

Analysis of the National Logistics Ecosystem Program in Increasing the Performance Investment Climate, Competitiveness of the National Economy and Logistics Performance Index

Abigail Nathania Simanjuntak^a, Ichsan Agung Nugraha Ami Putra^a, Johar Samosir^a, Novembriani Irenita^a

^aFaculty of Management and Business, Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia

Corresponding author: ichsanagung12@gmail.com

Abstract: Indonesia is one of the countries with the highest logistics costs in ASEAN. In recent years, logistics performance has shown no improvement. The Directorate General of Customs and Excise runs a program called the National Logistic Ecosystem (NLE) which is directly supervised by the Ministry of Finance. This is an effort from the government to improve national logistics performance, increase investment, and improve the competitiveness of the national economy. The purpose of this research is to analyze the implementation and impact of the NLE program. This study employs a qualitative method with a descriptive approach. It analyzes the impact of the National Logistic Ecosystem (NLE) program on investment climate performance, national economic competitiveness, and the Logistics Performance Index (LPI) in Indonesia. Utilizing a theoretical framework that includes the Van Meter and Van Horn theory, this research investigates how the NLE is designed, planned, and implemented. Furthermore, the study also considers the roles of various actors and organizations in NLE implementation, as well as the impact of organizational changes within the national logistics ecosystem. The results of the study provide profound insights into the role of NLE in optimizing the national logistics system, with a focus on improving the investment climate, enhancing national economic competitiveness, and elevating the LPI.

Keywords: *national logistics ecosystem, logistics performance index, competitiveness of the national economy, performance investment climate*

1. Introduction

In Indonesia, there are numerous challenges in the field of logistics, such as issues related to the shipment of goods and services, uneven infrastructure development across regions, bureaucratic complexities in the logistics process, warehousing and storage problems, and limited technological advancements in data and information processing. In 2019, the logistics costs in Indonesia reached 23.5% of the national GDP, while in advanced countries, logistics costs do not exceed 10% of their GDP. This disparity has drawn the government's attention to the need for changes and adjustments to the national logistics costs. To support national connectivity, which involves improving infrastructure, regulations, and information technology, appropriate policies and collaboration with other ministries are required.

The Logistics Performance Index (LPI) serves as an interactive comparative tool that provides an overall assessment of a country's logistics performance. It aims to offer insights into the challenges and opportunities that a country may face in its logistics performance. To enhance national logistics performance, the World Bank can assist a country in identifying the right policies through the LPI. The World Bank considers six crucial components that determine the LPI: 1) Customs, which pertains to customs efficiency and restrictions; 2) Infrastructures, addressing the quality of trade and transportation-related infrastructure; 3) International Shipments, focusing on competitive international shipment pricing arrangements; 4) Service

Quality, encompassing logistics service competence and quality; 5) Tracking and Tracing, evaluating the ability to track and trace shipments; and 6) Timeliness, which assesses the frequency of shipments reaching recipients within scheduled or expected delivery times (Chairuddin, 2015). In 2023, Indonesia's LPI dropped by 17 ranks. In 2018, Indonesia was ranked 46th, but in 2023, it fell to the 63rd position. This is significant as the LPI not only reflects a country's logistics performance but also influences investors' considerations when expanding their businesses in Indonesia. Therefore, various efforts are required to improve the LPI, alongside enhancing Indonesia's overall logistics performance.

Investment climate is defined as the "policy, institutional, and behavioral environment, both actual and expected, that affects the outcomes and risks associated with investment" (Stern 2002) in (Desai, 2008). Three factors influence the investment climate: 1) Macroeconomic fundamentals, including macroeconomic stability, economic openness, competitive markets, and social and political stability; 2) Governance and institutions, comprising transparency and efficiency in regulation, taxation, and legal systems; a strong and well-functioning financial sector; labor market flexibility; and skilled labor force; and 3) Infrastructure, covering transportation (roads and ports), telecommunications, as well as power and water supply.

The national economy refers to the overall economic system and performance of a country, encompassing all economic activities, including the production, consumption, trade, and distribution of goods and services within the nation. A strong and healthy national economy is characterized by factors such as high employment rates, stable prices, robust GDP growth, favorable trade balances, and an overall improvement in the standard of living for its citizens. Enhancing national economic competitiveness is an ongoing process that requires cooperation between the government, businesses, and civil society.

To enhance national economic competitiveness, the government, businesses, and individuals can take various steps, including: 1) Infrastructure Development: Investing in infrastructure such as transportation, communication, and energy systems to enhance business efficiency and attract foreign investment. 2) Fostering Entrepreneurship: Creating an environment supportive of entrepreneurship by streamlining regulations, reducing bureaucracy, and providing access to capital for startups. 3) Trade Liberalization: Opening up international trade to boost exports and imports, which can stimulate economic growth. Trade agreements can also create favorable conditions for domestic businesses. 4) Investment in Technology: Embracing and investing in new technologies to improve productivity and competitiveness across different industries.

To streamline logistics costs, the government initiated efforts, including the restructuring of the logistics sector, through the establishment of the National Logistics Ecosystem (NLE). The use of technology in logistics is very important and it improves the needs of consumers to be fast, safe and accurate delivery. In addition, Indonesia's logistics costs, which are still inferior to neighboring countries, also encourage Indonesian logistics to move to digital platforms (Setiawan, 2019 in (Primadana et al., n.d.)).

NLE is a digital logistics service platform that facilitates collaboration among ministries, relevant companies, and logistics stakeholders, ensuring the smooth flow of both export and import goods and domestic cargo movements, whether between regions on the same island or between different islands.

In this research, we focus primarily on the implementation of the National Logistics Ecosystem (NLE) within the Directorate General of Customs and Excise, one of the level-1 units under the Ministry of Finance of the Republic of Indonesia. This implementation is seen as a driver of the national economy, aiming to support a conducive business environment with the goal of improving the logistics system's performance in Indonesia.

We hope that this research can provide an overview of the NLE program's implementation in enhancing the investment climate, increasing national economic competitiveness, and improving Indonesia's logistics performance index. We anticipate that the results of this study can offer valuable insights to the government regarding the challenges faced by stakeholders in import and export processes, allowing the government to take steps to enhance the system and reinforce regulations in alignment with the NLE program.

Therefore, the objectives of this research are: (1) to analyze the influence of NLE on enhancing investment climate performance; (2) to analyze the influence of NLE on increasing national economic competitiveness; (3) to analyze the influence of NLE on improving the Logistics Performance Index (LPI).

2. Literature Review

Policy Implementation

The policy implementation model developed by van Meter and van Horn (1975: 145) (Anggraini, 2016) includes six variables that form a linkage between policies, namely:

1. Policy standards and objectives.
2. Resources
3. Communication between organization
4. Characteristics of the implementing organization
5. Social, economic, and political environment
6. The attitude of the implementers

Customs

Customs is everything related to the supervision of the traffic of goods entering or leaving the customs area as well as the collection of import and export duties. (Undang-undang RI, 2006)

Logistics

According to Bowersox, logistics is the process of strategically managing the movement and storage of goods, spare parts, and finished goods from suppliers, between company facilities to its customers. (Mauleny et al., 2020)

Investment Climate

According to Stern (2002), the investment climate is defined as “the policy, institutional, and behavioral environment, both present and expected, that influences the returns and risks associated with investment”. (Desai, 2008)

Competitiveness

Competitiveness according to Michael Porter (1990) is productivity defined as the output produced by labor. In general, competitiveness is the ability of a company, region, country, or between regions to increase income by utilizing productive and sustainable labor and other resources to face competition by maximizing the potential of its competitive products. (Putra & Maulana, 2019)

Logistic Performance Index

“The Logistic Performance Index (LPI) foris an interactive benchmarking tool created to help countries identify the challenges and opportunities they face in their performance on trade logistics and what they can do to improve their performance.” (Arvis et al., 2023)

In the World Bank's Jakarta paper, from the seminar of "Strengthening Human Resources (HR) National Logistics Facing ASEAN Free Market 2013" in STMT Trisakti (2012), Logistics Performance Index is: Survey of logistics professionals working in multinational freight-forwarders and major expresscarrier companies (Chairuddin, 2015).

3. Research Method

The research method used in the study titled "Analysis of the National Logistics Ecosystem (NLE) Program in Enhancing Investment Climate, Improving National Economic Competitiveness, and Enhancing the Logistics Performance Index (LPI)" is a qualitative descriptive method. This method aims to gain a profound understanding of the implementation of NLE and its impact on investment climate, national economic competitiveness, and the Logistics Performance Index (LPI).

This research employs a qualitative descriptive approach, which focuses on obtaining an in-depth understanding of issues related to the implementation of NLE and its effects. This approach will enable researchers to delve into the complexities of the program and the associated phenomena. Data will be obtained through a review of literature from several credible sources related to the research topic, such as journal articles and official government websites. Data will also be collected from official documents such as regulations, policies, annual reports, and publications related to NLE. Data will be gathered through the search for relevant documents and literature. The data will be interpreted to gain a profound understanding of the implementation of NLE and its impact on investment climate, national economic competitiveness, and the LPI. The qualitative descriptive method will provide an in-depth understanding of how NLE influences the performance of the investment climate, national economic competitiveness, and LPI. The results of this research are expected to offer valuable insights for the development of a more effective national logistics program.

4. Result and Discussion

Indonesia is a region with significant strategic potential and is expected to become a primary market in the global supply chain. This is supported by its wealth of natural resources (SDA), human resources (SDM), and cultural resources. Logistics itself is a strategy for managing the procurement, movement, and storage of raw materials, spare parts, finished products, and related information flows that cross organizations and distribution channels. The goal is to maximize a company's profits, both in the present and the future, through cost-effective order fulfillment (Christopher, 2011). In achieving a nationally integrated logistics system, as outlined in Presidential Decree No. 26 of 2012 on the National Logistics System Development Plan, this system plays a crucial role in coordinating progress in the economic sector and between regions to achieve economic growth. There are several logistics problems in Indonesia, including:

1. Ineffective and inefficient management in many ports, airports, warehouses, and stations.
2. Uneven infrastructure development across regions.
3. Bureaucratic complexities in the logistics process.
4. Limited technological advancements in data and information processing.
5. Ineffective intermodal transportation and connection between ports and transportation infrastructure.

Additionally, some problems are found in the implementation of technology and information in the national logistics system, such as:

1. Information systems are not connected between (K/I) at the port and service providers (trucks).
2. The logistics platform from upstream to downstream has not yet been provided to monitor the status of document processing and the existence of goods in real-time.

To address these issues, the government issued Presidential Instruction Number 5 of 2020 on the Formation of the National Logistics Ecosystem. This policy aims to improve the

performance of the national logistics system, as reflected in the logistics performance index, restore the investment climate, and enhance Indonesia's economic competitiveness.

The National Logistics Ecosystem (NLE) is a platform that facilitates collaboration in the information system. It simplifies and synchronizes the flow of information between the government and the private sector. It records import or export activities and trade or product distribution activities at local ports. This system is achieved through data exchange, process simplification, and the elimination of redundancies (Anjelya et al., 2021). Supported by an information technology system that covers the entire logistics process, it connects and integrates existing logistics systems. The "NLE program focuses on cooperation between government agencies and the private sector through three main strategies. The diagram below illustrates how these three strategies are related in the NLE scheme. The first strategy is to facilitate end-to-end logistics for imports. The second strategy is to facilitate end-to-end logistics for exports, while the third strategy is to facilitate the movement of domestic goods." (USAID & Kementerian Koordinator Bidang Perekonomian RI, 2018). (Arimbhi et al., 2021a)



Figure 1. Growth Rate of Exports and Imports

Source : Central Agency of Statistics, 2023

Before the existence of the National Logistics Ecosystem (NLE) issued by the Ministry of Finance in Indonesia, the import and export processes were considered quite complex and convoluted. The customs clearance process without an NLE system takes three days and a maximum of 14 days (Widuri, 2014 in (Anjelya et al., 2021). With the NLE, the government hopes to create a system that is much simpler, practical, and effective than before. With the presence of the National Logistics Ecosystem (NLE), it can comprehensively connect the logistics process from upstream (arrival of ships) to downstream (warehouses/factories), both for export and import processes. This integration process is achieved by linking the output of one system as the input for another system, without eliminating the existing authorities, business processes, and service systems. NLE collaboration allows for the implementation of a single submission for licensing services, export or import documents, and transport documents (manifests). This single submission enables relevant parties, such as shipping agents, to input data once, and that data is then distributed to each relevant ministry or institution. It allows the implementation of a single billing for government revenue, including tax payments, customs duties, and Non-Tax State Revenue (PNBP). It also allows for the implementation of a single payment channel for other payments by collaborating with banks. Moreover, it facilitates single risk management among ministries and institutions, as one ministry or institution can share client profiles with others. NLE is not just a tool to monitor the value propositions in each law but can also be used to control compliance in the implementation of these laws. NLE can promote service standardization and other technical standards such as standardization.

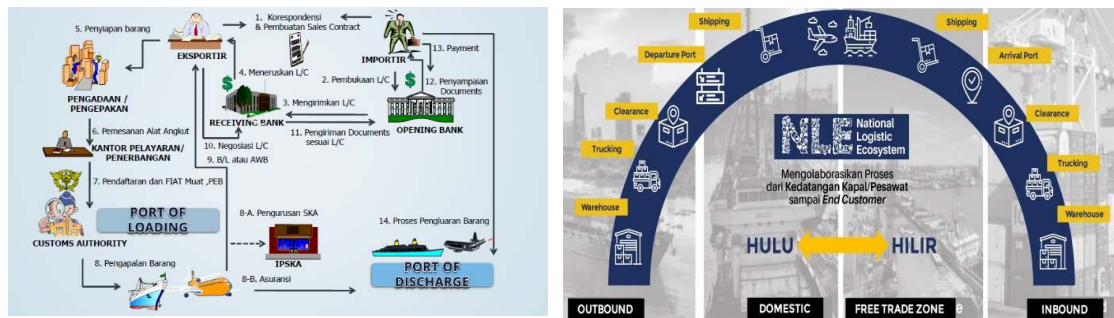


Figure 2. Flow of NLE

Source : nle.kemenkeu.go.id

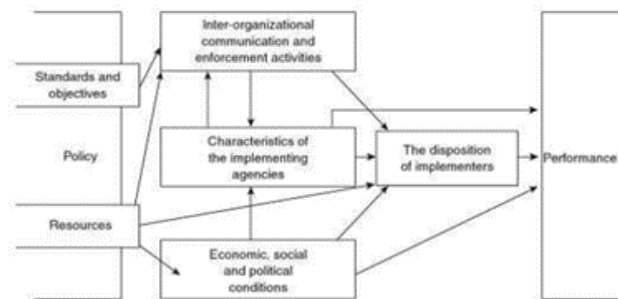
The cost, feasibility standards (truck, forklift), and professional certifications (drivers, forklift operators) are aspects of a highly collaborative ecosystem that greatly facilitates the business processes of importers, exporters, and other logistics stakeholders. Information on the NLE can be accessed through nle.kemenkeu.go.id. The government has also issued several regulations to support the implementation of the NLE, including Minister of Finance Regulation (PMK) No. 97/PMK.04/2020.

The data from the above diagram indicates a decrease in export value in 2019 and 2020. The global economic downturn in 2019 had a negative impact on international trade due to trade tensions between major countries and a decline in business confidence. Given the global economic weakness, this is undoubtedly one of the reasons for the declining growth rate of exports and imports in Indonesia. "The Global Manufacturing PMI compiled by IHS-Market and JPMorgan dipped to 50.3 in April 2019, just above the threshold value of 50, indicating expansion. This suggests that economic growth will remain weak into the second quarter of 2019." (World Trade Organization, 2019). The COVID-19 pandemic, which began at the end of 2019, also had a significant impact on global trade in 2020 and beyond, including disruptions in the supply chain, reduced demand for goods and services, and changes in consumer behavior. This, of course, also affected exports and imports in Indonesia. "In 2020, trade in services declined more and has been recovering at a slower pace than goods trade. Not surprisingly, trade in travel and tourism services slumped dramatically, but trade in digitally delivered services, such as telecommunication and information technology services, boomed" (Arriola et al., 2022).

The significant changes in export values in 2021 are one of the forms of government business process simplification efforts through the Single Submission (SSm) which avoids document repetition and duplication, creates integration and harmonization of logistics service policies, and enhances better monitoring of commodity traffic. "Various platform collaborations have been connected to the NLE, including trucking platforms, with two platforms already connected and nine platforms in the development stage." (Boy & jpnn.com, 2021). The NLE played a role in the increase in export value in 2021 because with the NLE, the export process becomes more efficient.

The initial step taken in this research is to discuss and analyze the implementation of the National Logistics Ecosystem (NLE) Program in improving the investment climate, national economic competitiveness, and Logistics Performance Index. This research utilizes the policy implementation theory according to van Meter and van Horn (1975: 145), which has a framework as follows:

Figure 3. The implementation model of van Meter and van Horn (1975: 145)



Source : Implementasi Pelayanan Publik: Teori dan Praktik

a. Policy standard and objective

The concept of "Policy standard and objective", emphasized by the Van Meter and Van Horn theory, views public policy as a series of stages involving several crucial processes in the journey from conception to implementation. In the context of implementing the National Logistics Ecosystem (NLE) Program, the planning stage is a crucial initial step. This involves the development of a clear vision and goals for the NLE, as well as the identification of national logistics issues that need to be addressed. Planning also includes determining the necessary resources, such as infrastructure, human resources, and financial support. Good planning forms a strong foundation for the next stage of policy formulation.

The policy formulation stage involves the development of detailed policy documents outlining the implementation strategies for the NLE. This includes selecting the most suitable policy instruments, conducting policy impact analysis, and consulting with various stakeholders involved in the national logistics ecosystem. During this stage, it is also important to consider how the NLE will interact with existing regulations and other policies that may affect its implementation. Overall, understanding policy as a process provides a robust framework for analyzing how the NLE program is designed, planned, and ultimately executed to enhance investment climate, national economic competitiveness, and the Logistics Performance Index (LPI).

Table 1. NLE Initiatives, Objectives, and Main Steps

NLE Main point	Initiatives	Objectives	Main Steps
Government Service	a. SSm - Customs and Quarantine	Simplification of government service business processes in the technology-based logistics field to eliminate repetition and duplication.	a. Mapping of inefficient business processes due to duplication and repetition
	b. SSm - Transportation		b. Developing and defining new business process designs
	c. Integrated Risk Management		
	d. Domestic Manifest		

Logistics Platform	Logistics Platform Collaboration:	Improving service transparency and efficiency of logistics processes between actors in the public and private sectors	Building a collaboration platform for service users for import, export and domestic logistics
	a. Trucking b. Shipping c. Harbor d. Warehousing		
Payment Service	Facilitating government revenue payment transactions and facilitating payments between business entities related to the logistics process.	Improving logistics process efficiency with facilities for accessing payment services through online payment platforms	Building a platform that collaborates various online payment platforms.
	a. Main Port Setup b. Container Depot Placement c. Establishment of the Inland Consolidation Center d. Container Railroad Provider	Improving the ease and efficiency of the logistics process inside and outside the port	Driving the realization of efficient port spatial planning and supporting facilities b. Driving the construction of an inland consolidation center c. Driving train and container line synchronization
Layout			

Sumber : <https://peraturan.bpk.go.id/Home/Details/138972/inpres-no-5-tahun-2020>

b. Resources and Ancentive

This theory acknowledges that policy is not only the product of formal documents but also the interaction among various stakeholders contributing to the implementation process. In the context of the National Logistics Ecosystem (NLE), the roles of various actors and organizations are highly prominent. The stakeholders in the Directorate General of Customs and Excise include:

- Directorate of Customs and Excise Information
- Directorate of Revenue and Strategic Planning
- Technical Directorate of Customs and Excise
- Inspectorate of Customs and Excise Services and Revenue

Human resources involved in the development of the NLE system have been trained to be competent in NLE system development. The prepared human resources are provided in the following quantities:

Table 2. NLE Development HR

No.	Role	Total
1	Project Manajer	1
2	Business Analyst	2
3	System Analyst	3
4	Programmer	6
5	IT Infrastructure	2
6	Tester	2

7	Technical Writer	1
---	------------------	---

Total	17
-------	----

Source : beacukai.go.id

The funding for the implementation of the National Logistics Ecosystem (NLE) for the period 2020-2024 is allocated from the State Budget of ministries/agencies, Regional Revenue and Expenditure Budget, and/or other legitimate and non-binding financing sources in accordance with the provisions of laws and regulations.

The government, as a key player in NLE implementation, plays a crucial role in policy formulation, regulation, and overseeing program implementation. It creates an environment conducive to the growth of a healthy national logistics ecosystem. Additionally, the logistics industry and private companies also play essential roles. They are responsible for implementing NLE on the ground, including logistical infrastructure operations, route planning, and providing logistical services. Collaboration between the government and the private sector will play a central role in the success of NLE. Furthermore, relevant institutions such as chambers of commerce, logistics associations, and regulatory bodies also play a role in ensuring that these policies are implemented in line with their original objectives. They act as mediators, coordinating various parties and providing valuable input to enhance and optimize NLE implementation.

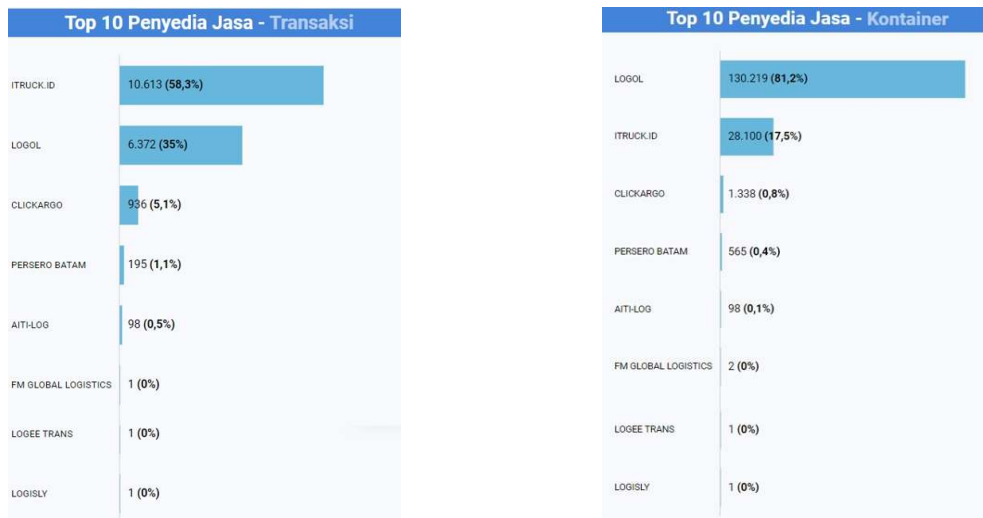
Understanding the roles of various actors and organizations in the context of NLE allows us to identify factors influencing the implementation of these policies. It also helps us evaluate how collaboration and coordination among different stakeholders can impact the success of NLE in improving the investment climate, national economic competitiveness, and the Logistics Performance Index (LPI).

c. Quality of Inter-Organizational Relationships

In the concept of "inter-agency communication" in the implementation of the National Logistics Ecosystem (NLE), coordination in policy formulation and NLE implementation is managed by the Directorate General of Customs and Excise through scheduled dialogues with all teams involved in policy formulation, including relevant Ministries/Agencies (M/A). Communication must be conveyed and received clearly and unambiguously.

Other examples include communication with various parties such as other Ministries/Agencies, private entities, and collaboration with academics through webinars, group discussions (FGD), and other activities. On the official NLE website, as of November 15, 2023, a total of 18,217 truck transactions and 130,324 container truck transactions were recorded through the NLE platform, with the following details:

Figure 4. Top 10 Trucking



Sumber : <https://nle.kemenkeu.go.id/page/statistics>

It can be observed that the highest total transactions were achieved by iTruck.ID, with a total of 10,613 transactions and 28,100 containers, followed by Logol with a total of 6,372 transactions and 130,219 containers. Other service providers also follow, and it is hoped that the National Logistics Ecosystem (NLE) platform can be utilized by even more parties.

d. Characteristics of the Implementation

Stakeholders have roles and responsibilities designed by the Directorate General of Customs and Excise, which are:

- The Directorate of Revenue and Strategic Planning, Technical Directorate, and Directorate of Customs and Excise Information are responsible for the Strategic Planning of the NLE Project to prepare the draft project charter until the finalization of the project charter.
- The Technical Directorate and Directorate of Customs and Excise Information are responsible for formulating a comprehensive logistics business process design (from shipment to retail), starting from the preparation of the NLE Design, initial mapping of business process simplification, stakeholder meetings to the finalization of comprehensive logistics business process design.
- The Technical Directorate and Directorate of Revenue and Strategic Planning are responsible for drafting technical policies (to reduce time and costs) in the form of procedural policies for the flow of goods and policies for the flow of money.
- The Directorate of Customs and Excise Information and Technical Directorate are responsible as Developers of the NLE IT System in both the short and long term.
- The Directorate of Revenue and Strategic Planning, Technical Directorate, and Directorate of Customs and Excise Information are responsible for the implementation of pilot testing.
- The Directorate of Revenue and Strategic Planning is responsible for the NLE in the form of monitoring, evaluation, and follow-up.

e. Economic, Social and Political Environment

Currently, the implementation of the National Logistics Ecosystem (NLE) is underway at 14 ports across Indonesia, namely Belawan, Pekanbaru, Palembang, Lampung, Merak,

Batam, Tanjung Priok, Pontianak, Tanjung Emas, Balikpapan, Tanjung Perak, Samarinda, Juanda Airport, Kendari, and Makassar. The funding for the implementation of the National Logistics Ecosystem for the period 2020-2024 is allocated from the State Budget of ministries/agencies, Regional Revenue and Expenditure Budget, and/or other legitimate and non-binding financing sources in accordance with the provisions of laws and regulations. Political support is evident from Presidential Instruction No. 5 of 2020 regarding the implementation of the national logistics ecosystem.

f. Disposition or Response

In its implementation, the National Logistics Ecosystem has short-term (2020-2021), medium-term (2022-2023), and long-term (2024) agendas.

Table 3. NLE Plans

Short-term 2020 - 2021	Medium-term 2022-2023	Long-term 2024
1. Development and piloting of government service systems: a. SSm Customs - Quarantine b. SSm Transportation (International and Domestic) c. SSm Licensing d. Risk management 2. Development and piloting of private logistics service platform collaboration 3. Development of payment platform system 1. Ease of access and transparency of logistics service processes 2. Improving the quality of logistics services 3. Accuracy of estimated service time and logistics costs	1. Implementation and expansion of the government service system: a. SSm Customs - Quarantine b. SSm Transportation (International and Domestic) c. SSm Licensing d. Risk management 2. Implementation and expansion of logistics service platform collaboration 3. One-billing system and one-gate one-system at the main port	1. Main port layout setup: container terminal zoning 2. Synchronization of railway lines with containers at the port 1. Free flow goods 2. Reduction of national logistics costs

Source : beacukai.go.id

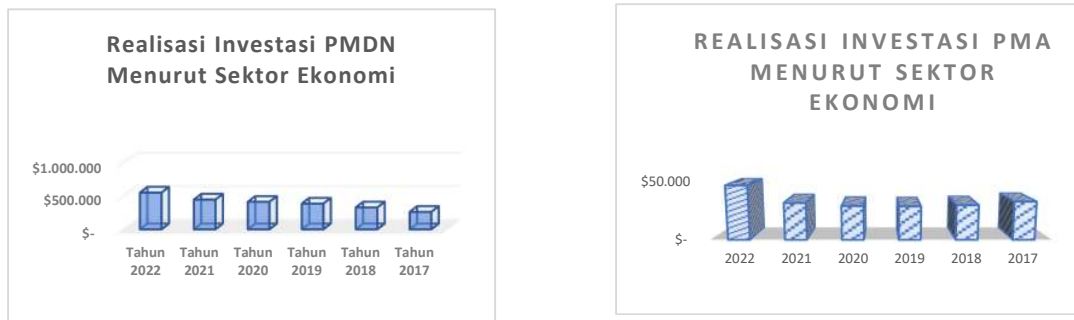
From the formulated series of agendas, numerous achievements have been realized, including:

- a. The implementation of a single-door system/facility in the export-import permit process.
- b. The establishment of a system/facility for permit processes through the single-door system.
- c. Efficiency in the inspection process through DJBC-Quarantine.
- d. The implementation of an online system/facility in the redemption process of Delivery Orders (DO).
- e. The establishment of a system/facility to minimize documents in the process of transferring/entering goods to and from temporary storage places.
- f. The establishment of a system/facility to order trucks through the available truck platforms.
- g. The implementation of a warehouse reservation system/facility through the available platform.
- h. The establishment of a system/facility for users to book slots for domestic and international ships through NLE.
- i. The establishment of a system/facility to communicate independently with container depots.
- j. Facilitating all types of payments, from logistics services, taxation to Non-Tax State

- Revenue (PNBP), through NLE
- k. The formation of a port system and layout, as well as national logistics infrastructure.
 - l. The implementation of services such as SSm Carrier, SSm Licensing, SSm Customs Quarantine (SSm QC), online Delivery Order (DO), online SP2, Trucking, Warehouse, Container Depot, Vessel, Single Truck Identification Data (STID), Single Billing, Gate System, and Integrated Licensing Information System (SIPT) has been carried out at the Tanjung Emas Port in Semarang.
 - m. Currently, there are 1,095 registered truck fleets in the STID at Tanjung Emas Port, and 159 truck fleets are still awaiting approval.
 - n. The operation of the Autogate System service at Tanjung Emas Port.
 - o. The arrangement of facilities for the Physical Inspection of imported goods (TPFT) in the implementation of SSm quarantine, where there is a separation of inspection locations between independent inspections (conducted by DJBC) and joint inspections.

The Implementation of NLE in Improving Investment Climate Performance

Figure 5. Investment Realization



Source : Central Agency of Statistics, 2023

The amount of investment in Foreign Direct Investment (FDI) and Domestic Direct Investment (DDI) during the period 2017-2022 has experienced a significant increase. Of the total investment (DDI and FDI) in 2022, the subsector of basic metals, non-metal machinery and equipment, and metal goods contributed the most, reaching IDR 171.2 trillion.

The implementation of the National Logistics Ecosystem (NLE) increases logistics process efficiency, reduces logistics costs, creates a favorable investment climate, and encourages investment in the logistics sector. All of these factors can contribute to improving a nation's economic competitiveness. The relationship between NLE and the enhancement of national economic competitiveness is that the implementation of NLE enhances logistics process efficiency, lowers logistics costs, and boosts the competitiveness of domestic goods and services. The introduction of NLE is expected to create a supportive environment in logistics, such as ports and airports, by ensuring smooth logistics operations and digitizing service systems. This can create a favorable investment climate and stimulate the economic recovery of the country. The introduction of NLE also aims to create a favorable investment climate and promote investment in the logistics sector. Therefore, the implementation of NLE can contribute to enhancing the competitiveness of the national economy. (Arimbhi et al., 2021b)

The Implementation of NLE in Enhancing National Economic Competitiveness

The National Logistics Ecosystem plays a vital role in enhancing a country's economic competitiveness. A well-functioning logistics system can improve the movement of goods, reduce costs, enhance efficiency, and create a conducive environment for economic growth. Here are the reasons why the government believes that NLE can enhance economic competitiveness in Indonesia:

- a. **Cost Reduction:** Effective logistics can reduce transportation and supply costs, directly impacting the prices of goods and services.
- b. **Improved Supply Chain Management:** A fast and efficient logistics process ensures that products move smoothly from manufacturers to consumers.
- c. **Enhancing Trade Efficiency:** A well-integrated and efficient logistics system can simplify import and export processes, reduce trade barriers, and promote international trade.
- d. **Infrastructure Development:** Investment in infrastructure such as ports, highways, railroads, and airports can rapidly increase capacity.
- e. **Technology Integration:** Technology integration, such as tracking and monitoring systems, data analytics, and automation, can enhance the efficiency of applications.
- f. **Market Access:** A robust logistics system can provide good access to domestic and international markets, helping companies reach a large number of customers.
- g. **SME Growth:** Small and medium-sized enterprises (SMEs) often have the resources to carry out large-scale projects.
- h. **Attracting Foreign Investment:** Countries with a well-functioning logistics system are more attractive to foreign investors due to their expectations of low labor costs, easy access to goods, and good connectivity.
- i. **Environmental Support:** A well-designed engineering system can reduce carbon emissions by improving routes, modes of transportation, and vehicle performance.
- j. **Disaster Recovery:** A strong logistics system is essential for disaster relief efforts. An effective system can ensure fast delivery of aid and supplies during emergencies, reducing the economic impact of a disaster.

Figure 6. Rate of Economic Growth



Source : Central Agency of Statistics, 2023

From the above diagram, it is evident that Indonesia's economy experienced a decline of 2.07% in 2020 due to the COVID-19 pandemic. The economic growth in Indonesia for the year 2022 is estimated to reach 5.31%, higher than the pre-COVID-19 average growth rate of 5%.

The Implementation of NLE in Enhancing the Logistics Performance Index

Figure 7. LPI Score 2016-2023



Source : World Bank, 2023

From 2018 to 2023, Indonesia has experienced a fairly significant decrease in the Logistics Performance Index (LPI) by the World Bank. Indonesia's ranking dropped from 46th to 61st, reflecting challenges in logistics performance. Factors contributing to this decline include the improved performance of neighboring countries in Asia, such as the Philippines, Malaysia, India, and Singapore. Categories like shipment tracking and on-time delivery have experienced significant ranking declines, indicating weaknesses in infrastructure and logistics management in Indonesia.

Despite the decline in Indonesia's Logistics Performance Index (LPI) from 2018 to 2023, the country's logistics performance continues to improve. According to the report from the Central Statistics Agency (BPS), Indonesia's export value for the first quarter of 2023 reached USD 67.2 billion, marking a 1.6% increase compared to the first quarter of the previous year. Improved logistics performance can also be observed through other indicators, such as the implementation of the National Logistics Ecosystem (NLE) by ports and investments in the logistics sector. The Indonesian government has taken strategic steps to enhance logistics performance by establishing permanent institutions and reviewing regulations. "In general, users of logistics services perceive the NLE program as efficient, especially in services like SSm Licensing, SSm QC, Delivery Order, Online Container Release Letter, Autogate, and Trucking. Time and cost efficiency, based on Prospera survey reports, range from 24.6% to 49.5%..." (Prastowo, 2023). "In the period from 2018 to 2023, Indonesia has experienced a rather significant decrease in the World Bank's Logistics Performance Index (LPI). Indonesia's ranking dropped from 46th to 61st, reflecting challenges in logistics performance. Factors contributing to this decline include the improved performance of neighboring countries in Asia, such as the Philippines, Malaysia, India, and Singapore. Categories like shipment tracking and on-time delivery have experienced significant ranking declines, indicating weaknesses in infrastructure and logistics management in Indonesia.

Despite the decline in Indonesia's Logistics Performance Index (LPI) from 2018 to 2023, the country's logistics performance continues to improve. According to the report from the Central Statistics Agency (BPS), Indonesia's export value for the first quarter of 2023 reached USD 67.2 billion, marking a 1.6% increase compared to the first quarter of the previous year. Improved logistics performance can also be observed through other indicators, such as the implementation of the National Logistics Ecosystem (NLE) by ports and investments in the

logistics sector. The Indonesian government has taken strategic steps to enhance logistics performance by establishing permanent institutions and reviewing regulations. "In general, users of logistics services perceive the NLE program as efficient, especially in services like SSm Licensing, SSm QC, Delivery Order, Online Container Release Letter, Autogate, and Trucking. Time and cost efficiency, based on Prospera survey reports, range from 24.6% to 49.5%."

Ways NLE Can Help Improve the Logistics Performance Index (LPI):

- a. Simplification of logistics processes: The implementation of NLE involves streamlining logistics processes through the digitization of service systems. This can reduce the time and cost of logistics processes and improve the LPI.
- b. Collaboration among logistics service providers: NLE facilitates collaboration among logistics service providers, which can improve the efficiency of logistics processes and reduce logistics costs. This can also enhance the LPI.
- c. Facilitation of payment processes: NLE facilitates payment processes between logistics service providers, which can reduce the time and cost required for logistics processes. This can improve the LPI.
- d. Improvement of logistics infrastructure: NLE involves the enhancement of logistics infrastructure, such as ports and airports, which can improve the efficiency of logistics processes and reduce logistics costs. This can also enhance the LPI.

5. Conclusion

The National Logistic Ecosystem (NLE) is a significant initiative in efforts to improve investment climate performance, national economic competitiveness, and the Logistics Performance Index (LPI) in Indonesia. The program incorporates the concept of "policy as a process," in which the planning, formulation, and execution of logistics policies follow a careful series of stages. The government, logistics industry, and various related institutions play vital roles in the implementation of NLE, and their collaboration is crucial to the program's success. In the context of organizational change, NLE has the potential to transform how organizations in the logistics ecosystem operate, influence work culture, and restructure internal processes. Moreover, NLE can help address the inhibiting factors that have led to declines in LPI in the past.

However, it should be noted that efforts to improve LPI through NLE are a highly important step, given the significance of logistics performance in a country's economic growth. In the long term, the implementation of NLE is expected to help Indonesia enhance its economic competitiveness, reduce logistics costs, improve supply chain efficiency, and create an investment climate supportive of economic growth. By taking these measures, Indonesia can fulfill its potential as a major player in the global supply chain. Furthermore, NLE can contribute to enhancing Indonesia's competitiveness in international markets. In facing global challenges and the impact of the pandemic, these efforts will help keep Indonesia's economy resilient and prepared for an uncertain future.

6. Implications

The results of this research can provide a deeper insight into the implementation of NLE in Indonesia. Recommendations can be made to the government and relevant stakeholders to further improve this program and ensure that its impact on investment climate, national economic competitiveness, and LPI becomes more positive. This research can serve as a basis for further in-depth and extensive research on the impact of NLE. Future research may involve

more case studies or comparative analyses with other countries to broaden the understanding of NLE effects. The findings of this research can also be used to strengthen the implementation of NLE by identifying areas that need improvement and addressing the limitations identified.

7. Limitations

This research has limitations in terms of time and data. There may be limitations in data access and limited research time to analyze the impact of the National Logistic Ecosystem (NLE) over a longer period. This could affect the extent to which the research covers all aspects of NLE implementation. Descriptive qualitative research tends to involve a large amount of information interpreted by the researcher. This can introduce subjectivity in the analysis and interpretation of results. Although various approaches like triangulation can be used to mitigate subjectivity, there is still potential for bias in interpretation. This research focuses only on the implementation of NLE in Indonesia. This may make the findings less universal, and generalizing to other contexts difficult.

REFERENCES

- Anggraini, F. (2016). Teori Implementasi Kebijakan. *A Companion to Cogn. Sci.*, 15–47.
- Anjelya, V., Firnandika, S., & ... (2021). the Correlation Between Inaportnet and Smartport on Nle Implementation. *Advances in ...*, 5778, 544–555.
<https://proceedings.itltrisakti.ac.id/index.php/ATLR/article/view/415%0Ahttps://proceedings.itltrisakti.ac.id/index.php/ATLR/article/download/415/450>
- Arimbhi, P., Agustina, D., & Rahmi, N. (2021a). Implementation of the National Logistic Ecosystem Program in Increasing the Performance of the National Logistics System, Improving the Investment Climate, and Increasing the Competitiveness of the National Economy. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 4(4), 7568–7584.
- Arimbhi, P., Agustina, D., & Rahmi, N. (2021b). The Effectiveness of the National Logistic Ecosystem Program in Improving the Performance of the National Logistics System, Recovering the Investment Climate, and Increasing the Competitiveness of the National Economy. *Jurnal Logistik Indonesia*, 5(2), 153–165.
<https://doi.org/10.31334/logistik.v5i2.1886>
- Arriola, C., Cadestin, C., Kowalski, P., & Van Tongeren, F. (2022). International trade during the COVID-19 pandemic: Big shifts and uncertainty. *OECD Policy Responses to Coronavirus (COVID-19)*, March, 1–14.
- Arvis, J.-F., Ojala, L., Shepherd, B., Ulybina, D., & Wiederer, C. (2023). Connecting to Compete 2023: Trade Logistics in an Uncertain Global Economy - The Logistics Performance Index and Its Indicators. *Connecting to Compete 2023: Trade Logistics in an Uncertain Global Economy - The Logistics Performance Index and Its Indicators*.
<https://doi.org/10.1596/39760>
- Boy, & jpnn.com. (2021). *Bea Cukai Paparkan Capaian NLE Hingga Semester I-2021*.
- Chairuddin, I. (2015). An Overview Of Indonesian Logistic Performance And The SISLOGNAS 2012. *Jurnal Manajemen Bisnis Transportasi Dan Logistik*, Vol.1 No 3 Mei 2015, 1(3), 353–367.
- Desai, R. M. (2008). Improving the investment climate. *Can Russia Compete?: Enhancing Productivity and Innovation in a Globalizing World*, 91–112.
- Mauleny, A. T., Alhusain, A. S., Harefa, M., Permana, S. H., Adhiem, M. A., Sayekti, N. W., & Lisnawati. (2020). *Memajukan Logistik Indonesia yang Berdaya Saing* (C. M. Firdausy (ed.)). Yayasan Pustaka Obor Indonesia.

- Prastowo, Y. (2023). *Siaran Pers: Kementerian Keuangan Targetkan Efisiensi NLE Mencapai 60-80 Persen*.
- Primadana, A., Yusuf, G., Purba, O. R., & Pratiwi, E. (n.d.). *THE EFFECTIVENESS OF THE IMPLEMENTATION AND TRANSFORMATION OF THE DIGITAL PLATFORM NATIONAL LOGISTICS ECOSYSTEM ON*.
- Putra, G. S. A., & Maulana, N. (2019). Strategi Meningkatkan Daya Saing Industri Kreatif Indonesia: Studi Kasus Pengembangan Klaster Industri Alas Kaki Kecamatan Tamansari, Bogor. *ULTIMA Management*, 10(2), 97–109.
<https://doi.org/10.31937/manajemen.v10i2.825>
- Undang-undang RI. (2006). *UNDANG-UNDANG REPUBLIK INDONESIA NOMOR 17 TAHUN 2006 TENTANG PERUBAHAN ATAS UNDANG-UNDANG NOMOR 10 TAHUN 1995 TENTANG KEPABEANAN* (p. Pasal 1).
- USAID, & Kementerian Koordinator Bidang Perekonomian RI. (2018). *SISTEM LOGISTIK NASIONAL (SISLOGNAS): USAID Economic Growth Support Activity (EGSA)*.
- World Trade Organization. (2019). World Trade Statistical Review 2019. Chapter II: I. Highlights of world trade. *World Trade Statistical Review*, 179.