
Location Attributes for Special Economic Zones (SEZs) in Kerala Context

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Abstract: *This research delves into the crucial locational factors for selecting Special Economic Zone (SEZ) sites in Kerala, India. It underscores the vital role SEZs play in catalysing economic growth, particularly in sectors reliant on advanced knowledge such as information technology, biotechnology, and engineering. By positioning SEZs as hubs of innovation and talent attraction, the study highlights their potential to transform Kerala into a dynamic, knowledge-based economy. The success of SEZs, however, hinges on meticulous planning and efficient implementation, with a strong emphasis on transportation accessibility and infrastructure development. The research offers a comprehensive review of SEZ policies at both national and state levels, identifying gaps and opportunities within the existing frameworks. Through a blend of expert insights and empirical data, the study pinpoints and ranks the critical factors that influence SEZ location selection. Utilizing the Analytic Hierarchy Process (AHP) method, weights are assigned to each factor, facilitating a structured and systematic evaluation of their importance. This methodological approach provides a clear framework for making informed decisions about SEZ locations and facilities specific to the context of Kerala.*

The research culminates in a set of strategic policy recommendations aimed at enhancing Kerala's SEZ policy framework. These recommendations are designed to empower policymakers, planners, and decision-makers to establish SEZs that not only spur economic growth but also ensure its sustainability. By adopting these targeted policy suggestions, Kerala can effectively leverage SEZs to foster a robust, innovation-driven economic landscape.

Keywords: *Special Economic Zones, SEZ Policy, Location Attributes of SEZs, Key Success Factors of SEZ, SEZ Location.*

1. INTRODUCTION

A. Background Study

India, the world's largest democracy with a vast population, boasts a significant middle-class consumer base and is a key market for global businesses. Its robust manufacturing and service sectors benefit from skilled and cost-effective labour. Economic reforms since 1991 have positioned India to capitalize on 21st-century opportunities. The government has enacted trade agreements, liberalized export/import policies, reformed taxes, and incentivized foreign trade to increase global trade share.

The establishment of Special Economic Zones (SEZs) is a crucial part of this strategy. India's SEZ Act of 2005, following new industrial and export-import policies, aimed to boost industrial production and exports by attracting foreign and domestic investment. Maharashtra leads in SEZ approvals, followed by Andhra Pradesh and Tamil Nadu. India has various types of SEZs, including Multi-Product Zones, Sector-Specific Zones, and Free Trade Warehouse Zones, with the IT/ITES sector dominating [1].

Implementing Special Economic Zones (SEZs) in India faces numerous challenges despite their benefits. Issues include difficult land acquisition, particularly in states like West Bengal and Odisha, and site selection influenced by personal interests rather than growth potential. Critics argue that some SEZs prioritize tax benefits over promoting exports, lacking adequate integration with the broader economy, hindering their overall performance.

Controversies involving SEZs encompass land use conflicts, displacement problems, and insufficient compensation, leading to protests and political opposition [2]. The backlash in Nandigram, West Bengal, halted a project due to demands for unused land return. These challenges underscore the complex socio-economic and political landscape surrounding SEZ implementation in India.

B. Need of the Study

Many of India's Special Economic Zones (SEZs), designated between 2006 and 2009, remain inactive, with ongoing protests demanding the return of unused land. By June 2017, around 81 SEZs had been de-notified, signalling a decline in their perceived effectiveness.

Contributing factors include poor location choices, inadequate rehabilitation and compensation schemes, taxes like Minimum Alternate Tax (MAT) and Dividend Distribution Tax (DDT), import duty concessions outside SEZs, and general viability issues [3]. Despite following the Chinese model, Indian SEZs have underperformed, largely due to location-related challenges. This study aims to examine the specific location attributes necessary for SEZ success and develop criteria for evaluating suitable SEZ locations in Kerala.

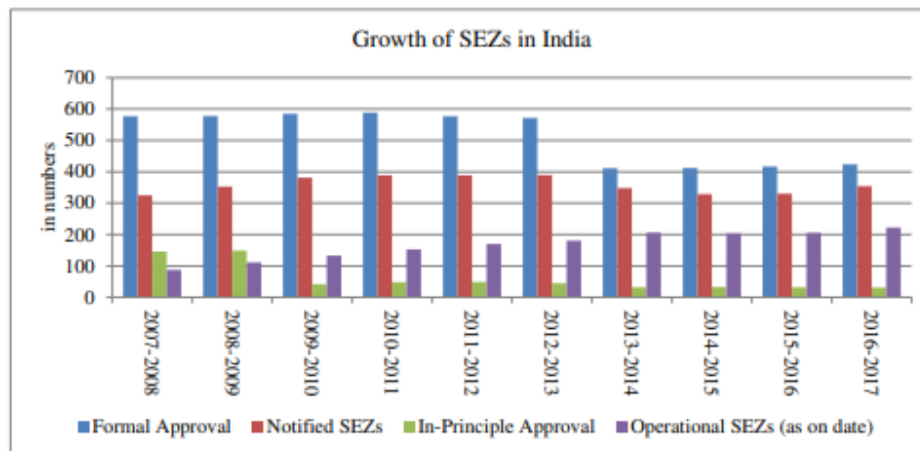


Fig.1 Growth of SEZs in India

The study aims to develop evaluation criteria for identifying ideal SEZ locations in Kerala. Objectives include conducting a background study on SEZs, exploring successful SEZ policies with a focus on location, analysing successful SEZ examples to identify key location attributes, and developing evaluation criteria for Kerala. The research will aid planners and decision-makers in selecting suitable SEZ locations to boost Kerala's economic growth. However, the criteria are specific to Kerala and may differ in other regions, and the study focuses only on locational factors contributing to SEZ failures.

2. RELATED WORKS

A. Success and Failure Factors of SEZs

For developing nations, SEZs serve dual purposes, addressing both policy and infrastructure needs. They are instrumental in enhancing industrial competitiveness and attracting Foreign Direct Investment (FDI) [4]. Governments leverage SEZs to boost exports, stimulate employment growth, and introduce new policies in areas like customs, labor regulations, and public-private partnerships [5]. Key criteria for successful SEZs include location advantage, industrial investment support, and availability of skilled labor [6]. However, SEZs must also address potential long-term issues such as environmental pollution and integrate considerations like human rights and Corporate Social Responsibility (CSR) in their formation.

B. Location Factors of SEZs

The location of an SEZ is crucial for its success, with different types of SEZs requiring proximity to specific resources and infrastructure. Export-oriented SEZs benefit from being near ports and airports, while manufacturing-focused SEZs thrive near skilled labor pools.

SEZs for downstream processing industries, like food processing, should be close to farms and plantations, and those targeting local markets need access to local consumers [7]. Supporting industries and amenities like banking, schools, and healthcare also play a significant role. Challenges such as remoteness, lack of raw materials, and limited export channels can hinder SEZ success, making strategic location selection vital.

C. SEZ Policies in India

India's SEZ Act of 2005 marked a significant shift in SEZ policy, providing a comprehensive framework for SEZ establishment and operation, replacing previous regulations under the Foreign Trade Policy and various acts. The Act allows the Central and State Governments to offer fiscal and other incentives, designates SEZs as territories beyond India's customs jurisdiction, and includes provisions for setting up units, exemptions, and infrastructure development.

The SEZ Rules of 2006 and their subsequent amendments set minimum land requirements for different types of SEZs, aiming to optimize land use and promote sector-specific developments. This regulatory framework has facilitated the growth of SEZs in India, contributing significantly to the country's economic development.

Case Study

A. Shenzhen SEZ, China

China's SEZ model began in the 1970s with regulations passed in 1980, starting with Shenzhen, Zhuhai, Shantou, and Xiamen [8]. The success of these zones led to further expansions and the establishment of numerous other trade and development zones across the country [8]. SEZs in China have benefited from liberal policies, strategic locations, and robust government support, contributing to rapid industrial and economic growth. Shenzhen SEZ, established in 1980, transformed from a fishing village to a leading high-tech and financial hub, driven by strategic reforms, favourable policies, and significant foreign investments [9].

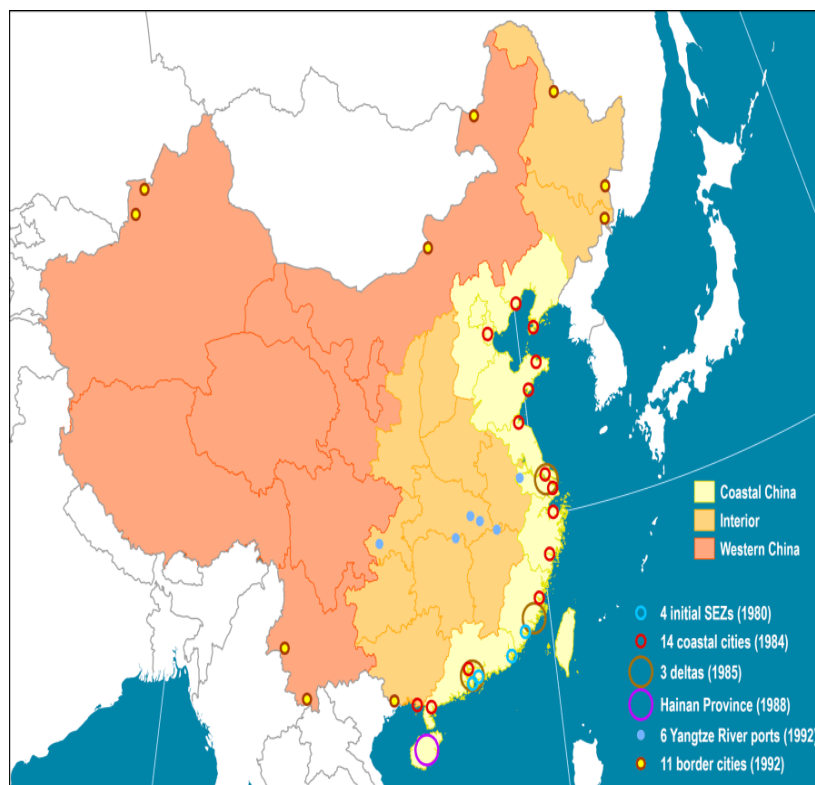


Fig.1 Map showing Investment Regions in China

B. Kandla SEZ, Gujarat

Kandla SEZ, located in Gujarat, India, is the country's first and largest multi-product SEZ. Established in the port town of Gandhidham, it offers extensive infrastructural facilities and benefits from strategic proximity to major ports and transportation networks [10]. Managed by the government, KASEZ provides lower rents and user charges, attracting significant investments, particularly from the pharmaceutical industry. Its prime geographic location and comprehensive support services make it an ideal destination for export-oriented manufacturing units [10].



Fig.3 Map Showing Location of Kandla SEZ

C. GIFT City SEZ, Gujarat

Gujarat International Finance Tech-city (GIFT) SEZ is India's first International Financial Services Centre (IFSC) under the SEZ Act of 2005 [11]. Located between Ahmedabad and Gandhinagar, GIFT IFSC aims to be a global financial hub, offering tax exemptions, centralized regulation, and state subsidies. Its strategic location and advanced infrastructure make it a cost-effective and attractive destination for businesses, benefiting from a skilled workforce and reduced operational expenses [11].

Locational Factors Identified

The success of SEZs, whether at national or international levels, hinges significantly on strategic location. This critical factor is thoroughly analyzed through various criteria, highlighting the importance of geographical positioning. Factors such as proximity to seaports and international airports, access to well-developed investment zones with robust infrastructure, efficient networking services, favorable tax incentives, initiatives promoting job creation and industrial development, and a supportive regulatory environment are identified as

crucial elements contributing to their achievements. These findings underscore how SEZs strategically positioned in conducive environments can leverage favorable conditions for economic expansion, industrial growth, and job generation. By optimizing these location-related factors, SEZs can enhance their prospects for sustained success, fostering economic prosperity both domestically and globally.

Primary Study

A. SEZ Scenario in Kerala

Kerala's Special Economic Zones (SEZs) play a crucial role in the state's economic growth, aligned with its Industrial and Commercial Policy aimed at fostering a growth-oriented entrepreneurial economy. The state currently has 26 notified SEZs, eight of which are yet to become operational [12]. The Cochin Special Economic Zone (CSEZ), established in 1985 in Kochi, is the most prominent, transforming from an Export Processing Zone to an SEZ in 2000 to improve export performance and attract investments [12]. It benefits from extensive connectivity, favorable fiscal and non-fiscal incentives, and robust infrastructure, significantly contributing to Kerala's export output and industrial growth. However, understanding the reasons behind the non-operational status of the other SEZs is essential for maximizing their economic potential.

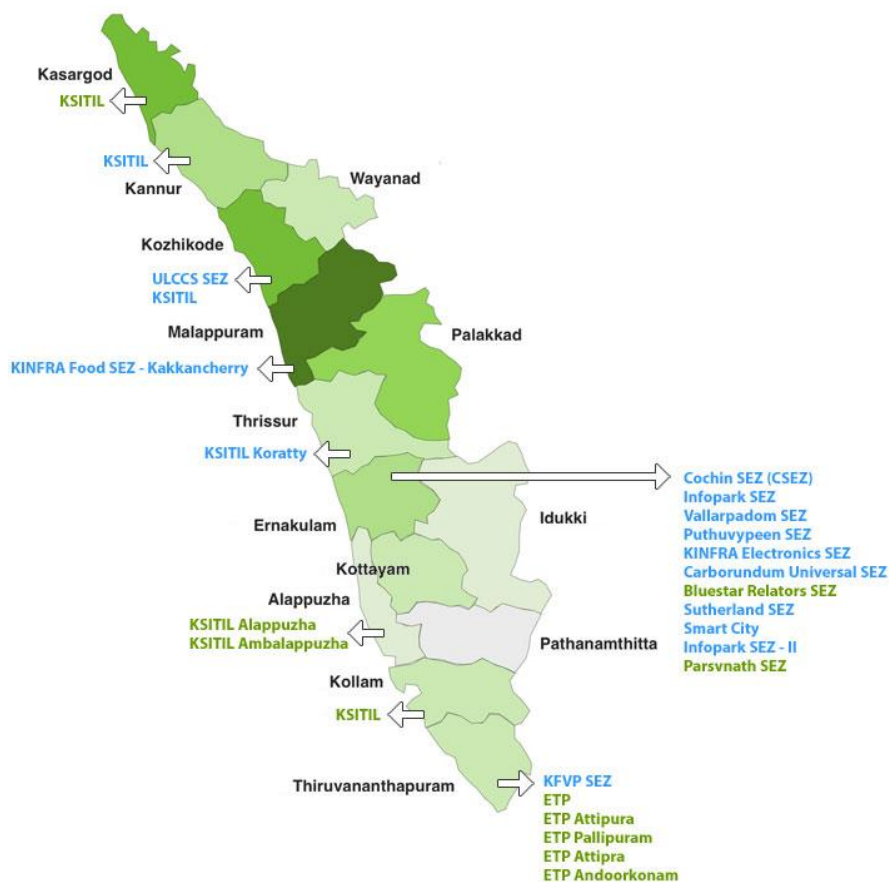


Fig. 4 Map showing SEZs in Kerala – Operational (Blue) and Non-Operational (Green)

The Eramam IT Park in Kannur and Cheemeni IT Park in Kasargod illustrate the challenges faced by non-operational SEZs in Kerala [12]. Eramam IT Park, designated in 2009, aimed to employ thousands in the IT sector but remains stalled due to administrative and infrastructural obstacles, including inadequate road access [13]. Similarly, the Cheemeni IT Park, proposed in 2013, intended to boost the IT and knowledge industries in the Malabar region but faced issues with connectivity and infrastructure, leading to plans for its denotification and conversion into a business park. These cases highlight the importance of thorough feasibility studies and proper infrastructure development to ensure the success of SEZs in driving regional economic growth.



Fig. 5 Existing Condition of Eramam IT Park SEZ



Fig. 6 Existing Condition of Cheemeni IT Park SEZ

B. Expert Opinion Survey

A multiple criteria problem involves various conflicting priorities that decision makers must address. Multiple Criteria Decision-Making (MCDM) processes typically require understanding the relative importance of each criterion. Methods for assessing these criteria often rely on human judgment, either through individual assessments or group evaluations by experts. The importance of criteria can be expressed in terms of priority, which involves listing criteria by importance, or weighting, which assigns numerical values to indicate their significance.

C. Rating Selected Factors

In this study, a rating method is employed to assign weights to selected factors. Each expert is asked to provide a numerical rating on a scale of 0-9, for each criterion. Each of the 12 experts' ratings contributed to the weighting process, enabling a comprehensive evaluation of the decision-making process. The calculated weights for each criterion are shown in Table 1, providing a structured approach to evaluating the factors influencing SEZ locations.

Table1: Derived Weights for Each Factors

Sl. No.	Factors	Weights
1	Distance from Roads	0.07
2	Distance from Big Cities	0.058
3	Distance from Seaport	0.056
4	Distance from Airport	0.069
5	Distance from Residential Area	0.046
6	Availability of Infrastructure	0.072
7	Land Use	0.062
8	High External Connectivity	0.072
9	Availability of Human Resources	0.063
10	Availability of Raw Materials	0.054
11	Favourable Market	0.051
12	Price of Land	0.046
13	Tax Concession	0.062
14	General Environmental Criterion	0.051
15	Distance From Rivers	0.046
16	State (Backward or Developed)	0.053

D. Setting Range for Selected Factors

To formulate effective policy recommendations, it is crucial to analyse factors within appropriate ranges for evaluating SEZ locations. India's National and State SEZ Policies lack predefined ranges for such evaluations, highlighting the need for establishing these ranges. An expert opinion survey was conducted, with a 50% participation rate from selected experts, to define these ranges and identify additional considerations. This survey is significant as it provides a comprehensive set of ranges for various factors, facilitating the identification of

feasible SEZ locations in Kerala. The ranges determined by the experts are outlined in Table 2, offering valuable insights for location evaluation and policy formulation.

Table2: Ranges given by Experts

Expert No.	Distance from Major Roads	Distance from Large Cities	Distance from Seaport	Distance from Airport
1	5-10km	15-20km	20-30km	10-20km
2	Within 10km	10-15km	10-20km	10-20km
3	Less than 10km	Less than 10km	Depending upon the kind of investment. If it is export oriented, good connectivity is necessary	Depends on type of investment. Within half an hour distance.
4	Distance from Airport	Should be away from the mother city followed by a buffer zone	Preferably near to ports for transshipment	Can be located away, but should have good connectivity via roads

3. METHODOLOGY

The methodology for this study unfolds across several structured stages. In Stage 1, the foundational aspects are established by defining the research aim and objectives, emphasizing the importance of studying Special Economic Zones (SEZs), and acknowledging the study's inherent limitations. Transitioning to Stage 2, a comprehensive literature review is conducted encompassing definitions, impacts, and critical success factors of SEZs. This stage also involves a detailed examination of SEZ policies at both national and state levels in India, alongside an exploration of international literature focusing on the locational strategies crucial for SEZ success. Stage 3 adopts a case study approach, analysing successful SEZ examples such as Pomeranian SEZ, Kandla SEZ, and Shenzhen SEZ through a comparative analysis of their locational aspects.

Stage 4 proceeds with an expert opinion survey to gather insights from experienced individuals in SEZs and locational strategies. Finally, the last stage involves developing evaluation criteria specifically tailored to the Kerala context, aimed at assessing suitable locations within Kerala for establishing SEZs. This methodological framework ensures a systematic and comprehensive approach to investigating and evaluating SEZ locational strategies, specifically tailored to the study's geographical focus.

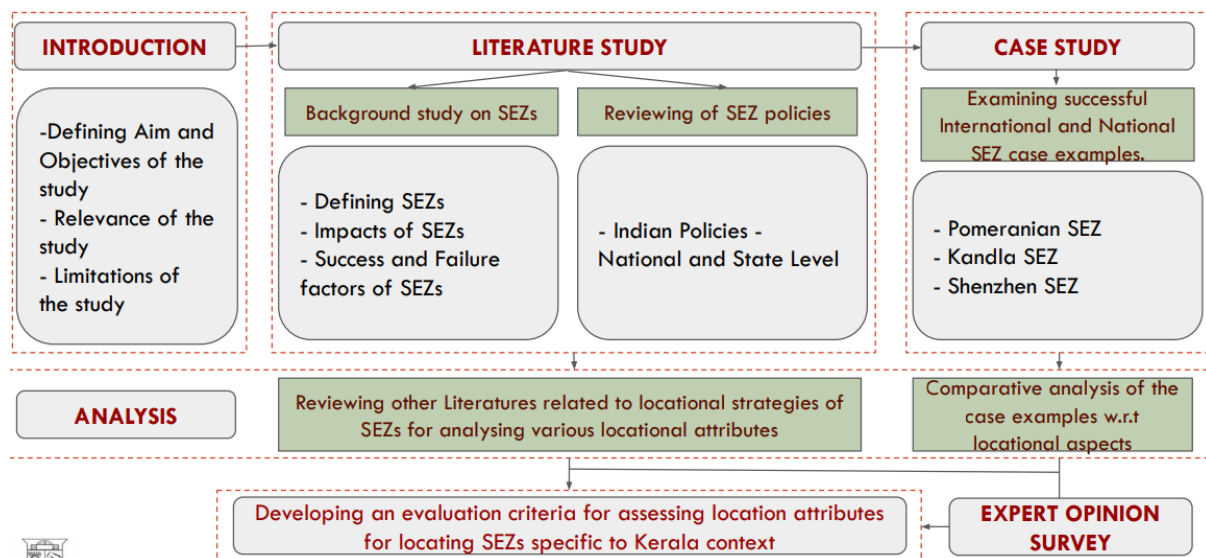


Fig. 7 Methodology of the study

4. RESULTS AND FINDINGS

In the expert opinion survey conducted to assess factors influencing SEZ location selection in Kerala, the analysis of weights assigned by experts revealed that high external connectivity and infrastructure availability are paramount considerations. Proximity to major roads and distance from major cities also emerged as crucial factors, underscoring their significant influence. Raw material availability was identified as another key determinant in SEZ location decisions. Conversely, factors such as distance from rivers, proximity to residential areas, and land price received lower weights, suggesting their lesser importance and potential exclusion from further considerations in SEZ location evaluations. This comprehensive analysis distilled the essential factors down to 13 key criteria deemed vital for SEZ location assessment in Kerala. The survey also established ranges for each selected factor based on expert consensus. These ranges were tailored to suit the specific context of SEZ location in Kerala, providing a structured framework for evaluating potential SEZ sites. By defining these ranges, the survey aimed to standardize the evaluation process and enhance the clarity of decision-making regarding SEZ development in the state. Comparative analysis was then conducted between the established factor ranges and case studies of SEZs across India, including notable examples from Kerala. This comparison involved scrutinizing both successful and failed SEZ projects to derive insights into the critical factors contributing to their outcomes. By integrating findings from these case studies with the results of the expert opinion survey, specific policy recommendations were formulated. These recommendations are intended to inform Kerala's SEZ Policy, aiming to streamline the evaluation process and optimize the success potential of future SEZ ventures in the state.

A. Policy Recommendations

As a conclusive outcome of this investigation, several policy recommendations have been formulated to guide the assessment of SEZ locations within the context of Kerala. These

recommendations aim to provide valuable guidance to decision-makers and planners, enabling them to strategically position SEZs for optimal success and impact. Policy recommendations for SEZ location and infrastructure in Kerala context are as follows:

- 1. Proximity to Transportation Networks:** SEZs are recommended to be ideally situated along or within a 10 km radius of national highways (NH) to ensure efficient connectivity. Additionally, they should be located within a 2 km radius of arterial roads to facilitate ease of access.
- 2. Public Transportation Provision:** It is essential to ensure the availability of public transportation systems to and from SEZs to promote accessibility for employees and stakeholders.
- 3. Road Infrastructure Standards:** Access roads leading to SEZs should have a minimum width of 6 meters to accommodate smooth traffic flow and logistics operations.
- 4. High External Connectivity:** SEZs must prioritize high external connectivity through robust transportation systems to facilitate trade and attract foreign direct investment (FDI).
- 5. Proximity to Markets:** SEZs should be strategically located near large cities within a 30 km radius to capitalize on market access and leverage urban growth opportunities.
- 6. Accessibility to Ports and Airports:** Optimal SEZ locations should be within 35-40 km from seaports and airports to streamline import-export activities and enhance global connectivity.
- 7. Avoidance of Urban and Ecological Constraints:** SEZs should steer clear of dense urban areas, ecologically sensitive zones, and areas with productive or fragile landforms to minimize environmental impact and land use conflicts.
- 8. Proximity to Developed Regions:** Economic investment zones should be situated in close proximity to developed regions to leverage their influence and foster potential for sustained growth and development.
- 9. Infrastructure Provision:** Comprehensive infrastructure facilities such as power supply, water supply, transportation, sewage treatment systems, and telecom services should be readily available within SEZs. Additionally, amenities like small-scale shopping and eateries should be provided for the convenience of employees.
- 10. Residential Infrastructure:** SEZ planning should include provisions for residential growth to accommodate the anticipated influx of workers and promote real estate development.
- 11. Access to Raw Materials:** SEZs should ensure proximity to sources of raw materials to support manufacturing and production activities effectively.

5. CONCLUSIONS

In conclusion, the study underscores the pivotal role of Special Economic Zones (SEZs) in driving Kerala's trajectory towards sustained economic growth. With a primary focus on knowledge-intensive sectors such as IT, IT-enabled services (ITES), biotechnology, and engineering, SEZs serve as engines of innovation, fostering an environment conducive to attracting and retaining highly skilled professionals. This strategic emphasis positions Kerala favourably on the path towards transitioning into a dynamic knowledge-based economy, poised to thrive in the modern global landscape. However, the successful realization of SEZs' potential

hinges critically upon meticulous planning, efficient execution, and responsible administration. Identifying optimal locational attributes emerges as a pivotal determinant in evaluating the feasibility of establishing SEZs or economic investment zones within Kerala. Key considerations include proximity to major transportation hubs, robust external connectivity, and the availability of essential infrastructure. Informed by comparative analyses and insights gleaned from expert opinion surveys, the research advocates for the formulation of evidence-based policy recommendations tailored to Kerala's unique context. These recommendations, when seamlessly integrated into the state-level SEZ policy framework, stand to reinforce the groundwork for future SEZ initiatives. By adhering to these criteria, policymakers can cultivate an environment conducive to sustainable economic growth, thereby solidifying Kerala's position as a beacon of prosperity both regionally and nationally. Policymakers must prioritize implementing these recommendations to align with the goal of fostering economic development. By integrating lessons from past experiences, Kerala can leverage SEZs' transformative potential to enhance prosperity and competitiveness globally. SEZs are pivotal in Kerala's economic strategy, facilitating inclusive growth, job creation, and increased productivity. Through strategic planning, effective governance, and proactive policymaking, Kerala can fully harness SEZs to catalyze sustainable economic development and ensure a prosperous future for its citizens.

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6. REFERENCES

1. A, "Performance of Export Processing Zones: A Comparative Analysis of India, Sri Lanka and Bangladesh," Indian Council for Research on International Relations, 2005.
2. S. Tewari, "Land Utilisation in Special Economic Zones in India: A Macro and Micro Scenario," Indian Institute of Public Administration, vol. L II, no. Part 4, p. 26, 2020.
3. S. LB, "Evolution and Performance of Indian EPZs /SEZs," 2016.
4. P. P, "Location and Key Success Factors of Special Economic Zones in Thailand," 2017.
5. W. Jin, "The Economic Impact of Special Economic Zones: Evidence from Chinese Municipalities," Sciencedirect, 2013.
6. Farole and Dobronogov, "An Economic Integration zone for the East African Community," 2012.
7. T. Singh and T. Dhingra, "Special Economic Zones- An Indian Approach," Sage Journals, 2009.
8. Sit and Victir, "The Special Economic Zones of China: A New Type of Export Processing Zone?," 2007.



9. Zeng, Douglas and Zhihua, "Building Engines for Growth and Competitiveness in China," 2010.
10. "KASEZ," The Gandhidham Chamber of Commerce. [Online].
11. "An Detailed Overview of IFSC GIFT City," GIFT City, 2023. [Online].
12. "Cochin SEZ," CSEZ, [Online]. Available: csez.in.
13. "Cyberpark," Cyberpark Kerala. [Online].