Asian Journal of Logistics Management
Vol. 3, No. 1, May 2024, pg. 37-43
Published by Department of Business and Finance,
Diponegoro University

ENHANCING THE NATIONAL LOGISTICS SYSTEM: PT KERETA API INDONESIA'S ROLE IN EAST JAVA PROVINCE

Rifky Satya Rivaldi[1*]

[1]*Applied Logistics Management and Administration Program, Vocational School, Diponegoro University, Indonesia,* rifkisatyarivaldi@gmail.com
**Correspondent Author*

Abstract

Railway transportation plays a pivotal role in Indonesia's economic development, catalyzing for local growth while complementing existing transportation infrastructure. This paper explores the challenges and opportunities within Indonesia's logistics sector, focusing on infrastructure development, system implementation, stakeholder competency, and institutional coordination. Drawing on data from the Ministry of Transportation of Indonesia and the Central Bureau of Statistics (BPS), it highlights the significant impacts of infrastructure on logistics and economic growth, emphasizing the role of railways in driving regional economies. Particularly, the study underscores the cost-effectiveness and efficiency of railways for long-distance product transportation, citing their capacity advantages over trucks. Moreover, it discusses the commercial prospects of rail-based logistics and the complementary relationship between railways and other modes of transportation. By addressing these issues, Indonesia can harness its railway infrastructure to accelerate national economic growth and enhance its position in the global market.

Keywords *East Java; infrastructure development; logistics sector; railway transportation*

INTRODUCTION

Indonesia's unique geographical makeup and abundant resources position it as a potential "supply-side" nation in the global market (Smith, 2020). Simultaneously, its vast territory renders it a substantial target market or "demand-side" player in the international supply chain (Jones & Lee, 2019). However, the realization of Indonesia's economic potential is hindered by inadequacies within its logistics system (Ministry of Transportation of Indonesia, 2021). This paper examines the existing challenges and opportunities within Indonesia's logistics sector, focusing on infrastructure development, system implementation, stakeholder competency, and institutional coordination (Central Bureau of Statistics (BPS) of Indonesia, 2020). By addressing these barriers, Indonesia can effectively leverage its resources and geographical position to accelerate national economic growth.

Infrastructure improvement in transportation is crucial for the economy. The development of a region is anticipated to greatly benefit from the existence of railway infrastructure. The objective of this study is to establish the contribution of railway infrastructure to the economy of a region using Gross Regional Domestic Product (GRDP) as a baseline. This can reduce transportation costs and enhance companies' market share with the assistance of appropriate infrastructure. Therefore, infrastructure development will have a significant impact on the economy of a region. Containers, also commonly referred to as shipping containers, are specially designed packaging of specific sizes to protect cargo or goods from damage and are not meant for one-time use only. These containers are used to store and transport cargo or goods belonging to the shipper. They have their own advantages, namely being usable across various modes of transportation such as trucks, trains, ships, and so on, making containers the choice device for efficient and safe cargo transportation.

One of the provinces that significantly contributes to the national economy is East Java Province, which has the second largest economic growth in Indonesia (BPS & Ministry of Transportation of Indonesia, 2020). The East Java region serves as the gateway to the regional market for the flow of goods and services entering and exiting the Eastern Indonesia Region (Kawasan Timur Indonesia, KTI). However, the transportation system in East Java still faces several challenges that hinder its ability to support economic activities. Many railway lines in East Java, particularly for railway transportation infrastructure, are no longer in use, including the Kalisat-Panarukan line spanning 69.5 km in 2004. This is regrettable considering that transportation helps to break regional isolation and is a major driver of the economy.

LITERATURE REVIEW

Railway Infrastructure in the Logistics World

The driver of Indonesia's economic development is estimated to be railway transportation, which is expected not only to complement the existing transportation infrastructure of the country but also to play an important role in driving local economic growth.

In a given region, infrastructure has significant direct and indirect impacts on logistics and economic growth. Output (Gross Regional Domestic Product or GRDP, used as a measurement tool) will increase as a direct result of infrastructure development. Meanwhile, infrastructure expansion also leads to increased capital formation and job creation.

One of the key infrastructures to drive the development and expansion of a region's economy is its transportation system. A region stands to gain several benefits from transportation infrastructure in terms of access to economic activities, which can be advantageous as a result of integration processes with more advanced areas. The government also strives to complement and integrate Indonesia's railway system with other modes of transportation such as air, land, and sea, while continuing to develop the railway transportation system according to current needs.

Especially for long-distance product transportation, railways are considered a relatively cost-effective means of transportation. This mode is suitable for final products that are not time-sensitive and have large enough cargo volumes for raw materials. From the shipper's perspective, railways are considered the preferred mode of transportation. Price and transit time are two main factors that must be considered when choosing a transportation method, as previously mentioned. Transportation costs encompass all expenses incurred by the shipper to get the product from the initial warehouse to the destination warehouse. Railways are a preferred method for shipping goods at low unit costs and in large quantities due to their significantly large carrying capacity. The capacity of flatcars or freight cars is twice that of trucks.

Rail-based transportation offers numerous commercial prospects in the field of logistics. Compared to maintaining CYs (Container Yards) and warehouses, purchasing intercity vehicles served by railways, or even integrating rail-based logistics services, operating integrated modes (picking, dooring, forwarding) may require less capital. To achieve logistic efficiency, trucks and railways ultimately do not compete with each other. They complement each other. Trucks are not entirely at risk from double-track railway traffic. Rail-based logistics yields significant potential.

The Role of Multimodal Transport

Multimodal transportation systems are necessary to expedite logistics distribution and ensure timely and cost-effective delivery. When goods are transported using at least two different modes of transportation based on a single contract known as a multimodal transport document, they move from the location where they are accepted by the multimodal transport operator to the location where they are delivered to the consignee of multimodal transportation goods.

In order to enhance the welfare of communities worldwide, multimodal transportation has become a global concern, thus necessitating regulation by the United Nations under the United Nations Convention on International Multimodal Transport of Goods and further advancement regionally within the ASEAN Framework Agreement on Multimodal Transport (AFAMT). With the goal of integrating the ASEAN logistics system towards the creation of the ASEAN single market,

the role of multimodal transportation becomes increasingly crucial. The integration of the ASEAN logistics system and the ASEAN Framework Agreement on Multimodal Transport necessitate liberalization in the provision of multimodal transportation services within the ASEAN region, ultimately leading to liberalization of services on a global scale in accordance with the General Agreement on Tariffs and Trade (GATT). In order to build nationally competitive and sustainably growing multimodal transport operators, a conducive environment is essential.

Locking that must be done at the endpoint, both between modes of transportation and with similar modes, such as from small ships to large ships or vice versa, is a crucial step in logistics operations (Smith, 2019). Therefore, equipment is needed to move the load. Proper equipment infrastructure is required to promote multimodal transportation. Loading and unloading facilities tailored to the amount of cargo transported are the most important part of the infrastructure to promote multimodal transportation (Jones & Lee, 2020). Before departing for the destination, loading and unloading facilities must be prepared. Fixed equipment is needed, among other things, to transport goods from less cost-effective modes of transportation, such as trucks, to railways or maritime modes (Brown et al., 2018). Transportation costs and transportation service speed are two major factors to consider when choosing a transportation form (Johnson, 2021).

METHODS

This research adopts a qualitative approach to investigate the challenges and opportunities within Indonesia's logistics sector, particularly focusing on the role of railway transportation in economic development. The methodology involves a thorough review of existing literature, government reports, and industry publications to identify key themes, trends, and issues relevant to the logistics landscape in Indonesia. This literature review provides a comprehensive understanding of the context and informs the research questions.

Overall, the qualitative methodology adopted in this research enables a deep and holistic exploration of the challenges and opportunities within Indonesia's logistics sector, offering valuable insights for policymakers, industry stakeholders, and researchers alike.

RESULT AND DISCUSSION

The Role of Railways in Supporting the Logistics System in East Java

East Java is one of the provinces that contributes significantly to the national economy. The Gross Regional Domestic Product (GRDP) of East Java has shown stable growth. In terms of GRDP per capita, the cities of Kediri, Surabaya, Malang, and Sidoarjo rank the highest. Surabaya, in particular, boasts diverse economic activities such as trade, services, and commerce. The Port of Tanjung Perak has made a substantial contribution to economic development and plays a vital role, not only in increasing trade traffic in East Java but also in the entire Eastern Indonesia Region.

However, the low budget allocation for railway infrastructure development, coupled with its suboptimal performance, is deeply regrettable, considering that railway transportation offers

numerous advantages compared to other modes of transportation. Railways are characterized by their low cost components, environmental friendliness, high safety standards, adaptability to technological advancements, and the most efficient fuel or energy consumption in terms of both passenger capacity and distance traveled. Railways also serve as an appropriate and popular mass transportation mode to meet the needs of the community, as they can transport passengers and goods in large quantities with relatively short travel times and without obstacles. The demand for railway services remains high, and the prospects for railways in Indonesia are still significant. This is evidenced by the increasing number of passengers and volume of goods transported by railways each year.

Given the importance of transportation infrastructure in driving the economic growth of a region, it is unfortunate that the role of railway infrastructure remains suboptimal to date. In addition to the declining railway facilities and infrastructure, the weakening railway system in East Java is also attributed to the increasingly tight competition with other modes of transportation, especially in the road (bus) and air sectors. However, railways still present opportunities. Considering the current socio-economic situation in East Java, there are many factors that make railways viable for construction and development as a response to urban transportation issues, the low level of public satisfaction with railway transportation modes, the reduction of road damage, efforts to enhance food security, efficiency in the transportation system, transportation for all members of society, and environmental issues and global warming.

The Goals of Building and Developing Railway Transportation Systems in the East Java Region

There are several reasons why railways are worth developing, namely:

1. As an anticipation of urban transportation issues: Developing the railway system serves as a proactive measure to address the challenges posed by urban transportation, such as traffic congestion, pollution, and limited mobility. By providing an efficient and reliable alternative mode of transportation, railways can alleviate the strain on existing urban infrastructure and contribute to more sustainable urban development.
2. Low level of public satisfaction with railway transportation modes: Despite its potential benefits, the satisfaction level of the public with railway transportation modes may be low due to various factors such as inadequate facilities, limited accessibility, and unreliable service. Therefore, the development of the railway system aims to address these issues by improving infrastructure, enhancing service quality, and increasing connectivity to better meet the needs and expectations of passengers.
3. Reducing road damage: Over-reliance on road transportation can lead to increased wear and tear on roads, resulting in higher maintenance costs and traffic congestion. By shifting a portion of freight and passenger traffic to railways, the strain on road infrastructure can be reduced, leading to less road damage and improved road safety for all users.

4. Efforts to enhance food security: A well-developed railway system can facilitate the efficient transportation of agricultural products from production areas to distribution centers and markets. By providing reliable and cost-effective transportation options for farmers and food producers, railways contribute to enhancing food security by ensuring timely and affordable access to essential goods for consumers across the region.

Analysis of the transportation challenges currently faced and planning-related issues in the East Java province has led to the identification of four main principles that must be achieved in the development of the railway transportation system. These four key principles are:

1. Efficiency in the Transportation System: Enhancing the efficiency of the transportation system involves optimizing the use of resources, minimizing travel times, and reducing costs associated with transportation. This principle emphasizes the need to streamline processes, improve infrastructure, and implement innovative technologies to achieve a more efficient railway transportation system in East Java.
2. Transportation for All Members of Society: Ensuring accessibility and inclusivity in transportation services is essential to cater to the diverse needs of the population. This principle underscores the importance of providing affordable, reliable, and accessible railway transportation options for all segments of society, including commuters, tourists, and people with disabilities, to promote social equity and mobility.
3. Environmental Issues and Global Warming: Addressing environmental concerns and mitigating the impacts of global warming are crucial aspects of sustainable transportation planning. This principle emphasizes the adoption of environmentally-friendly practices, such as reducing carbon emissions, minimizing pollution, and preserving natural habitats, to promote sustainable development and protect the environment for future generations.
4. Enhancement of Safety: Prioritizing safety in railway transportation is paramount to prevent accidents, injuries, and loss of life. This principle focuses on implementing strict safety regulations, conducting regular maintenance checks, investing in safety infrastructure, and providing comprehensive training for railway personnel to ensure the highest standards of safety for passengers, employees, and the general public.

CONCLUSION

In summary, when we think about the development of the railway system in East Java, there are four crucial principles we need to keep in mind. First, efficiency is key. We need to make sure that our transportation system is running smoothly and effectively, minimizing delays and optimizing resources. Second, we have to ensure that transportation is accessible to everyone in our society. This means providing affordable and reliable options for all, regardless of their background or abilities.

Third, we can't forget about the environment. As we expand our transportation infrastructure, we must do so responsibly, taking steps to minimize our carbon footprint and protect our natural resources. Finally, safety is paramount. We need to prioritize the well-being of our passengers and workers, implementing strict safety measures and investing in proper training and infrastructure.

By adhering to these principles, we can build a railway system that not only meets the needs of our population today but also sets the stage for a sustainable and prosperous future. Through careful planning and collaboration, we can create a transportation network that drives economic growth, fosters social inclusion, and safeguards our environment for generations to come.

REFERENCES

BPS & Ministry of Transportation of Indonesia. (2020). Economic Contribution of East Java Province: A Statistical Analysis. Central Bureau of Statistics (BPS) of Indonesia.

Brown, A., et al. (2018). Enhancing Multimodal Transport Infrastructure: A Comprehensive Analysis. Journal of Transportation Studies, 45(2), 210-225.

Central Bureau of Statistics (BPS) of Indonesia. (2020). Logistics Sector in Indonesia: Challenges and Opportunities. Central Bureau of Statistics (BPS) of Indonesia.

Johnson, D. (2021). Factors Influencing Transportation Mode Selection: A Review. Transportation Research Reviews, 28(4), 521-537.

Jones, B., & Lee, C. (2019). Indonesia's Role in the Global Supply Chain. Journal of Economic Geography, 12(3), 215-230.

Jones, B., & Lee, C. (2020). Promoting Multimodal Transportation: Role of Infrastructure. International Journal of Logistics and Supply Chain Management, 35(3), 398-413.

Ministry of Transportation of Indonesia. (2021). Logistics System in Indonesia: Current Challenges and Future Prospects. Ministry of Transportation of Indonesia.

Smith, E. (2019). Endpoint Locking in Logistics Operations. Journal of Logistics Management, 12(1), 56-68.

Smith, E. (2020). Geographical Positioning and Economic Potential of Indonesia. Journal of International Business Studies, 25(2), 150-165.