



## Evaluating the Impact of Maritime Regulations: Balikpapan Port's Readiness in Supporting the Nusantara Capital Project

*Luqman Sariful Hidayat, Mas Roro Lilik Ekowanti, Dewi Casmiwati*

*Program Studi Magister Administrasi Publik, Fakultas Ilmu Sosial dan Ilmu Politik, Universitas Hang Tuah Surabaya, Jl. Arif Rahman Hakim No. 150, Keputih, Sukolilo, Surabaya, Jawa Timur 60111, Indonesia*

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### CORRESPONDENCE

Name: Luqman Sariful Hidayat  
E-mail: [elsyahid08@gmail.com](mailto:elsyahid08@gmail.com)

### A B S T R A C T

This study aims to evaluate the impact of Government Regulation Number 31 of 2021 concerning the Administration of the Shipping Sector in supporting the Nusantara Capital City, using Balikpapan Port as a case study. The research employs a descriptive method with a qualitative approach. Data were collected through interviews, observations, and documentation, and analyzed using the Miles, Huberman, and Saldana model, encompassing four stages: data collection, data condensation, data analysis, and conclusion drawing. The findings reveal that while the program has not been fully implemented, improvements in port administration, capabilities, roles, and maritime environmental protection have been achieved. Over the past five years (2018–2022), vessel visits increased by an average of 24.3% annually (units) and 21.8% (gross tonnage). Foreign cargo services rose by 12.15% annually for exports and 16.41% for imports, contributing to an average economic growth of 1.71% per year in Balikpapan City (2019–2023). Additionally, maritime environmental protection has led to the development of new tourist destinations. However, challenges such as ship thefts and limited fishing grounds for local fishermen persist. In the future, the Nusantara Capital City may face waterway congestion, potentially disrupting traffic and increasing the risk of maritime accidents.

### INTRODUCTION

Maritime trade and access to territorial sea areas are essential in determining a country's economic success. Currently, as much as 75% of international trade is via water due to the fuel efficiency of sea transport and the worldwide dependence on water as a means of transportation (Lane & Pretes, 2020). Shipping activities and the international maritime transportation industry contribute to the transportation of around 90% of commodities produced from world trade activities, 80% of which are commodities intended for export and import activities (Saeed et al., 2021; Yudhistira & Sofiyandi, 2018).

Moreover, its geography as an archipelagic country to become the world's maritime axis (Ichtiar et al., 2021). This country has four strategic points through which 40% of the world's trade vessels pass, namely the Malacca Strait, Sunda Strait, Lombok Strait, and Makassar Strait, which can provide great opportunities to facilitate Indonesia to become the center of the world's maritime trade and shipping industry. The Sunda Strait, Lombok Strait, and Makassar Strait are the Indonesian Sea Archipelago Lane (ALKI). Meanwhile, the Malacca Strait is the third busiest strait in the world and is the main route for ± 80 percent of tankers and LNG from the Middle East to East Asian countries, namely China, Japan, and Korea, and to parts of America (Manurung, 2018; Supandi, 2018). In addition, Indonesia has a land area of 1,992,570 km<sup>2</sup> and a sea area of 3,257,483 km<sup>2</sup> with a total area of 5,180,053 km<sup>2</sup>, and a total of 17,504 islands (Geospatial Information Agency and Hydrographic and Oceanographic Center, With a sea area of 63% of the total area of the country and thousands of islands, connectivity and trade between countries, between islands and

between cities are very dependent on sea transportation (Al Syahrin, 2018; Indrawan, 2018; Ismail & Kartika, 2019; Yudilla & Amri, 2020).

Ports are essential infrastructure in the maritime transportation system that acts as the main gateway for international trade (Prastya et al., 2022). The number of ports in Indonesia in 2021 was 3227 ports, with details of 70 General Terminals (managed by the Port Business Entity), 1075 General Ports (managed by the Port Management Unit of the Ministry of Transportation), 1152 Special Terminals, and 930 Terminals for Self-Interest. Among these ports, there are four main ports, namely Belawan, Tanjung Priok, Tanjung Perak, and Makassar (Fitriani & Imtiyaz, 2023; Muammar & Mosyofa, 2024; Saely & Shaleh, 2023).

President of the Republic of Indonesia, Joko Widodo, ratified Law Number 3 of 2022 concerning the National Capital (IKN Law) on February 15, 2022, as the basis for the development of the IKN in East Kalimantan. The location of the new National Capital requires the preparation of transportation infrastructure and a plan for the development of an efficient and effective transportation network to connect the National Capital with provincial capitals and other cities. To support this, the government has stipulated KM Number 48 of 2023 concerning the Balikpapan Port Master Plan, East Kalimantan Province. There are 8 Terminals in Balikpapan that are the prominent supporters of sea transportation for the IKN, namely the existing public ports/terminals, including Semayang Terminal, Kaltim Kariangau Terminal, Penajam Paser Faspel Terminal, and PT Indrapratama Bandar Kariangau; and the General Terminal Concession including PT Lestari Samudera Sakti, PT Penajam Banua Taka and PT Edy Jaya Putera and PT

Indika Logistik and Support Service; and the Mentawir Port Location Plan.

On the other hand, Indonesian waters are still a concern for the maritime world because the number of security incidents in Indonesia is among the highest among other countries in the world. Based on information from the International Chamber of Commerce through one of its divisions, namely the International Maritime Bureau. In the last 9 (nine) years, the number of security incidents, especially piracy in Indonesia. The incident also occurred in the waters/ports of Balikpapan, which will be the primary support for the National Capital, where there have been 3 (three) security incidents in the last 7 (seven) years (Iswardhana, 2021; Suseto et al., 2019).

The new capital city could trigger an increase in maritime security threats. The government, in this case, the Directorate General of Sea Transportation of the Ministry of Transportation, in the planned stages of development of marine transportation infrastructure in the IKN in 2020-2024, issued several policies related to shipping security. These policies include the development of the Vessel Traffic Service (VTS) and the establishment of a traffic separation scheme (TSS) as well as law enforcement at sea through the readiness of patrol ships by the Directorate of the Sea and Coast Guard Unit (KPLP). Port security is a broader part of maritime security. The issue of global maritime security became necessary after the terrorist attacks on September 11, 2001 (9/11), so in 2004, the International Maritime Organization (IMO) adopted a new maritime security regulatory regime into the International Convention for the Safety of Life at Sea (SOLAS) 1974 chapter XI-2 on special measures to improve maritime security, which includes the International Ship and Port Facility Security Code (ISPS) (Arifin et al., 2024; Chapsos & Malcolm, 2017).

The convention applies to international shipping vessels of the passenger ship and cargo ship type with a specific tonnage and port facilities that provide services to international shipping vessels (Ramayanto et al., 2023; Razak & Raqibah, 2023). Indonesia ratified the convention through the Decree of the Minister of Transportation Number KM 33 of 2003 concerning the Enforcement of the 1974 Solas Amendment concerning the Security of Ships and Port Facilities (International et al. Security Code/ISPS Code) in Indonesia. The government then stipulated technical policies for the implementation of ship and port security through the Regulation of the Minister of Transportation Number 134 of 2016 concerning the Management of Ship and Port Facility Security, which then the results of the study of the regulation became the formulation in Chapter VIII of Government Regulation Number 31 of 2021 concerning the Implementation of the Shipping Sector. Chapter VIII regulates the implementation of port security, port facility security, and ship security in Indonesia.

The evaluation of the impact of ship and port security (port facilities) has been analyzed by several researchers in several countries, especially on the economy. Research from a management perspective was conducted by Peter Hellberg in 2009 entitled "Effects of the ISPS Code on ship and port security - a Swedish perspective." The study concluded that the ISPS Code is generally well accepted by the shipping community in Sweden, including shipping companies, port authorities, maritime professionals, and maritime industry organizations. The level of understanding and knowledge of the ISPS Code is more than satisfactory, but there are suggestions for

improvements to perfect the implementation of the new maritime security regulatory regime, including the ISPS Code, and optimize the implementation of maritime security risk management (Hellberg, 2009).

Impact research in business perspective by Daud (2014) in 2014 entitled "The Impacts of International Ship and Port Facility Security (ISPS) Code on Port Users at Port of Tanjung Pelepas." The study found that the implementation of the ISPS Code did not have a significant effect on the performance of Port users, and the study suggested the need for further study of the ISPS Code in the port sector in the future by considering more different perspectives on the diversity of parties involved in Port operations.

Impact in economic perspective as research The Implementation of The ISPS Code in Indonesian Ports and Its Impact on National Income by Ramadhan Hasri Harahap in 2023. The results of the study revealed that the government's policy in implementing the ISPS Code in Indonesian Ports has an impact on increasing National Income in 2021, namely increasing GDP, worker income, and tax revenue. The implementation of the ISPS Code also encourages three other sectors to increase National Income, including Indonesia's GDP, namely the maritime transportation sector, the government administration sector, and the transportation/docking equipment sector (Harahap, 2023).

Furthermore, related to Impact Evaluation, researchers use a model developed by (Dolbear, 1975). The consideration is that impact evaluation requires a gradual analysis of a policy program, formulation of the objectives of the policy, identification, and analysis of steps/activities that are necessary and have been carried out, measurement of the effectiveness of the activities carried out, and finally the discovery and formulation of what impacts or results have been achieved from the program policy, both intended and unintended impacts.

## METHOD

This type of research is descriptive research with a qualitative approach. Data collection techniques are carried out through interviews, observation, and documentation. Data analysis techniques use four stages, namely data collection, data condensation, data analysis, and drawing conclusions (Miles, 2014). The first part is a literature study, namely collecting secondary data by reviewing concepts, regulations, procedures, and related materials such as data from the Central Statistics Agency (BPS). The second part is a field study, namely collecting primary data in the form of qualitative information and facts through observation and systematic recording of research objects and in-depth interviews with related parties (informants) or data sources face-to-face and online. The collected data is then processed so that the data has meaning because it is processed systematically. The processed data is used and selected based on data that is related or relevant to the concept, event, or research object in the form of letters, numbers, symbols, images, and others. Informants are selected from experts who master the research topic and whose daily activities are at the study location. With these considerations, informants are related to the tasks and responsibilities of the occupancy and the accessibility of data and information needed in the research. The list of informants can be seen in the following table:

Table I. List of Research Informants

No	Informants	Occupancy	Institution
1	Fourmansyah, SH., MM., MH	Port Security Officer (PSO) namely Head of Sailing Safety, Guarding and Patrol Division	Balikpapan Class I Harbor Master and Port Authority Office
2	I Komang Budiawan	Deputy Port Security Officer, namely Head of the Guard Section. Patrol and Investigation	Balikpapan Class I Harbor Master and Port Authority Office
3	Budi Hari Mulyadi	Port Facility Security Officer (PFSO)	PT Indika Logistic and Support Service
4	Wahyono Suprpto	Port Facility Security Officer (PFSO)	PT Kaltim Kariangau Terminal
5	Ismael Muhammad Noor	Port Facility Security Officer (PFSO)	Semayang Terminal/Port Balikpapan

Source: Researcher (2024)

RESULTS AND DISCUSSION

*Facilitating the Flow of Safe, Secure and Comfortable Mass Sea Transportation*

The primary impact of the smooth flow of mass sea transportation that is safe, secure and comfortable at Balikpapan Port is the increase in ship visits and the flow of goods/cargo. The increase in port activities has an impact on increasing trade including export-import activities and the economy (Fedorenko et al., 2021).

The increase in performance at the Kaltim Kariangau Terminal includes ship visits of 2.33% CAGR, container flow of 0.17% and export-import flow of 17.23% (Kaltim Kariangau Terminal Data, 2024). Meanwhile, within the scope of Balikpapan Port, the trend of increasing ship visits is an average of 24.3% (units) or 21.8% (GT) ships per year, an increase in domestic cargo loading and unloading of an average of 3.92% per year, and an increase in foreign goods services (exports and imports) of 47.96% or an average of 12.15% per year for loading flow (exports) and an increase of 82.54% or an average of 16.41% per year for unloading flow (imports).

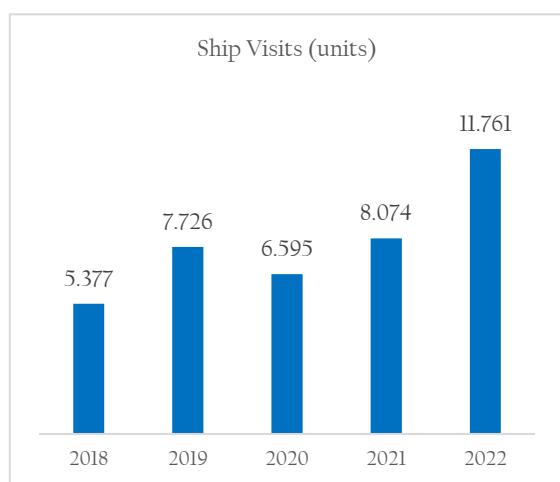


Figure 3. Ship Visits and Import Export Activities at Balikpapan Port 2018-2022.

Source: Marine Transportation Statistics – Central Statistics Agency, 2019-2023

The expected secondary impact is that foreign ships feel comfortable when they are carrying out activities in Indonesian ports and believe in Indonesia's security. The positive impact that follows is supporting the smooth running of the IKN program, especially the supply for the logistics needs of IKN development. On the other hand, there is an unexpected secondary impact in the social aspect, namely the increasingly limited activities of fishing communities in port waters. Balikpapan Bay is a port zone and with its development, port and shipping activities will continue to increase, including the presence of the IKN. In the East Kalimantan Regional Regulation Number 2/2021 concerning the Coastal Area and Small Islands Zoning Plan (RZWP3K) of East Kalimantan 2021-2041, there is also no allocation of settlements and fishing space for fishermen in Balikpapan Bay. Smooth transportation has an impact on port performance, and the port economy, and the economic impact of the port is supported by aspects of facilities,

organization, and the environment. A safe and secure environment will be an important element of the port economy and have an economic impact on the port. This is relevant to Ramadhan Hasri Harahap's research which uses Franco (2002), that the port economy is supported by 4 (four) factors, namely organization, facilities, environment, and hinterland; the economic impact of the port is supported by environmental and hinterland factors; and port performance is supported by organizational and facility factors.

*Improving Port Management, Shipping Safety and Security*

The primary impact of increasing port management, especially loading and unloading services, is expanding port performance (Cimpeanu et al., 2017). In the last 5 years, there has been an increase in domestic loading and unloading by an average of 3.92% per year, as well as an increase in foreign goods services (exports and imports) by 47.96% or an average of

12.15% per year for loading flows (exports) and an increase of 82.54% or an average of 16.41% per year for unloading flows

(imports).

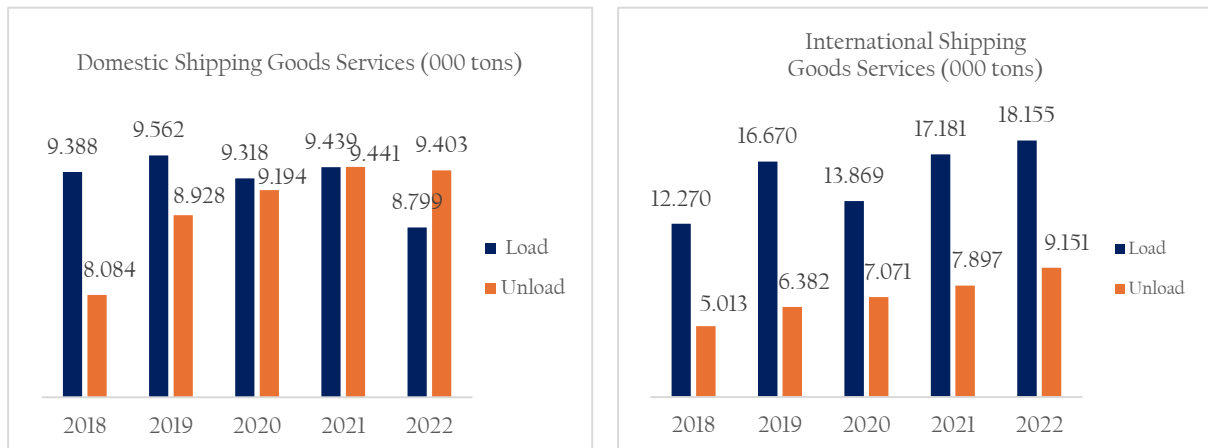


Figure 2. Goods Services at Balikpapan Port 2018-2022

Source: Marine Transportation Statistics – Central Statistics Agency, 2019-2023 (processed by Researchers).

The expected secondary impact of increasing port management is the comfort of foreign ships operating in Indonesia and trust in Indonesia's security. The positive impact that follows the increase in port management is the need for more workers (HR) from the surrounding community so that the regional economy increases. Increasing port management will improve port performance, support sea trade (exports and imports), and have an impact on the port economy. This is relevant to Ramadhan Hasri Harahap's research, which uses Franco (2002), which states that port performance will affect sea trade (exports and imports) and have an impact on the port economy. This impact will be reciprocal with macroeconomics, such as economic growth.

**Improving Port Capabilities and Roles and Shipping Safety and Security**

The impact of increasing port capability and role is that Balikpapan Port has reliable operational capability and role, and there have never been any complaints from service users related to port activity services at the port and port facilities. The impact of increasing port and economic performance is the analysis of the effect of growing port management that has been described previously (Sunitiyoso et al., 2022).

**Realizing Professional Human Resources**

The impact of realizing professional human resources is the achievement of Human Resources professionalism as evidenced by the indicator of the success of the goal that the port or port facilities have never received complaints/complaints related to port service activities, safety and security (Mulang, 2021). Human resources are part of the organization. Human resource professionalism will affect organizational performance. The port organization will affect the Port economy and Port performance. This is relevant to the research of Ramadhan Hasri Harahap, who uses the theory (Francou et al., 2007) that the organization influences the port economy and port performance, as well as the impact of the port economy.

**Fulfilling the Protection of the Maritime Environment from Pollution from Transportation Activities in Waters and Ports and Shipping Safety and Security**

The impact of maritime environmental protection is the creation of a healthy and safe port environment suitable for operation and does not interfere with port activities. The description of the increase in port activities is the increase in the flow of ship visits, the increase in domestic cargo unloading, and the increase in foreign goods services (exports and imports), as reviewed in the previous chapter. This impact is followed by a positive effect on the social and economic aspects of the community in the form of an increase in the workforce from the surrounding community in port activities so that there is an increase in the economy. The economic growth of Balikpapan City is strengthened by data from the Balikpapan City Central Statistics Agency, which has continued to increase over the past 4 years, there has been economic growth from 2019 to 2023 of - 5.47%, 5.25%, 0.38%, and 1.55%, or an average growth of 1.71% per year.

Table 4. Economic Growth of Balikpapan City 2020-2023

	Year				
	2019	2020	2021	2022	2023
Economic Growth (%)	4.78	-0.69	4.56	4.94	6.49

Source: Central Statistics Agency of Balikpapan City, 2020-2023 (processed by researchers).

In addition, the tourism sector will be impacted by the increase in the number of new tourist destinations in the Balikpapan Port area. The East Kalimantan Provincial Tourism Office stated that there are superior Tourist Attractions (DTW) in Balikpapan City, including Manggar Segara Sari Beach, Lamaru Beach, Teritip Crocodile Farm, Colorful Village of Seribu Bay, Graha Indah Mangrove Center, Kariangau Mangrove Ecotourism, and Sungai Wain Protected Forest. Tourist destinations located in Balikpapan Bay and the Balikpapan Port Environmental Interest Area include Colorful Village of Seribu Graha Indah Mangrove Center (opened in 2018) and Kariangau Mangrove Ecotourism. The port economy and the economic

impact of the port are supported by aspects of facilities, organization, and environment. A safe, secure, and protected environment will be the leading supporter of the port economy and will have an economic impact on the port. This is relevant to Ramadhan Hasri Harahap's research using Franco (2002), that the port economy is supported by environmental factors. In a broader context, the port economy will affect port performance and reciprocate on the macro economy. The realization of economic growth is due to port performance, sea trade activities (exports and imports), and the impact of the port economy.

## CONCLUSION

The implementation of Government Regulation Number 31 of 2021 concerning the Implementation of the Shipping Sector has shown a positive impact in increasing transportation efficiency, port management, and maritime environmental protection. This increase is reflected in the increasing volume of ship visits and foreign trade, contributing to the economic growth of Balikpapan City. In addition, maritime environmental conservation efforts have encouraged the development of new tourist destinations, which add cultural and financial value to the region. However, security issues such as theft incidents and limited fishing areas for local fishermen highlight the need for more focused interventions. The increasing density of water traffic around the Indonesian Capital City also poses a risk to shipping safety. To address these challenges, strengthening maritime security and safety protocols is a priority. Recommendations include the preparation of technical guidelines for port security, conducting risk assessments, and implementing a traffic separation scheme in the Makassar Strait. In addition, collaboration between port authorities and local governments is essential to develop sustainable solutions for fishermen, such as expanding fishing areas to more potential areas and modernizing fishing technology. These steps aim to optimize the benefits of the regulation while reducing its negative impacts, ensuring the sustainable development of Balikpapan Port and supporting the Indonesian capital city.

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