

Original Article

# Toward Modelling of Enhancing Export Process in Developing Country, Palembang, Indonesia

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**Abstract** - Export process in developing countries often takes longer time than in developed countries. Lack of service quality and long dwelling time are the main problems. In the case of Boom Baru Port in Palembang, Indonesia, there has been a long line in limited Berth and Yard, especially during the loading and unloading of goods. The goal of this study is to formulate a model for enhancing the export process at Boom Baru Port. This research aims to analyze the need for a trade information system to reduce trade preparation time, with a case study at Boom Baru Port. The collection of information regarding the preparation of input variables, such as the Origin and Destination of Trade Commodities and Calculation of Annual Daily Activities, can be accessed by various types of stakeholders in their respective departments and jobs. Once the framework is connected, Port execution changes can save time and improve the environment. The novelty of this research paper is the Export Trade Information System model, which is designed to facilitate the exchange of information between Exporters and various stakeholders in the export trading process in port, such as government agencies, businesses, and consumers.

**Keywords** - Enhancing process, Export trade information system, Export process, Model, Developing countries.

## 1. Introduction

The lack of service quality and long dwelling time are the main problems of the export process in developing countries, including Indonesia. Boom Baru Port is a sea Port that is located further to the riverside in Musi River, Palembang, Indonesia. Limited Berth and high yard occupancy ratio in Boom Baru Port resulted in many parking trucks on the surrounding streets before and during the loading and unloading of goods. This can cause environmental damage to roads and drainage. Therefore, quick service in export processing time is badly needed.[1]

Export Process in Ports is an important part of international trade, where goods or services are sold and shipped from one country to another. This process should involve a number of steps and procedures to ensure that the goods or services being exported meet the legal, regulatory and standard requirements of the receiving country. There are some lacks of steps in the export process in developing countries like Indonesia. Export processes have been developed in many countries, and some research has been done on the very advanced findings.[2]

The research on the Executive Information System's impact on Stock Trading within the Jakarta Islamic Index (JII)

was conducted by Karin Sukma D et al. The investigation focused on analyzing the influence of the executive information system.

Sumit et al. conducted a study titled "A Review of Intelligent Transportation Systems in Existing Framework using the Internet of Things." The paper provides a comprehensive look at how Artificial Intelligence and machine learning are applied to develop Intelligent Transportation Systems (ITS) that can tackle challenges associated with transportation.

Harshita Prakash et al. have indicated that vehicular communication is essential for the advancement of intelligent transportation systems. This is due to the necessity for effective data transmission for vital functions, including road accident alerts and traffic congestion management.

Andi Ningrat et al. developed a model for Green Port Performance Criteria within a sustainable Maritime Transport system. This system, encompassing ports and their intermodal land connections, accounts for nearly 80% of worldwide trade. The study revealed that operational management has a substantial and favourable impact on the performance of green ports.



Evyana Diah K et al. conducted a study titled “Review of Port Management Integrated Digitization System: A Pathway to Efficient and Sustainable Port Operations.” The study delves into the Port Management Integrated Digitization System (PMIDS) and its transformative capabilities for port operations.

In the context of global trade, the export process in developing countries often encounters challenges that result in slower execution compared to developed nations. Service quality and extended waiting times at ports are the primary issues affecting efficiency in these regions [3]. Specifically, at Boom Baru Port, limited berth and yard space have led to lengthy queues, particularly during cargo loading and unloading. This situation necessitates urgent solutions to enhance the export process.

This study proposes an innovative model aimed at improving the export process at Boom Baru Port. The model involves the development of a trade information system designed to streamline trade preparation time. The system is expected to facilitate information exchange among exporters and various stakeholders involved in the export trading process, including government agencies, businesses, and consumers. Consequently, the system has the potential not only to enhance efficiency but also to reduce delays at the port, serving as a model for other developing countries facing similar challenges.[4]

Comparing this research with existing studies reveals that previous research has primarily focused on the impact of export processes on economic growth and trade performance in developing countries. However, this study contributes to the existing literature by providing a practical solution through the implementation of a trade information system. The proposed system aims to improve efficiency and reduce delays at the port, offering valuable insights for other developing nations dealing with similar obstacles.

Therefore, it is important for producers or companies wishing to engage in exporting to understand the requirements and procedures that apply to the origin country and export destination country.

### **1.1. Problem Formulation**

The primary issue at Boom Baru Port is the extended export process time compared to developed countries. The lack of service quality and prolonged dwelling time are identified as the core problems. The limited berth and yard space result in long queues during the loading and unloading of goods, leading to inefficiencies in the export process.

This paper aims to enhance the export trading process in developing countries by developing an export trading information system.

## **2. Literature Study**

The constrained space of the Boom Baru Port terminal in Palembang leads to extensive lines prior to and throughout the loading process of export goods onto vessels. Consequently, this has resulted in damage to the roadsides and, in certain areas, to the entire roadway and its drainage system. Berg [5] explains the importance of port authorities developing the hinterland area by attracting certain activities to the inland port. This strategy can expedite and streamline processes while reducing container congestion at the port.

The pre-clearance time for imported goods in Boom Baru Port depends on document preparation, licensing processes and quarantine processes. The prolonged duration of this process is caused by several factors, including the high import volume/demand leading to queues during inspection procedures, the system’s inability to operate 24 hours during inspection, weather conditions, and importers’ readiness [6]. Therefore, it is important to pay serious attention to making document preparation time as shorter as possible.

For global shipping, a fundamental export document is essential. There are eleven primary shipping documents, including the Proforma Invoice, Commercial Invoice, Packing List, Certificate of Origin, Certificate of Free Sale, Shipper’s Letter of Instruction, Inland Bill of Lading, Ocean Bill of Lading, Air Waybill, Dangerous Goods Forms, and Bank Draft [7].

The International Trade Information Systems discussed this topic in 2020 during the Global Forum on Trade Statistics in Geneva from February 2-4, 2011, noting that UNSD, Eurostat, and WTO did not provide the background. Although International Merchandise Trade Statistics (IMTS) adhere to a conceptual framework, they diverge in certain key aspects from the principles and definitions that underpin the national accounts system and the balance of payments system. Recognized as a highly developed and mature statistical domain, IMTS may not necessitate as much focus and investment.

Currently, there is a strong demand for policymakers, business analysts, and economists. Researchers are seeking more detailed and unified data on international trade to comprehend its impact on growth, economic development, globalization, employment, and the economic interconnections between countries in terms of production, consumption, and investment. The statistical information supplied by international trade statisticians should meet these requirements. The Trading Information System, known in Bahasa Indonesia as Sistem Informasi Perdagangan (SIP), is a system or platform for gathering, processing, managing, and disseminating trade-related data. It aims to streamline the flow of information among various participants in the trade ecosystem, including government entities, businesses, and consumers.

SIP plays a crucial role in enhancing transparency, efficiency, and effectiveness in trade-related activities. It allows users to access and share data on market trends, prices, regulations, and other relevant information. This helps businesses make informed decisions, improves market competitiveness, and enables governments to monitor and regulate trade activities. The Export Trade Information System in this research is different from the Trade Information System (SIP), which is mentioned in PP no. 5 year 2020.[8] The model of this Export Trade Information System is designed to integrate processes that involve components in the export trading system and to facilitate the exchange of information between Exporters and various stakeholders in the export trading process in port, such as government agencies, businesses, and consumers.

Dyah Titis Kusuma Wardani [9] discovered in her research that the advancement of Information and Communication Technology (ICT) has a notable and beneficial effect on the volume of Indonesia’s exports to ASEAN nations.

Kourounioti et al. [10] and colleagues have formulated a methodological framework that connects diverse factors influencing the Dwell Time at Container Terminals. Often, Terminal Operators prioritize criteria like the container’s weight, dimensions, and type when making stacking decisions to optimize terminal processing times.

On the other hand, Zheng et al. [11] conducted research on the efficiency of container terminals in Korea and China. Their study aimed to evaluate the enhancement of efficiency and management levels by comparing container terminals in these countries. The findings indicated that the major terminals in Korea were as efficient as those in China.

Additionally, Burdzik et al. [12] assessed the effect of processing and handling efficiency on the transportation process. Their research, which was carried out with actual objects and consistent technology and handling equipment, underscored the significance of the loading and unloading processes in the handling of palletized cargo.

It has become apparent that numerous studies have been conducted on the importance of information systems. Among these researchers, Mlimbila [13] explored how utilizing information systems can boost the efficiency of port logistics at the Dar es Salaam port in Tanzania.

The study found that the use of information systems contributes to lowering costs associated with shipping and trucking, enhancing the punctuality of goods and service delivery, increasing the value of trade, and improving the logistics capabilities of organizations.

### 3. Materials and Methods

This research is carried out as the following Figure 1.

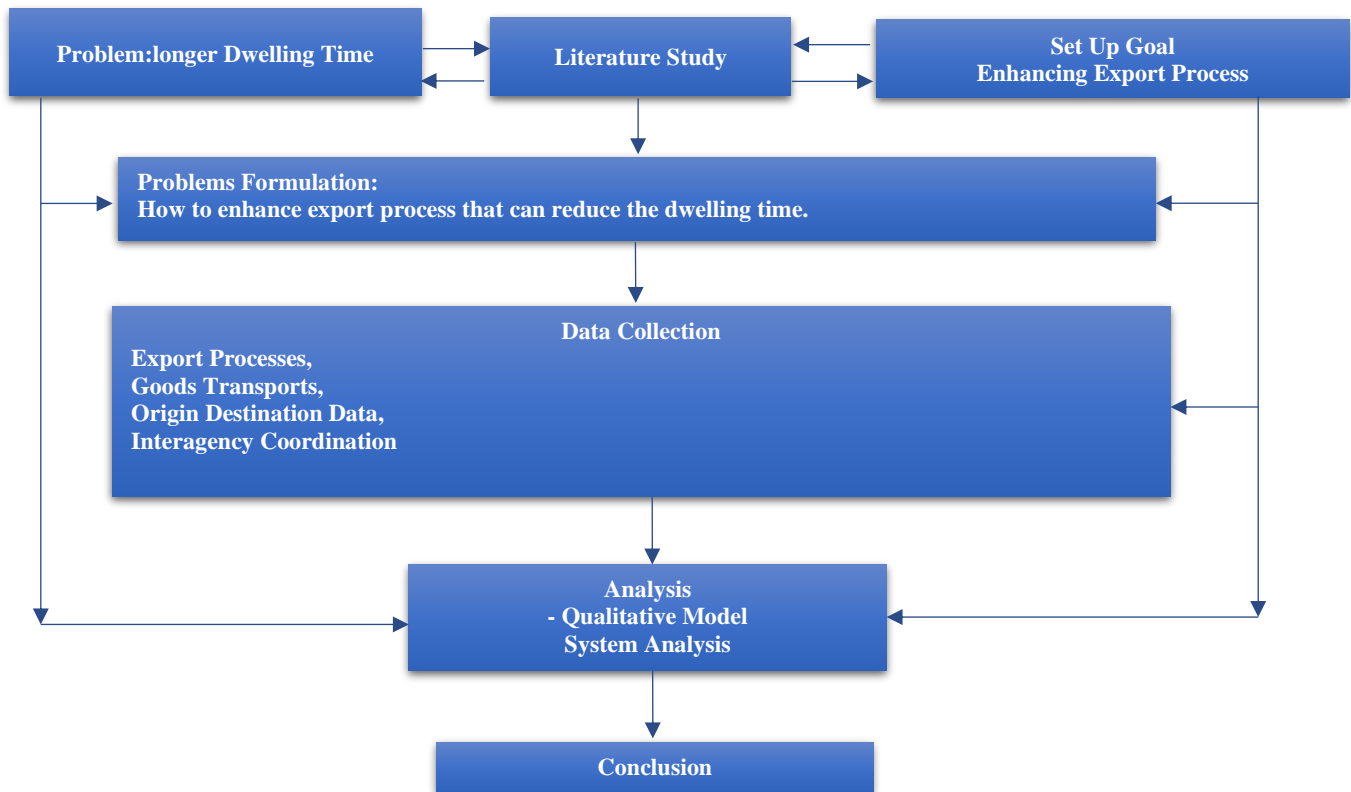


Fig. 1 Flow chart of research



Fig. 2 Exported goods from Indonesia

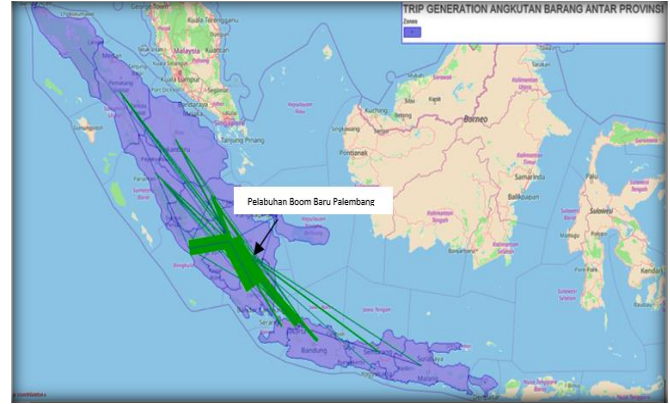


Fig. 3 Desired line of commodities through Boom Baru Port

## 4. Results and Discussion

### 4.1. Common Challenges in the Export Process at Ports

The export process at ports in Indonesia involves various challenges that can affect the smoothness, efficiency and safety of international trade activities. Information Technology Readiness is inevitable. The use of integrated information and communication technology in the export process is still not evenly distributed in all ports. Systems that have not been integrated can slow down the flow of information and documentation. Lack of Interagency Coordination can happen in many cases. The export process involves various agencies, such as customs, quarantine, and other related parties. Lack of coordination between agencies can lead to backlogs and delays in the process. To overcome these challenges, joint efforts are needed between the government, industry players and various related stakeholders. Investments in port infrastructure, simplification of administrative procedures, increased bureaucratic efficiency, and the adoption of sophisticated information technology can help increase the smoothness and efficiency of the export process at ports in Indonesia.

### 4.2. Data Collection

By means of the VISUM Program, Origin Destination data are processed into the Origin Destination Matrix, and the desired lines diagram can be obtained from running the VISUM. The collection of information regarding the preparation of input variables such as Origin and Destination of Trade Commodities Matrix is shown in Table 1 (in the appendix), and the desired lines diagram is shown in Figure 2 below. As can be seen in Figure 2, Boom Baru Port has many customers from all over the world. The highest demand came from America, Japan and China.

Before goods were carried out by shipping lines to many countries abroad, they were collected by trucks to Boom Baru Port from many hinterlands in Sumatra and Jawa. The Origin and Destination of the Trade Commodities Matrix in Indonesia is shown in Table 2 (in appendix). The desired line of commodities through Boom Baru Port is shown in the following Figure 3.

Desired Line of Commodities at Boom Baru Port: The Boom Baru Port in Palembang, Indonesia, plays a crucial role in supporting the distribution of superior commodities and increasing income in South Sumatra. Some of the key commodities passing through this port include coal, palm oil, and rubber. However, the location of Boom Baru Port, approximately 108 km from the mouth of the Musi River, which poses challenges due to limited width and depth. Sedimentation along the river also necessitates high maintenance costs. To address these issues, the government plans to develop a new port, the New Palembang Port, in Tanjung Carat, Banyuasin Regency. This new port, strategically located at the estuary, aims to improve connectivity, reduce logistic costs, and enhance trade both domestically and internationally. The construction of the Trans Sumatra toll road connecting Palembang City to other major cities in Sumatra is expected to boost traffic at the New Palembang Port further. The project scope includes designing and building port facilities for container, liquid, and dry bulk services, as well as providing port handling equipment and other related services. The New Palembang Port represents a sustainable solution to the challenges faced by the existing Boom Baru Port, ensuring efficient logistics and economic growth in the region.

### 4.3. Potential Solutions or Best Practices for Overcoming these Challenges

Overcoming the challenges of the export process in Indonesian ports requires a multi-faceted approach involving various stakeholders, policy changes, and technological advancements. Interagency Coordination is needed in terms of establishing effective communication and coordination mechanisms among different agencies involved in the export process, such as customs, quarantine, and transportation authorities.

Continuous Improvement: Establishing a culture of continuous improvement within the port authorities and related agencies can lead to ongoing enhancements in processes, services, and infrastructure. Ultimately, addressing the challenges of the export process in Indonesian ports

requires a combination of policy reforms, investments in infrastructure and technology, capacity building, and collaborative efforts among various stakeholders to create a more efficient and competitive export ecosystem.

#### 4.4. Preparation of Export Trading Information System

Technology has played a significant role in transforming port operations around the world, leading to increased efficiency, accuracy, and overall productivity. In terms of Boom Baru ports, technology adoption has the potential to address various challenges and improve the export process. The model of the export trading information system will enhance Port Management in terms of the following:

- Web-based platforms that allow port authorities, shipping companies, and exporters to manage various aspects of port operations online.
- This includes booking slots for coordinating customs procedures.
- Ports can overcome many of the challenges they face and create a more streamlined, efficient, and competitive export process.
- The stakeholders can collaborate and invest in the right technology solutions that align with the specific needs and goals of the ports and the broader trade ecosystem.

The planned Export Trading Information System will be connected and exchange data with 8 institutions, namely the Export-Import permit agency, Forwarder, Customs, Shipping Agent, Terminal Operator, Exporter, Importer and Customs Service Management Company (PPJK). The role of each entity can be described as the following.

##### 4.4.1. Terminal Operators

The role of port terminal operators is important. They must work in coordination with port authorities, shipping lines, logistics providers, and other stakeholders to achieve the smooth functioning of ports and terminals. The roles, among other things, are:

- Cargo Handling
- Storage and Warehousing
- Safety and Security
- Maintenance and Repair
- Vessel Services, assisting in the mooring and unmooring of ships, providing tugs or pilot services.
- Intermodal Connectivity
- Customs and Documentation
- Technology Integration
- Environmental Compliance
- Customer Service terminal operators interact with shipping lines, cargo owners, and other stakeholders to ensure their needs are met.
- Labor Management
- Emergency Response
- Financial Management

##### 4.4.2. Custom Service Management Company (PPJK)

Its duties include inspecting the guarantees on items that are going to be imported or exported and handling customs duties.

##### 4.4.3. Customs

Customs safeguard the public from contraband and international trade while also promoting trade and industry. Additionally, customs safeguard Indonesia from the entry of commodities subject to limitations and restrictions (Iartas) and promote economic progress. Customs has developed an online system that allows for better service delivery to the general population, resulting in more effective and efficient service.

##### 4.4.4. Importer

The role of Importers is:

- Sourcing Products: Importers identify and source products or goods from foreign suppliers or manufacturers that are in demand in their domestic market. This involves researching potential suppliers, negotiating terms, and selecting the best sources for the required products.
- Supplier Negotiations: Importers negotiate with foreign suppliers on various aspects, including price, quality, quantity, delivery schedules, payment terms, and other trade conditions. Effective negotiation skills are crucial to securing favourable deals.
- Logistics and Transportation: Importers are responsible for organizing the logistics and transportation of goods from the foreign supplier to the domestic market. This involves arranging shipping, selecting transportation methods (e.g., air, sea, land), and managing the movement of goods.
- Customs and Import Regulations: Importers must be well-versed in the customs and import regulations of their country. They are responsible for ensuring that imported goods comply with all legal requirements, including tariffs, duties, taxes, and import permits.
- Documentation and Compliance: Importers handle a significant amount of documentation, including invoices, bills of lading, certificates of origin, and customs declarations. They must ensure that all documents are accurate and comply with legal and regulatory requirements.
- Customs Clearance: Importers are responsible for the customs clearance process. This involves submitting required documents, paying customs duties and taxes, and complying with customs inspections and procedures.
- Quality Control: Ensuring the quality and compliance of imported goods with local standards and regulations is an important part of the importer's role. They may conduct quality inspections or work with third-party quality control agencies.
- Inventory Management: Importers need to manage their inventory effectively to avoid overstocking or

understocking. They must strike a balance to meet market demand while minimizing carrying costs.

- **Distribution and Sales:** Once the goods are cleared through customs, importers are often responsible for distributing and selling the imported products to wholesalers, retailers, or consumers. This may involve setting prices, marketing, and sales strategies.
- **Risk Management:** Importers are exposed to various risks, including currency exchange rate fluctuations, geopolitical instability, and supply chain disruptions. Managing and mitigating these risks is crucial to ensure the success of import operations.
- **Financial Management:** Importers must manage finances efficiently, including arranging payments to foreign suppliers, handling currency conversions, and managing cash flow.
- **Market Research and Trends:** Staying informed about market trends, consumer preferences, and the competition.
- **Landscape is essential for importers to make informed decisions about product selection and market entry strategies.**
- **Legal and Compliance Responsibilities:** Importers need to comply with trade regulations and industry-specific laws, such as those related to safety standards, intellectual property, and trade sanctions.

#### 4.4.5. Exporter

The role of the Exporter:

- Identify products or services with market demand in foreign countries.
- Conduct market research to identify potential overseas markets. This involves evaluating market size, competition, cultural factors, and legal and regulatory considerations.
- Navigate international trade regulations and compliance requirements. They ensure their products meet foreign quality standards labelling requirements, and adhere to trade sanctions and embargoes.
- Establish relationships with foreign buyers, including wholesalers, retailers, distributors, or end consumers. They may attend trade shows and conferences or use online platforms to find international customers.
- Determine the pricing strategy for their products and negotiate terms with foreign buyers, taking into account factors like currency exchange rates, shipping costs, and local market conditions.
- Handle various documents, including commercial invoices, bills of lading, certificates of origin, and export licenses. Accurate and complete documentation is crucial for customs clearance and compliance.
- Manage the logistics of transporting goods to foreign markets. This involves selecting shipping methods (e.g., sea, air, land), arranging transportation, and tracking shipments.

- Ensure that goods comply with export regulations, prepare export declarations, and file the necessary paperwork for customs clearance.
- May implement quality control measures to ensure that products meet international standards and customer expectations. This may include product inspections or certifications.
- Handle payments from foreign buyers, including selecting appropriate payment methods (e.g., letter of credit, open account) and managing currency exchange risk. They may also access trade finance options to facilitate transactions.
- Some exporters may prioritize sustainability and ethical practices in their supply chain, which can enhance their brand and appeal to environmentally conscious consumers.

#### 4.4.6. Forwarder

A forwarder acts as a go-between for the sender and receiver of goods, aiding both exporters and importers. According to the Minister of Finance's regulations, forwarding services represent the owner's interests in overseeing the various activities necessary for the transport and delivery of goods, whether by land, sea, or air.

In order to help exporters and importers, the forwarder serves as an intermediary between the sender and the recipient of the goods. According to the Finance Minister's regulation, forwarding services activities related to managing all or part of the processes necessary for the delivery and receiving of products by land, sea, or air transportation are with the intention of representing the owner's interests.

#### 4.4.7. Shipping Agency

A shipping agency plays a crucial role in facilitating the movement of ships and cargo in and out of ports and harbours. Shipping agencies act as intermediaries between shipowners, charterers, cargo owners, and port authorities, providing a wide range of services to ensure the smooth and efficient handling of vessels and their cargoes.

#### 4.4.8. Import Export Permit Agency

An import-export permit agency, often associated with government authorities or departments, plays a significant role in regulating and overseeing the import and export of goods in a country. Their responsibilities include enforcing trade laws and policies, issuing permits and licenses, and ensuring compliance with various regulations.

The roles and responsibilities of an import-export permit agency include:

- Regulatory Compliance
- Permit Issuance
- Trade Documentation
- Tariff Classification



- Trade Tariffs and Duties
- Sanctions and Embargoes
- Security and Border Control
- Quality Control and Inspections
- Trade Facilitation
- Trade Promotion
- Risk Assessment
- Licensing and Compliance Audits
- Data Collection and Reporting
- Trade Dispute Resolution

The following Figure 4 shows the Export Trading information system.



\*PPJK: Customs Service Management Company

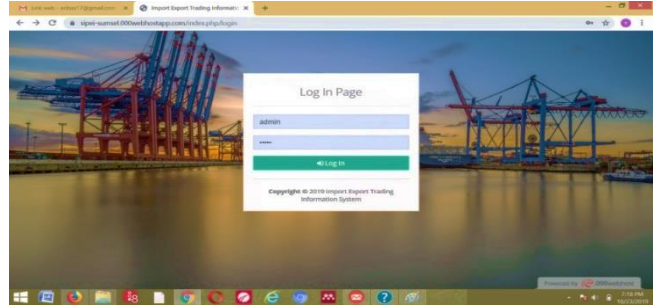
**Fig. 4 Export trading information system**

A further step in making an Export trade information system is preparing a Data Flow Diagram, which is drawn the following Figure 5 as in the appendix. Input data Origin-Destination from Exporters (Customers) are collected in Tables 1 and 2 as in the appendix, and then it is run by the Visum program to have desired lines in Figures 2 and 3.

Based on the Data Flow Diagram in Figure 5 in the appendix, an Export Trading Information System is developed, and it should include:

- (1) Web-based or web-mobile,
- (2) User management
- (3) Users from stakeholders.

After the data flow diagram is designed, the Export Trading Information System is built. The Export Trade Information system as the window is shown in Figure 5.



**Fig. 5 Export Trading Information System (ETIS) Window**

The “Export Trading Information System Window” in Indonesia refers to a system or platform that provides comprehensive data and insights into the country’s export activities. This could include information on export regulations, procedures, commodity prices, market trends, and trade agreements. It serves as a resource for exporters to access real-time data and analytics, helping them make informed decisions and streamline their operations.

While specific details about such a system in Indonesia are not provided in the search results, it’s common for countries to have trade information portals that offer services such as:

- Documentation Assistance: Guidance on the necessary documents for exporting goods.
- Regulatory Information: Updates on changes in export regulations and compliance requirements.
- Market Intelligence: Data on global market trends and demand for various commodities.
- Trade Facilitation: Tools to connect with potential buyers and explore new markets.

Government trade departments or related agencies typically manage these platforms to support the country’s export sector and enhance its global trade competitiveness.

What makes this paper novel is its export trading information system model, which can be applied directly to all users and used for policy implications. These users include the admin, who represents the web’s authority; users who represent the export and import process; users who represent customs; terminal operators, importers, exporters, Customs Service Management Company (PPJK), forwarders, shipping agents, and import-export permit agencies. However, the inconsistent sectors entering the application system—for example, certain ministries failing to submit the necessary data to finish the process represent a study limitation.

The proposed solution is the development of an Export Trade Information System (ETIS) aimed at enhancing the export process at Boom Baru Port. The ETIS model would serve as a platform for information exchange among exporters, government agencies, businesses, and consumers. The system could potentially.

The suggested approach involves creating an Export Trade Information System (ETIS) specifically designed to enhance the export process at Boom Baru Port. The ETIS model would act as a communication platform connecting exporters, government agencies, businesses, and consumers. Its potential benefits include:

#### Reducing Trade Preparation Time

- ETIS would provide real-time data on trade commodity origins and destinations.
- It would also facilitate the calculation of annual daily activities related to trade.

#### Improving Port Execution

- Stakeholders (such as port authorities, shipping companies, and customs officials) would have access to relevant information tailored to their specific roles.
- This streamlined communication would lead to more efficient decision-making and smoother operations within the port.

To specifically address dwelling time, effective strategies include deregulating administrative procedures, enhancing infrastructure, integrating technology, and improving service quality.

The novelty of this research lies in the ETIS model, which could serve as a valuable blueprint for other developing countries facing similar export challenges.

## 5. Conclusion

- 1) The export trading information system model can be applied directly to all users and utilized for policy implications.
- 2) User management in web design includes the terminal operator, importer, exporter, import-export permit agency, shipping agent, forwarder, import-export company, and user admin, who represent the web's authority. Users also represent the export-import process.
- 3) The trading procedure can be carried out and tracked in real-time via the Export Trading Information System.

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**Appendix 1**

**Table 1. Destination zone of export trading commodities from Boom Baru Port**

No	Destination	Number of Ships/year	No	Destination	Number of Ships/year
1	United States	83	20	Japan	79
2	Brazil	12	21	Ecuador	8
3	China	42	22	France	28
4	Argentina	3	23	Canada	28
5	Portugal	1	24	Poland	1
6	Slovenia	1	25	Italia	2
7	Korea	32	26	Romania	4
8	United Kingdom	4	27	Spain	6
9	Netherlands	7	28	Colombia	1
10	Belgium	1	29	Vietnam	4
11	India	25	30	Antwerp	7
12	Yemen	1	31	Australia	2
13	Srilanka	1	32	Turkey	11
14	Thailand	2	33	Belanda	5
15	South Africa	15	34	Latvia	1
16	Mexico	12	35	Serbia	3
17	Finland	10	36	Venezuela	2
18	Malaysia	8	37	Egypt	2
19	Russia	6	38	Peru	6

**Table 2. Origin and destination of trade commodities matrix in Indonesia (Veh/day)**

O/D		Tujuan																ΣA
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Asal	1	0	84	36	2	68	15	6	7	4	22	100	54	62	34	15	0	509
	2	46	0	1	0	5	0	6	1	0	0	0	1	0	0	0	0	60
	3	13	1	2	0	8	0	1	0	0	2	7	3	3	3	2	0	45
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	1	3	3	0	1	1	0	1	0	1	19	8	10	0	1	0	49
	6	6	4	0	1	1	0	3	1	0	2	18	10	3	1	0	0	50
	7	4	4	1	0	0	0	0	0	0	0	5	5	11	0	0	0	30
	8	8	8	2	0	1	2	0	0	0	8	17	12	10	6	6	0	80
	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	10	20	0	4	0	1	1	1	1	0	2	0	0	0	0	0	0	30
	11	38	1	4	0	16	10	4	10	5	0	1	0	0	0	0	0	89
	12	22	0	6	0	16	9	10	16	0	0	0	0	0	0	0	0	79
	13	24	0	2	0	11	0	2	0	0	0	0	0	1	0	0	0	40
	14	4	0	0	0	10	0	0	1	0	0	0	0	0	0	0	0	15
	15	0	0	0	0	3	0	0	6	0	0	0	0	0	0	0	0	9
	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ΣT	187	105	61	3	141	38	33	44	9	37	167	93	100	44	24	0	1086

Appendix 2

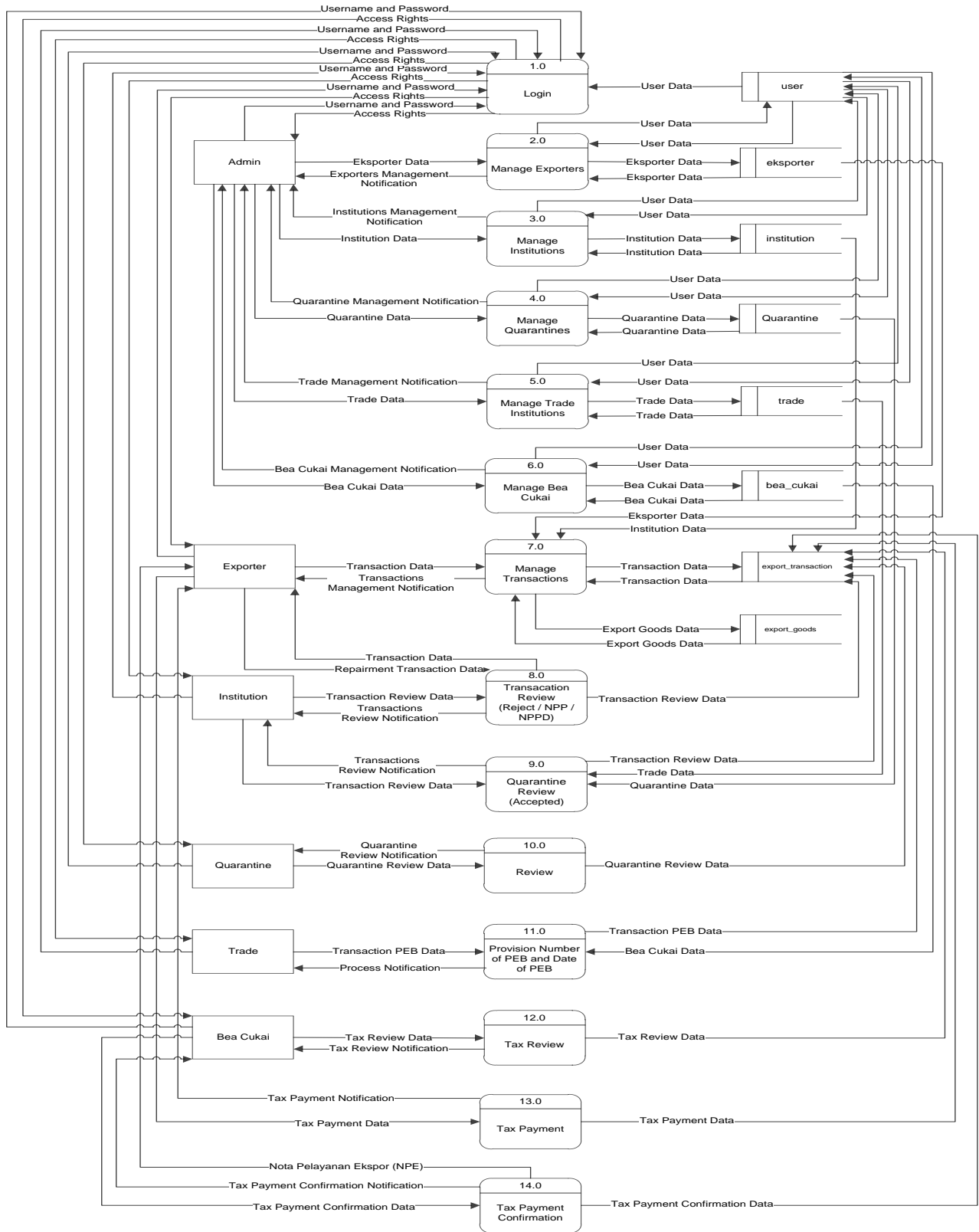


Fig. 5 Data flow diagram of export trade information system