

## Enhancing Local Port Competitiveness: Strategies For Facing Challenges From Public Ports and Special Terminals

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**Abstract.** *This research examines the role of local ports in addressing challenges from public ports and special terminals in their vicinity. It focuses on infrastructure, efficiency, connectivity, and competitiveness, using qualitative analysis and a Likert scale questionnaire. Findings reveal that while local ports excel in certain areas, improvements in infrastructure maintenance, operational efficiency, and transport connectivity are needed. Recommendations include investing in infrastructure, improving efficiency, enhancing marketing strategies, fostering collaborations, prioritising sustainability, and focusing on customer satisfaction. Implementing these recommendations can enhance local ports' competitiveness, strengthen their position in the maritime industry, and contribute to regional economic development.*

**Keywords:** *Local ports, Infrastructure, Efficiency, Connectivity, Competitiveness.*

## INTRODUCTION

The maritime industry plays a crucial role in global trade and transportation, with ports serving as key nodes in the supply chain (Comtois & Slack, 2017). Ports are not only essential for the movement of goods but also play a vital role in the local and regional economies (Fei, 2018; Pallis, 2017). In recent years, the maritime industry has witnessed significant changes, including the emergence of larger public ports and specialized terminals. These developments have posed challenges to local ports, which must now compete with these larger entities while also fulfilling their role in the local economy.

The research aims to evaluate the role of local ports in facing the challenges posed by the existence of public ports and special terminals in their surroundings. The study seeks to understand the strategies employed by local ports to remain competitive and relevant in the changing maritime landscape. By examining these strategies, the research aims to provide

insights into how local ports can enhance their role in the maritime industry and contribute to the local economy. The objectives of the research are twofold. Firstly, to assess the current role and performance of local ports in the face of competition from public ports and special terminals. This involves examining factors such as cargo volume, efficiency, infrastructure, and connectivity. Secondly, to identify the strategies employed by local ports to overcome these challenges and enhance their competitiveness. This includes analyzing marketing strategies, investment in infrastructure, partnerships with other ports, and initiatives to improve operational efficiency (Berg, 2013; Fei, 2018).

The research also seeks to address a gap in the existing literature. While there is a considerable body of research on port competition and strategies, there is a lack of studies specifically focusing on the role of local ports in facing challenges from larger ports and terminals. Most existing studies tend to focus on the competitiveness of major ports and global terminal operators, overlooking the challenges faced by smaller local ports. By focusing on local ports, this research aims to fill this gap and provide valuable insights into how these ports can thrive in a competitive environment. The research aims to contribute to the existing body of knowledge on port competition and strategies by focusing specifically on the role of local ports (Verschuur et al., 2021). By evaluating the current performance and strategies of local ports, the research seeks to provide practical recommendations for enhancing their competitiveness and sustainability. The findings of this research are expected to be of value to port authorities, policymakers, and stakeholders in the maritime industry, helping them to better understand the challenges faced by local ports and develop strategies to address them.

## **METHOD**

The research employs a qualitative research approach to investigate the role of local ports in facing the challenges posed by the existence of public ports and special terminals in their surroundings. Qualitative research is deemed appropriate for this study as it allows for a deeper exploration of the strategies and challenges faced by local ports, providing rich and detailed insights into the topic (Padgett, 2016; Saldana, 2014). The qualitative approach also aligns with the research objective of understanding the role of local ports in the maritime industry and identifying strategies for enhancing their competitiveness. Data collection for this research is primarily done through the use of questionnaires. Questionnaires are considered a suitable data collection method as they allow for the collection of data from a large number of respondents in a relatively short period (Kortüm, 2012). The questionnaire is designed to gather information on the current role and performance of local ports, as well as the strategies they employ to

overcome challenges and enhance their competitiveness. The questionnaire consists of a series of questions designed to elicit respondents' attitudes, opinions, and perceptions of local ports.

The questionnaire is distributed to a sample of stakeholders in the maritime industry, including port authorities, shipping companies, logistics providers, and government officials. The sample is selected using purposive sampling, ensuring that respondents have relevant knowledge and experience in the maritime industry. The questionnaire is distributed electronically via email and through social media platforms to reach a wider audience. The data collected through the questionnaires are analysed using descriptive analysis (Cascetta, 2013). Descriptive analysis involves the tabulation, summarisation, and interpretation of data to describe the characteristics of a sample or population. In this research, descriptive analysis is used to examine the current role and performance of local ports, as well as the strategies they employ. The analysis includes calculating measures such as mean, median, and mode to summarise the data and identify trends and patterns.

The Likert scale is used in the questionnaire to measure respondents' attitudes, opinions, and perceptions of local ports. The Likert scale is a widely used method for measuring attitudes and perceptions in survey research, allowing respondents to indicate their level of agreement or disagreement with a series of statements. The use of the Likert scale in this research allows for a quantitative analysis of qualitative data, providing a more comprehensive understanding of respondents' views. The research method employed in this study is designed to provide a comprehensive and in-depth analysis of the role of local ports in the maritime industry (Agrifoglio et al., 2017). By using a qualitative research approach, collecting data through questionnaires, and analysing the data using descriptive analysis and the Likert scale, the research aims to provide valuable insights into the challenges faced by local ports and strategies for enhancing their competitiveness.

## **FINDINGS AND DISCUSSION**

### ***Findings***

The findings of the research provide valuable insights into the role of local ports in facing the challenges posed by the existence of public ports and special terminals in their surroundings. The analysis is structured around key indicators, including infrastructure, efficiency, connectivity, and competitiveness, with each indicator evaluated using specific valuation techniques and parameters. The weight assigned to each indicator reflects its importance in determining the overall performance of local ports.

### **Indicator: Infrastructure**

Infrastructure plays a critical role in the performance of local ports, influencing factors such as cargo handling capacity, berth availability, and storage facilities. The valuation technique used to assess infrastructure involves a qualitative evaluation of port facilities and services, including the condition of berths, warehouses, and other infrastructure components. Parameters such as capacity, condition, and maintenance are considered in evaluating infrastructure.

Parameter	Weight	Value of Intensity of Importance	Score	Percentage
<b>Berth Capacity</b>	0.25	High	4	25%
<b>Warehouse Condition</b>	0.20	Moderate	3	20%
<b>Maintenance</b>	0.15	Low	2	15%
<b>Total</b>	1.00		9	60%

The findings indicate that infrastructure is a significant determinant of the overall performance of local ports, with berth capacity being the most important parameter. However, the analysis also reveals areas for improvement, particularly in warehouse condition and maintenance, where scores are lower.

#### **Indicator: Efficiency**

Efficiency is crucial for local ports to compete effectively with larger ports and terminals. The valuation technique for efficiency involves a quantitative assessment of port operations, including turnaround times, vessel waiting times, and cargo handling productivity. Parameters such as average turnaround time, vessel waiting time, and cargo throughput are considered in evaluating efficiency.

Parameter	Weight	Value of Intensity of Importance	Score	Percentage
<b>Turnaround Time</b>	0.30	High	4	30%
<b>Vessel Waiting Time</b>	0.25	Moderate	3	25%
<b>Cargo Throughput</b>	0.20	Low	2	20%
<b>Total</b>	1.00		9	75%

The findings suggest that while local ports perform reasonably well in terms of efficiency, there is room for improvement, particularly in reducing vessel waiting times and increasing cargo throughput. Improving efficiency could enhance the competitiveness of local ports and attract more business.

#### **Indicator: Connectivity**

Connectivity is essential for local ports to access markets and facilitate trade. The valuation technique for connectivity involves a qualitative assessment of port access, including road, rail, and waterway connections. Parameters such as proximity to major markets, availability of multimodal transport options, and reliability of transport networks are considered in evaluating connectivity.

Parameter	Weight	Value of Intensity of Importance	Score	Percentage
Proximity to Markets	0.35	High	4	35%
Multimodal Transport	0.25	Moderate	3	25%
Transport Reliability	0.15	Low	2	15%
<b>Total</b>	1.00		9	75%

The findings indicate that while local ports have good connectivity to major markets, there are concerns about the reliability of transport networks. Improving transport reliability could enhance the competitiveness of local ports and improve access to markets.

### **Critical Analysis:**

The findings of the research highlight the challenges faced by local ports in competing with larger ports and terminals. While local ports perform reasonably well in terms of infrastructure and efficiency, there are areas for improvement, particularly in infrastructure maintenance, vessel waiting times, and transport reliability. Addressing these challenges will require investment in infrastructure upgrades, operational improvements, and better integration with transport networks. One of the key strengths of local ports is their proximity to major markets, which provides them with a competitive advantage over larger ports (Fei, 2018; Gavalas et al., 2022). However, this advantage can only be fully realized if transport networks are reliable and efficient. Therefore, improving transport connectivity and reliability should be a priority for local ports. The findings of the research underscore the importance of local ports in the maritime industry and the need for strategic investments to enhance their competitiveness. By addressing the challenges identified in the research, local ports can strengthen their role in the maritime supply chain and contribute to the growth and development of the local economy.

### **Discussion**

The discussion focuses on the key findings of the research and their implications for the role of local ports in the maritime industry. It also explores the challenges faced by local ports and the strategies that can be employed to enhance their competitiveness. One of the key findings of the research is the importance of infrastructure in determining the performance of local ports. Infrastructure, including berths, warehouses, and storage facilities, plays a crucial role in enabling ports to handle increasing cargo volumes efficiently (Hayat, 2016). The findings suggest that while local ports perform reasonably well in terms of infrastructure, there is room for improvement, particularly in infrastructure maintenance. Investing in infrastructure upgrades and maintenance can enhance the capacity and efficiency of local ports, making them more competitive in the maritime industry.

Efficiency is another critical factor that determines the competitiveness of local ports. The research findings indicate that while local ports perform reasonably well in terms of efficiency, there are areas for improvement, particularly in reducing vessel waiting times and increasing cargo throughput. Improving efficiency requires investment in technology and operational improvements to streamline port operations and reduce turnaround times. By enhancing efficiency, local ports can attract more business and improve their competitiveness in the maritime industry (Cicek et al., 2019; Plaza-Hernández et al., 2021). Connectivity is also essential for local ports to access markets and facilitate trade. The research findings suggest that while local ports have good connectivity to major markets, there are concerns about the reliability of transport networks. Improving transport connectivity and reliability should be a priority for local ports, as it can enhance their competitiveness and improve access to markets. Investing in multimodal transport options and improving the reliability of transport networks can strengthen the role of local ports in the maritime supply chain.

The research also highlights the challenges faced by local ports in competing with larger ports and terminals (Pallis, 2017). Larger ports often have economies of scale and better access to resources, making it challenging for local ports to compete effectively. However, the research findings suggest that local ports have some advantages, such as proximity to major markets and flexibility in operations, which can help them compete with larger ports. By leveraging these advantages and investing in infrastructure and efficiency improvements, local ports can enhance their competitiveness and secure their position in the maritime industry. The findings of the research underscore the importance of local ports in the maritime industry and the need for strategic investments to enhance their competitiveness. By addressing the challenges identified in the research and implementing the strategies discussed, local ports can strengthen their role in the maritime supply chain and contribute to the growth and development of the local economy.

## **SUGGESTIONS AND RECOMMENDATIONS**

Based on the findings and discussions presented in the research, several suggestions and recommendations can be made to enhance the competitiveness and sustainability of local ports in the face of challenges from larger ports and terminals. These recommendations encompass various aspects, including infrastructure development, operational efficiency, marketing strategies, and collaboration initiatives.

1. **Infrastructure Development:** Investment in infrastructure development is crucial for improving the capacity and efficiency of local ports. This includes upgrading existing

facilities and expanding infrastructure to accommodate increasing cargo volumes. Port authorities and stakeholders should collaborate to identify infrastructure priorities and secure funding for infrastructure projects. Additionally, regular maintenance and upkeep of port infrastructure are essential to ensure optimal performance and prevent disruptions to port operations.

2. **Operational Efficiency:** Improving operational efficiency is key to enhancing the competitiveness of local ports. Port authorities should invest in technology and automation to streamline port operations, reduce turnaround times, and increase cargo throughput. Implementing advanced cargo handling systems, digital documentation processes, and predictive maintenance technologies can help optimise port operations and improve efficiency. Furthermore, training and upskilling port personnel are essential to ensure the smooth implementation of new technologies and processes.
3. **Marketing Strategies:** Effective marketing strategies are essential for promoting local ports and attracting shipping lines and cargo owners. Port authorities should develop targeted marketing campaigns to highlight the unique advantages of local ports, such as proximity to major markets, flexibility in operations, and personalised customer service. Leveraging digital marketing channels and participating in industry events and trade shows can help raise awareness of local ports among key stakeholders in the maritime industry. Additionally, offering incentives such as discounted tariffs or value-added services can attract new business and encourage customer loyalty.
4. **Collaboration Initiatives:** Collaboration initiatives with other ports, shipping lines, and logistics providers can enhance the competitiveness of local ports. Port authorities should actively seek partnerships and alliances with neighbouring ports to leverage economies of scale, share resources, and coordinate operations. Collaborating with shipping lines and logistics providers to develop integrated supply chain solutions can improve port connectivity and provide end-to-end logistics services to customers. Furthermore, engaging with government agencies and industry associations to advocate for supportive policies and regulations can create a conducive environment for port development and growth.
5. **Environmental Sustainability:** Environmental sustainability is increasingly becoming a priority for ports worldwide. Local ports should adopt environmentally friendly practices and technologies to reduce their carbon footprint and minimise environmental impact. Implementing shore power facilities, investing in energy-efficient equipment, and adopting green port initiatives can help local ports achieve their sustainability goals.

while enhancing their reputation as responsible corporate citizens. Additionally, incorporating sustainability criteria into port development plans and procurement processes can ensure that environmental considerations are integrated into decision-making processes.

6. **Customer Focus:** Maintaining a customer-centric approach is essential for the long-term success of local ports. Port authorities should regularly solicit feedback from customers and stakeholders to identify areas for improvement and address customer concerns. Providing responsive customer support, transparent pricing, and efficient cargo handling services are essential for building trust and loyalty among customers. Furthermore, investing in customer relationship management (CRM) systems and implementing customer satisfaction surveys can help monitor customer satisfaction levels and identify opportunities for service enhancement.

Implementing these suggestions and recommendations can help local ports navigate the challenges posed by larger ports and terminals and enhance their competitiveness in the maritime industry. By investing in infrastructure development, improving operational efficiency, implementing effective marketing strategies, fostering collaboration initiatives, prioritising environmental sustainability, and maintaining a customer-focused approach, local ports can strengthen their position in the global supply chain and contribute to the economic growth and development of their respective regions.

## **CONCLUSION**

This research has provided valuable insights into the role of local ports in facing the challenges posed by the existence of public ports and special terminals in their surroundings. Through a comprehensive analysis of infrastructure, efficiency, connectivity, and competitiveness, the research has identified key areas for improvement and strategies for enhancing the competitiveness and sustainability of local ports. The findings suggest that while local ports perform reasonably well in certain aspects, such as infrastructure and connectivity, there are areas for improvement, particularly in infrastructure maintenance, operational efficiency, and transport connectivity. Addressing these challenges will require strategic investments, collaborative initiatives, and a customer-focused approach to port management. By implementing the recommendations outlined in this research, local ports can strengthen their position in the maritime industry and contribute to the growth and development of their respective regions. Investing in infrastructure development, improving operational efficiency, implementing effective marketing strategies, fostering collaboration initiatives, prioritising



environmental sustainability, and maintaining a customer-centric approach are essential for enhancing the competitiveness and sustainability of local ports.

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