, investment-driven, innovation-driven, and wealth-driven. In the early stages, countries benefited from low-cost labor and raw material exports. As economies develop, they shift towards attracting foreign investment, establishing SEZs, and focusing on manufacturing and industrialization [6]. Later stages involve innovation, sustainability, and Eco-industrial parks to compete in the knowledge economy. The role of the government in this whole process is as a catalyst and enabler by

Received 19 April 2025; Accepted 20 June 2025; Published (online) 10 July 2025

Corresponding email: naeemkh84@gmail.com (Muhammad Naeem Khan)
DOI: 10.61363/agbab116

encouraging companies to raise their aspirations and increase their levels of competitive performance (Porter, 1990).

Regions prosper and create a catalytic trickle-down effect to boost the surrounding region and have a far-reaching effect, like in Shenzhen. Shenzhen transformed from a small fishing village into one of the world's fastest-growing cities within 40 years following the establishment of its first SEZ. This rapid evolution saw Shenzhen progress from a factor-driven economy to becoming an innovation-driven hub, significantly elevating the economic status of the entire province in the process [7]. Many countries replicated the Chinese model of the SEZ to achieve the same economic prosperity, but the output was different at every location. While some nations have reaped benefits, others, like African countries, India, and Pakistan, continue to struggle to achieve the desired growth and output from these zones [8],[9]. Although the "China model" offers valuable experiences and lessons for other developing countries, they must be adapted to the local context; there is no one-size-fits-all solution for development (Building Engines for Growth and Competitiveness in China: Experience with Special Economic Zones and Industrial Clusters, 2010).

Existing research emphasizes several key determinants of successful economic zones. These include efficient connectivity to critical transportation infrastructure like ports, airports, and rail stations, as well as well-developed on-site and off-site physical infrastructure [10]. Equally crucial is the availability of affordable labor [11]. Moreover, investors are attracted to regions exhibiting political stability [12]. And offering attractive incentives, such as tax subsidies or other fiscal and commercial benefits [13]. Importantly, the development strategy for these zones should align with the country's overarching economic objectives while remaining responsive to market demands and free from undue political interference [14].

Pakistan's economy has oscillated between import substitution and export-led development since its inception. In its pursuit of transitioning from a factor-driven to an investment-driven economy, the country has experimented with multiple export processing zones. As of 2023, seventy-five industrial estates have been established [15]. While a few have been successful, most have failed to deliver on their potential due to a lack of digital connectivity, skilled labor, and sufficient infrastructure [16]. Currently, there are 8 Special Economic Zones or Export Promotional Zones (SEZ/EPZ) in Pakistan situated in Karachi, Risalpur, Sialkot, Gujranwala, Rashakai, Gadoon, and Hathar. Despite all the contributions from these SEZs, Pakistan has experienced a low growth rate over the last two decades, ranging from 0.4% in 2008-09 to 4.1% in 2014-15 and 5.3% in 2017, and 6.1% in 2020 [16]. However, as COVID-19 hit most of the economies, Pakistan was no exception, and after spending two years in contraction, it has recently seen some industrial growth, 1.7% in 2024 [17].While research, time and again, has identified the reasons for such slow economic growth and the role SEZs can play in speeding it up, there are hardly any studies that have focused the SEZs in Pakistan to quantify the perception of stakeholders.

CPEC is viewed as a game changer for Pakistan, and SEZs are considered an instrumental factor. However, the slow development and growth of these SEZs have raised questions about their potential for success and chances of failure. The study aims to identify factors contributing to the success and failure of SEZs, particularly those proposed under CPEC in Pakistan. It utilizes a quantitative approach to confirm these factors by studying existing EPZs and industrial areas in Lahore and Sialkot, including visits to Quaid-e-Azam industrial zones in Lahore and an SEZ in Faisalabad. The objective is to understand barriers, drivers, and propose strategies for SEZs based on industry feedback and real-world observations.

2. Materials and Methods

This study employs a quantitative approach to identify factors influencing the establishment and success of Special Economic Zones (SEZs) in Pakistan, with a focus on those developed under the China-Pakistan Economic Corridor (CPEC). Data were gathered using a structured questionnaire distributed to stakeholders directly or indirectly involved in SEZ development, such as industrialists, academicians, policymakers, and zone developers. The stakeholders were identified using publicly available resources, including the CPEC Center of Excellence, the Ministry of Industry and Production, Pakistan, university portals, and SEZ developer firms. Out of 120 stakeholders approached, 68 participated in the survey, yielding a response rate of 57%. This diverse group provided a broad perspective on factors influencing SEZ performance.

Journal of Social Sciences and Economics
Vol. 4(2), 2025, 127-143
ISSN (Online) 2958-1532
https://finessepublishing.com/jsse

The questionnaire was designed based on a comprehensive review of literature, focusing on key areas such as infrastructure, connectivity, policy incentives, labor availability, and technology transfer. Respondents rated these factors on a 5-point Likert scale, and open-ended sections allowed for additional input on unaddressed barriers or drivers. A pre-test was conducted with a small group of experts to refine the questions and ensure their clarity and relevance. The finalized questionnaire was distributed electronically, and responses were collected through online survey platforms.

Data analysis was conducted using SPSS software, employing a range of statistical techniques to extract meaningful insights. Descriptive statistics were used to summarize the data, with measures of central tendency such as mean and media providing an overview of the participants' perceptions. Frequency distributions highlighted trends and variations across the responses. To explore relationships between key variables, Pearson correlation analysis was applied, revealing associations among factors such as policy incentives, infrastructure quality, and regional connectivity. Levene's test was used to assess the equality of variances across groups, such as industrialists, policymakers, and developers, ensuring the reliability of the findings.

3. Data analysis and interpretation of results

The study investigated factors affecting the success of Special Economic Zones (SEZs) in Pakistan, focusing on stakeholder perspectives gathered through a structured quantitative questionnaire. SPSS software was used for analysis, including descriptive statistics, correlation analysis, and Levene's test. A total of 68 stakeholders with a 57% response rate responded (see table 1), representing industrialists (50%), academicians (19%), policymakers (16%), and zone developers (15%), participated. A majority (82%) had over five years of experience, ensuring reliable insights into Pakistan's industrialization challenges.

Table 1: Frequency Distribution of Observed Variables Across Categories

		Frequency	Valid Percent	Cumulative Percent
occupation	Academician	13	19.1	19.1
	Industrialist / Investor	34	50.0	69.1
	Zone Developer	10	14.7	83.8
	Policy Maker	11	16.2	100.0
	Total	68	100.0	
Organization type	Government	12	17.6	17.6
	Private	43	63.2	80.8
	University (academia)	13	19.1	100.0
	Total	68	100.0	
years of experience	Less than 5 Years	12	17.6	17.6
	Between 5 and 10 Years	25	36.8	54.4
	Between 10 and 15 Years	17	25.0	79.4
	Above 15 Years	14	20.6	100.0
	Total	68	100.0	

3.1 Descriptive Analysis

The survey examined six domains: **connectivity, infrastructure, regulatory framework, government support mechanisms (GSM), incentives, and linkages.** Respondents ranked items on a 5-point Likert scale (1 = least important, 5 = most important). Levene's test ($p > 0.05$) confirmed homogeneity of variance among stakeholder groups, indicating consistent perceptions of SEZ success factors.

3.2 Results by Domain

3.2.1 Connectivity

Connectivity factors included links to road networks, dry ports, railways, local markets, and international markets (Table 2). Road connectivity was rated highest (mean = 4.8), followed by dry ports (4.26) and railways (4.19). Connectivity to airports and airports scored lower (3.01 and 2.84, respectively). The combined mean for connectivity factors was 3.79, with stakeholders prioritizing road and railway infrastructure due to their critical role in facilitating trade and supporting inland SEZs. The p-value (0.594) confirmed consensus among stakeholders.

Pakistan's reliance on road transport for 90% of passenger and 96% of freight traffic highlights the significance of this mode of connectivity [18]. Stakeholder emphasis on railway connectivity reflects its cost-effectiveness despite its deteriorating condition. Similarly, local market connectivity (mean = 3.84) was rated higher than international markets (3.60), underscoring the importance of backward linkages and local value chain integration for SEZ success (UNCTAD, 2019). However, the low scores for airport and seaport connectivity suggest a reduced focus on international trade logistics, which may limit the broader economic impact.

Table 2: Descriptive Statistics of Connectivity Indicators

Connectivity	Minimum	Maximum	Mean	combined Mean
Road network	4	5	4.8	3.79
Dry port	3	5	4.26	
Railway Network	3	5	4.19	
Connectivity of SEZ to local markets	3	5	3.84	
Connectivity of SEZ to international markets	2	5	3.60	
Seaport	2	5	3.01	
Airport	1	4	2.84	

The p-value or significance is 0.594 for the factors related to connectivity (Table 3), which means that the equality of variance exists among academicians, industrialists, policy makers, and zone developers. All stakeholders agree that connectivity to the railway, dry port, seaport, local market, and international market is considered very important for the success of any SEZ.

Table 3: ANOVA Results for Connectivity Indicators

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	143.033	3	47.678	0.637	0.594
Within Groups	4789.302	64	74.833		
Total	4932.335	67			

3.2.2 Infrastructure

Infrastructure factors (Table 4) such as uninterrupted energy access (mean = 4.19) and ICT services (4.15) were ranked highest, reflecting Pakistan's challenges with power outages and weak digital infrastructure. Worker housing near SEZs scored 4.07, while social infrastructure (e.g., hospitals, recreational facilities) scored 3.12. The combined mean for infrastructure was 3.88. The p-value (>0.05) indicated stakeholder agreement on the importance of infrastructure for SEZ performance.

Consistent with global findings, reliable energy and ICT infrastructure are prerequisites for attracting foreign direct investment [19]. Pakistan's frequent power failures have forced industries to install costly in-house power solutions (Hasan, 2010), underscoring the need for state-of-the-art infrastructure. Lower ratings for social infrastructure reflect a focus on operational priorities over worker welfare, which may limit long-term sustainability and productivity.

Journal of Social Sciences and Economics
Vol. 4(2), 2025, 127-143
ISSN (Online) 2958-1532
https://finessepublishing.com/jsse

Table 4: Descriptive Statistics - Infrastructure

Infrastructure	Minimum	Maximum	Mean	Combined mean
Uninterrupted access to Energy resources (Electricity, Gas, etc.)	4	5	4.19	
Uninterrupted access to ICT (internet and telephone	4	5	4.15	
Provision of housing for the labor inside or within walking distance to the SEZ.	3	5	4.07	3.88
Availability of social infrastructure (hospital, fire station, hotel, and recreation facility) inside the zone.	1	5	3.12	

The significance is greater than 0.05; hence, the null hypothesis exists, and academicians, policymakers, zone developers, and industrialists agree on the provision of proper infrastructure for the SEZ site Table 5). The combined meaning of factors related to infrastructure is 3.88, which is positively skewed and considered important by all stakeholders, as can be seen in Table 8. The mean fell below 4 because of the very low mean of the factor social infrastructure, whereas all the other factors had a mean above 4.

Table 5: ANOVA Statistics - Infrastructure

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	147.341	3	49.114	0.643	0.590
Within Groups	4888.492	64	76.383		
Total	5035.833	67			

3.2.3 Government Support Mechanisms (GSM)

The GSM domain (Table 6) encompassed factors such as political stability (mean = 4.68), governance efficiency (4.53), and transparency (4.19). These factors align with global research identifying governance as pivotal to SEZ success (COMCEC, 2017). Training facilities for labor scored lower (means = 2.74–3.81), suggesting reliance on existing education systems over specialized vocational training within SEZs.

Table 6: Descriptive Statistics – GSM

GSM	Minimum	Maximum	Mean	Combined mean
Institutional autonomy	4	5	4.68	
Political stability	4	5	4.51	
Strong support and proactive participation of the Government	3	5	4.47	
Transparency in investment	3	5	4.43	
Security	4	5	4.37	
a transparent and stable legal and administrative framework	4	5	4.37	4.09
Accountability of institutions	4	5	4.29	
A strong commitment by political authorities to establish an open market economy.	4	5	4.28	
Promote private sector participation and public-private partnerships (PPPs), along with technical assistance for structuring and negotiating PPP deals.	3	5	4.22	
Rapid custom clearance	4	5	4.22	

Horizontal and vertical mechanisms for coordination and conflict resolution	4	5	4.19
Availability of skilled labor	4	5	4.18
The technical and vocational educational system in the country	2	5	3.81
Availability of unskilled labor	3	4	3.74
Technical and vocational schools inside the zones	1	5	2.99
Colleges and universities inside the zone	1	5	2.74

The combined mean for GSM was 4.09, reflecting its critical role in SEZ success. Political stability and effective governance are particularly relevant in Pakistan, where regulatory inefficiencies have historically undermined economic growth [20]. The p-value (0.543, see table 7) confirmed consensus, with all stakeholders emphasizing GSM as a cornerstone for SEZ development.

Table 7: ANOVA Statistics - GSM

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	223.905	3	74.635	0.721	0.543
Within Groups	6629.009	64	103.578		
Total	6852.914	67			

3.2.4 Forward and Backward Linkages

The linkages domain (Table 8) included factors such as promoting local investment (mean = 4.81), knowledge sharing (4.68), and use of local raw materials (4.66). The combined mean was 4.52, the highest among all domains, highlighting the importance of economic integration and technology transfer [21].

Table 8: Descriptive Statistics – Linkages

Linkages	Minimum	Maximum	Mean	Combined mean
Promoting local investment in zones.	4	5	4.81	4.52
Promoting knowledge sharing between the zones and the local industry	4	5	4.68	
Use of local raw material in industries	4	5	4.66	
How important is forward linkage (between firms and the consumer market)	4	5	4.54	
How important is backward linkage (between firms and the supplier market)	4	5	4.46	
Integration of regional value chains	4	5	4.43	
Production of exportable	4	5	4.32	
technological compatibility between SEZ and the domestic economy (promotes technology transfer)	3	5	4.25	

Stakeholders recognized the catalytic potential of backward and forward linkages for industrial spillover effects, as these facilitate technology transfer, skill development, and integration with local industries. This aligns with findings emphasizing local market proximity and value chain integration as critical for SEZ success [22]. For 'linkages, the p-value or significance is 0.129, which is above 0.05 and hence the Equality of variance exists among academicians, industrialists, policy makers, and zone developers (Table 9).

Table 9: ANOVA Statistics – Linkages

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	472.506	3	157.502	1.960	0.129
Within Groups	5143.364	64	80.365		
Total	5615.870	67			

Journal of Social Sciences and Economics
Vol. 4(2), 2025, 127-143
ISSN (Online) 2958-1532
https://finessepublishing.com/jsse

3.2.5 Regulatory Framework

Labor laws and worker welfare provisions (Table 10) scored between 4 and 5, indicating their high importance. Zone-specific regulations and operationalization of labor unions scored lower (3–4), reflecting a preference for broader regulatory consistency. The combined mean was 4.06, with a p-value of 0.617 confirming stakeholder consensus.

Table 10: Descriptive Statistics – Regulatory Framework

RFW	Minimum	Maximum	Mean	Combined Mean
Labor laws applicable inside the zone	4	5	4.69	
Standardized procedures for exemption from excise duties	4	5	4.43	
Zone-specific labor laws	4	5	4.41	
strategic planning and a demand-driven approach	4	5	4.26	
Provision of healthcare facilities for labor and his family	3	5	4.19	
Subsidy for the education of children	3	5	4.13	
uniform regulations for all zones	3	5	4.07	
ensuring that labor markets are free to facilitate the movement of skilled labor across firms	3	5	4.06	4.06
On-site day-care for young children	3	5	4.03	
Guidelines on minimum wages	3	5	4.03	
Labor unions	2	5	3.99	
Guidelines on additional benefits to be paid by the employers in general	3	5	3.90	
Flexibility in hiring and firing workers	2	5	3.65	
Limited license to sell into the domestic market	2	5	3.57	

This finding highlights the need for robust labor policies to enhance productivity and attract investment. However, reliance on rigid tax holidays and limited technological adoption remain barriers to SEZ success, echoing global critiques of incentive-based development models [23].

For 'regulatory framework', the p-value or significance is 0.617, which is above 0.05, indicating that the null hypothesis exists and there is equality of variance among academicians, industrialists, policy makers, and zone developers (Table 11). There is no difference in opinion between academicians, policymakers, and industrialists. All the respondents agree that the regulatory framework is important and must be incorporated to ensure the success of any special economic zone.

Table 11: ANOVA Statistics - RFW

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	183.167	3	61.056	0.600	0.617
Within Groups	6508.858	64	101.701		
Total	6692.024	67			

3.2.6 Incentives

Incentives (Table 12) such as tax exemptions (mean = 4.54) and one-window operations (4.53) were rated higher than duty-free imports (3.32). The combined mean was 4.0, with a p-value (0.04) indicating significant differences among stakeholders. Industrialists favored incentives more strongly than policymakers or academicians, reflecting divergent priorities.

Existing literature suggests that while incentives attract initial investment, they are less critical for long-term SEZ performance compared to quality infrastructure and governance [22]. The relatively high ratings in this study highlight the immediate need for fiscal support to bolster investor confidence in Pakistan's SEZs.

Table 12: Descriptive Statistics – Incentives

Incentives	Minimum	Maximum	Mean	Combined mean
The ability to repatriate profits and capital investment	3	5	4.54	
one-window operation	3	5	4.53	
Subsidized services	2	5	4.34	
foreign currency loan from abroad under the direct automatic route	3	5	4.31	
Incentive on Smart office setups (Technology-based operations, ICT implementation)	2	5	4.16	
convertibility of the domestic currency, including the capital account for foreign investors/ trade in local currency	3	5	4.15	
exemption from regional taxes	2	5	4.15	
Exemption/concession on income tax on salaries of foreign technicians	2	5	4.10	4
Low degree of protection (no quantity restriction on imports and exports, low tariffs)	2	5	4.03	
Depreciation allowances	3	5	4.00	
foreign currency loan from abroad under the direct automatic route	1	5	3.99	
Exemption of income tax on interest on borrowed capital	2	5	3.97	
export tax exemption	2	5	3.72	
International subcontracting license	2	5	3.63	
local subcontracting license	2	5	3.62	
inexpensive land	1	5	3.47	
duty-free imports of raw material	1	4	3.32	

The p-value for incentives is 0.04, which is below 0.05; therefore, in this case, the null hypothesis is rejected (Table 13).

Table 13: ANOVA Statistics - Incentives

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	323.508	3	107.836	2.929	0.040
Within Groups	2356.607	64	36.822		
Total	2680.115	67			

According to the mean scores, factors are ranked from most to least important and shown in Figure 4. Linkages with a mean score of 4.52 (out of 5) are ranked the highest among the drivers taken for the study. GSM and Regulatory framework are ranked 2nd and 3rd, respectively, with a marginal difference of .03 in the means. The top three factors are primarily linked directly with government involvement. Despite the general assumption that incentives are considered most important, results show that incentives are ranked fourth. One of the reasons for that is that policymakers and academicians are sceptical towards incentives and believe that it is less important (Figure 1). Further, in qualitative analysis perception of multiple stakeholders concerning incentives is discussed in detail. Infrastructure and Connectivity are in the last two spots, a reason for that could be that respondents believed that infrastructure is not as important as the products or industry being involved in the SEZs. One of the reasons for connectivity to score low could be the low importance of the Airport and Seaport, as shown by the responses.

Journal of Social Sciences and Economics
Vol. 4(2), 2025, 127-143
ISSN (Online) 2958-1532
https://finessepublishing.com/jsse

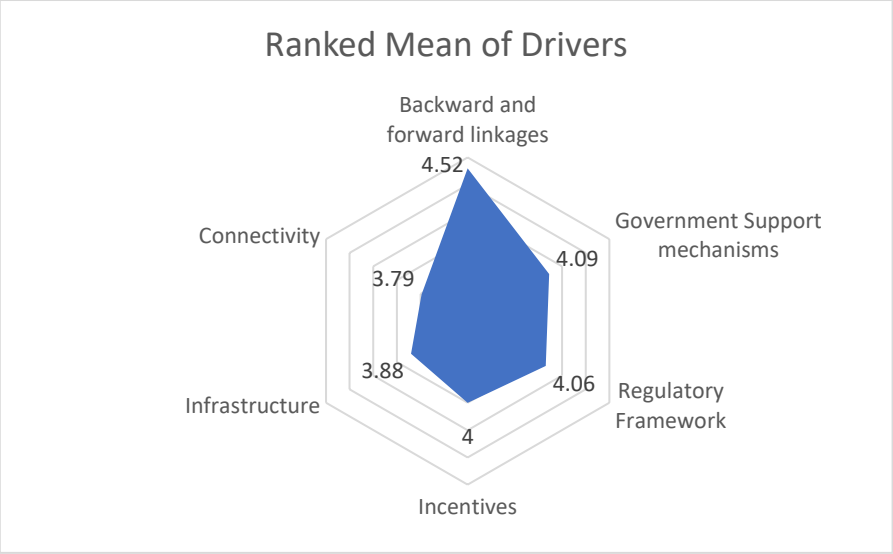

Figure 1: Ranked Mean of the Drivers for Success of SEZs

3.3 Cross-Comparison of Stakeholder Perspectives

3.3.1 Income Tax Concession:

As shown in Table 14, significant differences were observed among stakeholders regarding the duration of income tax concessions, with a chi-square p-value of 0.028 ($p<0.05$). Industrialists predominantly favored longer concessions (5–10 years), likely reflecting their vested interests in maximizing financial incentives. Policymakers leaned toward 5-year concessions, suggesting a balanced approach to attract investment while maintaining fiscal responsibility. Academicians, on the other hand, were more conservative, with preferences leaning toward 2 or 5 years, possibly due to their focus on sustainable economic practices. Zone developers showed varied preferences, indicating a need for tailored approaches based on the specific SEZ context.

Table 14: Crosstab Occupation x Income Tax Concession

occupation		Income tax concession				Total	Chi-Square P - value
		0 years	2 years	5 years	10 years		
Academician	Count	2	5	5	1	13	
	% within occupation	15.4%	38.5%	38.5%	7.7%	100.0%	0.028
Industrialist / Investor	Count	0	3	18	13	34	
	% within occupation	0.0%	8.8%	52.9%	38.2%	100.0%	
Zone Developer	Count	0	4	3	3	10	
	% within occupation	0.0%	40.0%	30.0%	30.0%	100.0%	
Policy Maker	Count	1	2	7	1	11	
	% within occupation	9.1%	18.2%	63.6%	9.1%	100.0%	
Total	Count	3	14	33	18	68	
	% within occupation	4.4%	20.6%	48.5%	26.5%	100.0%	

3.3.2 Exemption of Dividends:

Table 15 illustrates significant differences among stakeholders on dividend exemptions, with a chi-square p-value of 0.001. Most respondents, including industrialists and zone developers, preferred a 5-year exemption period, reflecting a shared view of its importance in attracting initial investments. However, academicians and policymakers were split, with a substantial proportion advocating for no exemptions, highlighting concerns about long-term fiscal sustainability.

Table 15: Cross tab Occupation x Exemption on Dividends

occupation		Exemption on dividends			Total	Chi-Square
		0 years	5 years	10 years		
Academician	Count	5	7	1	13	0.001
	% within occupation	38.5%	53.8%	7.7%	100.0%	
Industrialist / Investor	Count	0	21	13	34	
	% within occupation	0.0%	61.8%	38.2%	100.0%	
Zone Developer	Count	0	7	3	10	
	% within occupation	0.0%	70.0%	30.0%	100.0%	
Policy Maker	Count	5	5	1	11	
	% within occupation	45.5%	45.5%	9.1%	100.0%	
Total	Count	10	40	18	68	
	% within occupation	14.7%	58.8%	26.5%	100.0%	

3.3.3 Concession on Income Tax for Foreign Technicians:

The responses to this question (Table 16) revealed a chi-square p-value of 0.016, indicating significant differences among stakeholders. Industrialists overwhelmingly supported a 5-year concession, underscoring their focus on attracting skilled foreign talent to SEZs. Policymakers and zone developers showed a more distributed preference, while academicians predominantly opposed exemptions, emphasizing cost management and reliance on local talent.

Table 16: Crosstab Occupation x Concession on income tax of foreign technicians

Occupation		concession on income tax on salaries of foreign technicians				Total	Chi-Square
		No Exemption	3 years	5 years	complete exemption		
Academician	Count	6	2	5	0	13	0.016
	% within occupation	46.2%	15.4%	38.5%	0.0%	100.0%	
Industrialist / Investor	Count	0	6	27	1	34	
	% within occupation	0.0%	17.6%	79.4%	2.9%	100.0%	
Zone Developer	Count	2	2	6	0	10	
	% within occupation	20.0%	20.0%	60.0%	0.0%	100.0%	

Journal of Social Sciences and Economics
Vol. 4(2), 2025, 127-143
ISSN (Online) 2958-1532
https://finessepublishing.com/jsse

Policy Maker	Count	3	4	4	0	11
	% within occupation	27.3%	36.4%	36.4%	0.0%	100.0%
Total	Count	11	14	42	1	68
	% within occupation	16.2%	20.6%	61.8%	1.5%	100.0%

3.3.4 Cash subsidies

For scenarios where cash subsidies should be provided (Table 17), a significant chi-square p-value of 0.001 indicates differing stakeholder priorities. Industrialists showed a strong preference for subsidies based on a combination of export potential, local needs, and industry type, reflecting their interest in comprehensive support mechanisms. In contrast, most academicians and policymakers opposed cash subsidies altogether, citing concerns over inefficiencies and misaligned priorities. Zone developers exhibited mixed responses, further emphasizing the need for context-specific policies.

Table 17: Crosstab Occupation x Cash Subsidy

Occupation		**cash subsidy shall**					**Total**	**Chi-Square**
		Not be provided	**be provided on export potential**	**be provided based on local need**	**be provided based on the industry**	**be provided based on a combination of export, local need, and industry**		
Academician	Count	8	2	1	1	1	13	0.001
	% within occupation	61.5%	15.4%	7.7%	7.7%	7.7%	100.0%	
Industrialist / Investor	Count	0	4	3	9	18	34	
	% within occupation	0.0%	11.8%	8.8%	26.5%	52.9%	100.0%	
Zone Developer	Count	2	3	0	2	3	10	
	% within occupation	20.0%	30.0%	0.0%	20.0%	30.0%	100.0%	
Policy Maker	Count	5	2	1	2	1	11	
	% within occupation	45.5%	18.2%	9.1%	18.2%	9.1%	100.0%	
Total	Count	15	11	5	14	23	68	
	% within occupation	22.1%	16.2%	7.4%	20.6%	33.8%	100.0%	

3.3.5 Industry-Specific Cash Subsidies:

Table 18 showed no significant differences (chi-square p-value = 0.44) among stakeholders on which industries should receive cash subsidies, indicating a consensus. A majority (57.4%) across all groups prioritized the manufacturing sector, recognizing its potential for economic growth and value addition. Agriculture received

the second-highest support (36.8%), particularly from policymakers who highlighted its importance for food security and rural development. The services sector received minimal support (5.9%), reflecting its perceived secondary role in the SEZ context.

Table 18: Crosstab Occupation x Industry-Specific cash Subsidy

		industry-specific cash subsidy on a priority basis				Chi-Square
Occupation		**Agriculture**	**Manufacturing**	**Services**	**Total**	
Academician	Count	5	8	0	13	
	% within occupation	38.5%	61.5%	0.0%	100.0%	
Industrialist / Investor	Count	10	20	4	34	
	% within occupation	29.4%	58.8%	11.8%	100.0%	
Zone Developer	Count	4	6	0	10	
	% within occupation	40.0%	60.0%	0.0%	100.0%	0.44
Policy Maker	Count	6	5	0	11	
	% within occupation	54.5%	45.5%	0.0%	100.0%	
Total	Count	25	39	4	68	
	% within occupation	36.8%	57.4%	5.9%	100.0%	

3.4 Barriers

3.4.1 Forward and Backward Linkages

Barriers related to forward and backward linkages (Table 19) highlighted two key challenges: subsidiaries' dependence on parent companies and the lack of skilled labor for technology transfer. Both factors had mean values above 4, emphasizing their critical importance. Dependence on parent companies hinders local backward linkages as subsidiaries often rely on imported inputs, limiting integration with the host economy. This aligns with studies by UNIDO and OECD, which suggest that independent subsidiaries are more effective in fostering local linkages [22]. Similarly, the lack of skilled labor restricts effective technology transfer, as unskilled workers are often confined to low-tech production processes [23]. These barriers point to a need for local workforce development and greater operational autonomy for firms in SEZs.

3.4.2 Government Support Mechanisms

The next important barrier associated with government support mechanisms, with a combined mean of 4.16, indicating that these are perceived as very significant (Table 19). The most critical barriers included zones being driven by political agendas rather than business demands (mean 4.43) and poor coordination between private developers and the government in infrastructure provision (mean 4.35). These issues result in delays, cost overruns, and substandard infrastructure, as also observed in SEZs in Vietnam (FIAS, 2008). Additional barriers, such as financial system backwardness (mean 4.28) and the system of relative prices discouraging FDI (mean 4.19), highlight structural inefficiencies in Pakistan's economic framework.

While subsidized rent and services (mean 4.16) aim to attract investors, they can also lead to unsustainable practices if not carefully managed. Vocational training for the workforce remains a challenge (mean 4.06), further hindering backward linkage creation. Lower-ranked barriers, such as acquiring fertile agricultural land (mean 3.84), reflect a lack of awareness about sustainable industrialization among stakeholders. These findings stress the importance of a demand-driven approach, streamlined coordination, and skill-building initiatives for SEZ success.

Journal of Social Sciences and Economics
Vol. 4(2), 2025, 127-143
ISSN (Online) 2958-1532
https://finessepublishing.com/jsse

3.4.3 Regulatory Framework

Barriers related to the regulatory framework (Table 19) had a combined mean of 4.12, underlining their significance. The most prominent issue was uncompetitive economic policies, such as reliance on tax holidays and rigid performance requirements (mean 4.22), which stakeholders viewed as ineffective. Practices like offering illegal incentives, banned by the WTO (FIAS, 2008), also contribute to poor SEZ performance. The low technological level of labor-intensive production (mean 4.19) was another critical barrier, limiting opportunities for technology transfer. Stakeholders indicated a preference for capital-intensive industries, which are more likely to facilitate technological upgrading. The comparatively lower score for guaranteeing private property rights (mean 3.94) points to lingering concerns about regulatory consistency and enforcement. These barriers suggest that SEZs need modernized policies that prioritize technological advancement and compliance with international trade norms.

3.4.5 Zone Management

Barriers to effective zone management (Table 19) were among the most significant, with a combined mean of 4.24. The top barriers included excessive land allocation for residential use (mean 4.76), lack of zone management expertise (mean 4.60), and the involvement of too many administrative bodies (mean 4.51). These factors point to inefficiencies in SEZ planning and governance. Other barriers, such as inadequate maintenance (mean 4.13) and poorly designed facilities (mean 4.19), reflect operational shortcomings that affect zone performance. Real estate activities within zones (mean 4.00) and inadequate compensation for landowners (mean 3.68) highlight concerns related to social and economic sustainability. The relatively low means for compensation reflects stakeholders' focus on immediate operational barriers rather than broader societal impacts. These findings reinforce the need for streamlined administrative processes, better zone planning, and greater attention to sustainable practices.

Table 19: Descriptive Statistics – Barriers

Dimensions	Key Factors	Min	Max	Mean	Combined Mean
Linkage	Subsidiaries dependent on the parent company won't contribute to creating backward links in the local economy	3	5	4.22	4.24
	Lack of skilled labor hinders technology transfer	3	5	4.26	
GSM	Zone initiatives are driven by a political agenda and a lack of a strong business case	4	5	4.43	4.16
	Lack of coordination between private developers and the government in infrastructure provision	4	5	4.35	
	Financial system backwardness discourages FDI	3	5	4.28	
	A system of relative prices discourages FDI	4	5	4.19	
	subsidized rent and other services	3	5	4.16	
	Lack of an institute to develop skilled labor leads to failure in backward linkages	3	5	4.06	
	Poor enforcement of environmental standards	2	5	4	
	Most fertile agricultural land acquired for SEZ	2	4	3.84	

RFW	Uncompetitive economic policies, e.g., reliance on tax holidays, rigid performance requirements, lead to the poor performance of firms	4	5	4.22	4.12
	The low technological level of labor-intensive production hinders technology transfer	3	5	4.19	
	The guarantee of private property rights as well as a critical number of private enterprises	3	5	3.94	
Zone Management	A greater percentage of land is assigned for residential use in an SEZ	4	5	4.76	4.24
	Lack of zone management and operational know-how	4	5	4.6	
	Too many bodies are involved in zone administration	4	5	4.51	
	Inappropriately designed facilities	4	5	4.19	
	Inadequate administrative structures	4	5	4.18	
	inadequate maintenance	3	5	4.13	
	Inadequate promotion of the zone	3	5	4.12	
	Real estate activities taking place inside the zone	2	5	4	
	The land acquired for developing a special economic zone doesn't fully compensate its previous owners	2	5	3.68	

Summarizing the discussion of barriers and their rankings, Figure 5 shows the importance given by respondents for each factor. The ranked mean shows that linkages and zone management are among the most important factors that may hinder the successful implementation of the SEZs.

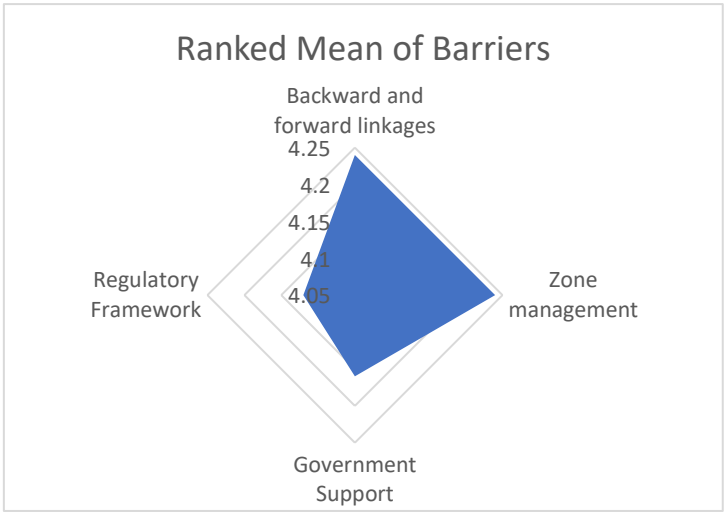

Figure 2: Ranked Mean of the Barriers for the Success of SEZs

4. Conclusion and Recommendations

4.1 Conclusion

The study began with a literature review identifying critical success factors for SEZs, including connectivity, infrastructure, linkages, government support, regulatory frameworks, and incentives [23]. Infrastructure and connectivity were highlighted as key determinants, but the importance of tailoring policies to each SEZ's unique context was emphasized. Labor-oriented policies were particularly relevant for developing countries. Failures

in SEZs were often attributed to weak management, political interference, nepotism, and poor planning, challenges also documented in Pakistan's under-performing Export Processing Zones [24].

A quantitative survey captured stakeholder perceptions, revealing alignment with international success factors but with local nuances. Linkages with local firms were rated as the most critical factor, driven by concerns of competition with Chinese companies under CPEC.

Government support mechanisms and regulatory frameworks were followed, with stakeholders emphasizing transparency, trust, and active government involvement. Connectivity, while globally important, received mixed local emphasis; road and railway links were prioritized over airport facilities. The ML-1 railway project was noted as a potential game-changer for SEZ connectivity.

Skilled labor was seen as crucial, but skepticism about the government's ability to implement effective vocational training programs tempered stakeholder enthusiasm. Incentives were contentious, with industrialists favoring generous financial benefits and policymakers advocating smaller, sustainable incentives to avoid fiscal strain and discourage footloose investments. A balanced approach is needed to attract investment while ensuring long-term contributions to the local economy.

4.2 Recommendation

A revised SEZ policy, aligned with the country's industrial strategy and informed by stakeholder consultation, is essential for effective CPEC-related SEZs. Each SEZ should develop a unique vision, mission, and objectives reflecting local contexts to create comparative advantages. Strategic focus on a limited number of SEZs, supported by feasibility studies and clear KPIs, can optimize resource use and prevent internal competition. Policy measures should strengthen linkages between SEZs and the domestic economy through technology transfer and education-industry partnerships.

Institutional autonomy, transparency, and political commitment are critical for success. Industries should be selected to complement local sectors, with a focus on SMEs, joint ventures with Chinese firms, and streamlined one-window operations. Automated customs systems and dedicated investor services can further enhance efficiency and investor satisfaction.

4.3 Scope for Further Research

While this study identified critical themes such as political interference and institutional autonomy as key barriers to SEZ success, a deeper contextual understanding of how these issues manifest across individual SEZs was beyond the scope of this research. The use of a structured questionnaire enabled national-level insights, but the complexity of SEZ performance often varies zone by zone.

To uncover local administrative bottlenecks, political dynamics, and institution-specific governance issues, future research should employ in-depth interviews, case study methods, and ethnographic fieldwork focused on individual SEZs such as Rashakai, Faisalabad, or Gwadar. Such qualitative explorations would enable policymakers to design more tailored, zone-specific interventions rather than relying solely on generalized reforms.

Funding

This research did not receive any funding.

Data availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent

Not applicable. This study uses publicly available, de-identified secondary data and does not involve human participants or personal information.

Competing interests

The authors declare no competing interests.

References

[1] Aggarwal, A. (2022). Special economic zones in the Indonesia-Malaysia-Thailand growth triangle. Asian Development Bank.
[2] Ahmad, S., Maqbool, I., Raihan, A., & Xin, L. (2024). Analyzing the dynamics of the import demand function in Pakistan: Long-term and short-term relationships with key economic factors. Asian Journal of Economics and Empirical Research, 11(2), 50–59.
[3] Ahrens, J., & Meyer-Baudeck, A. (1995). Special economic zones: Shortcut or roundabout way towards capitalism? Intereconomics. https://doi.org/10.1007/BF02926261
[4] Alkon, M. (2018). Do special economic zones induce developmental spillovers? Evidence from India's states. World Development, 107, 396–409. https://doi.org/10.1016/j.worlddev.2018.02.028
[5] Ambaw, N. (2024). Factors affecting the performance of industrial parks in Ethiopia: The case of Hawassa Industrial Park.
[6] Arbolino, R., Lantz, T. L., & Napolitano, O. (2023). Assessing the impact of special economic zones on regional growth through a comparison among EU countries. Regional Studies, 57(6), 1069–1083. https://doi.org/10.1080/00343404.2022.2069745
[7] Bräutigam, D., & Xiaoyang, T. (2011). African Shenzhen: China's special economic zones in Africa. Journal of Modern African Studies, 49(1), 27–54. https://doi.org/10.1017/S0022278X10000649
[8] Chaisse, J., & Ji, X. (2020). The pervasive problem of special economic zones for international economic law: Tax, investment, and trade issues. World Trade Review, 19(4), 567–588.
[9] Cowaloosur, H. (2014). Land grab in new garb: Chinese special economic zones in Africa—The case of Mauritius. African Identities, 12(1), 94–109. https://doi.org/10.1080/14725843.2013.868674
[10] Farole, T., & Akinci, G. (2011). Special Economic Zones: Performance, lessons learned, and implications for zone development, 1–83.
[11] Guellec, D., & Wunsch-Vincent, S. (2009). Policy responses to the economic crisis: Investing in innovation for long-term growth. OECD, Issue 159. https://doi.org/10.1787/222138024482
[12] Illeritskiy, N. I., Rakhimov, A. R., Rozhko, O. N., Khalov, O. M., & Li, S. (2024). Implementation of projects of international transport corridors on the Eurasian continent as drivers of economic growth. Journal of Infrastructure, Policy and Development, 8(5), 3624.
[13] Ishfaq, M., Rasool, A., Asghar, M. M., Karim, S., & Ahmad, R. (2024). Impact of natural, physical, and human capital formation on economic growth in Pakistan: An ARDL analysis. Journal of Asian Development Studies, 13(3). https://doi.org/10.62345/jads.2024.13.3.19
[14] Landsberg, M. (1979). Export-led industrialization in the Third World: Manufacturing imperialism. Review of Radical Political Economics, 11(4), 50–14. https://doi.org/10.1177/048661347901100405
[15] Levien, M. (2012). The land question: Special economic zones and the political economy of dispossession in India. https://doi.org/10.1080/03066150.2012.656268
[16] Naeem, S., Waheed, A., & Khan, M. N. (2020). Drivers and barriers for successful special economic zones (SEZs): Case of SEZs under China Pakistan Economic Corridor. Sustainability, 12(11), 4675. https://doi.org/10.3390/SU12114675
[17] Pakistan Economic Survey. (2024). Pakistan Economic Survey 2023–2024 (pp. 1–24).
[18] Perry, K. K. (2021). The triple crisis of debt, demand, and decarbonisation: A preliminary analysis of the impact of COVID-19 on commodity-dependent developing economies. International Journal of Development Issues, 20(2), 226–242.
[19] Porter, M. E. (1990). New global strategies for competitive advantage. Planning Review, 18(3), 4–14. https://doi.org/10.1108/eb054287
[20] Siddiqui, K. (2014). Flows of foreign capital into developing countries: A critical review. Journal of International Business and Economics, 2(1), 29–46.
[21] Zeng, D. Z. (2012). China's Special Economic Zones and industrial clusters: Success and challenges.
[22] Zeng, D. Z. (2015). Global experiences of special economic zones with focus on China and Africa: Policy insights. Journal of International Commerce, Economics and Policy. https://doi.org/10.1142/S1793993316500186
[23] Zeng, D. Z. (2021). The past, present, and future of special economic zones and their impact. Journal of International Economic Law, 24(2), 259–275.

[24] Zhang, S., Xu, M., Yang, Y., & Song, Z. (2021). Technological innovation, production efficiency, and sustainable development: A case study from Shenzhen, China. Sustainability, 13(19), 10827.