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Optimization of the Content Document Management Process

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ABSTRACT

Cargo document handling is a critical component of ship agency operations, as its accuracy and timeliness influence logistical efficiency and compliance with maritime regulations. This study aims to analyze the obstacles encountered in cargo document management at PT Adhigana Paraduta Mulya, Belitung Branch, and identify strategies to optimize the process. The study employed a descriptive qualitative approach, with data collected through direct observation, interviews, and documentation studies. The data were analyzed descriptively to identify operational challenges and formulate recommendations for improvement. The findings revealed four main obstacles: errors in cargo calculations by surveyors, inaccuracies in entering data into the Bill of Lading (B/L), delays in document processing that resulted in the issuance of Letters of Protest (LOP), and insufficient hardware to support document digitization. These challenges indicate that weaknesses in data accuracy, administrative coordination, processing time, and technological infrastructure can hinder the effectiveness of cargo documentation. This study recommends implementing a digital document management system, improving verification procedures, strengthening coordination among relevant stakeholders, and providing adequate hardware to support document processing. The novelty of this study lies in examining the interconnected administrative, human, and technological challenges in cargo document handling within a specific ship agency context. The findings are expected to provide practical guidance for improving document accuracy, reducing processing delays, and enhancing the efficiency and reliability of ship agency services.

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1. INTRODUCTION

Ports play a strategic role in maritime transportation and international trade by facilitating the movement of goods and connecting shipping activities with logistics networks. The efficiency of port operations depends not only on infrastructure and cargo-handling activities but also on the accuracy, availability, and timely exchange of shipping documents. The United Nations Conference on Trade and Development (UNCTAD, 2024) highlights the importance of port performance and trade facilitation in maintaining the efficiency of maritime transport and international supply chains. Consequently, effective cargo document management is an essential component of maritime logistics because administrative errors and delays can affect cargo handling, vessel schedules, and coordination among stakeholders.

Ship agency companies facilitate vessel operations by representing shipowners or shipping companies in administrative and operational matters at ports. Their responsibilities may include

coordinating vessel arrivals and departures, communicating with port authorities and cargo interests, preparing operational documentation, and ensuring that required information is submitted to the relevant parties. The International Maritime Organization (IMO, 2024a) emphasizes that standardized information exchange is essential for facilitating vessel arrival, stay, and departure procedures. In this context, ship agents have an important role in ensuring that cargo information is accurate, consistent, and available when required.

Cargo documents serve administrative, commercial, and legal purposes in maritime transportation. The Bill of Lading (B/L), for example, is associated with the carriage of goods and may function as evidence of the contract of carriage, a receipt for goods, and a document of title, depending on its form and the applicable legal system. Krebs (2024) discusses the legal challenges associated with the transition from paper-based bills of lading to electronic documents. Sun and He (2024) also explain that electronic bills of lading raise legal questions concerning possession and control because the document exists in intangible form. These studies demonstrate that cargo documentation requires not only accurate data processing but also appropriate controls over document validity, authenticity, and legal recognition.

Other documents support different stages of cargo transportation. A Cargo Manifest records information about cargo carried on board a vessel and is relevant to port and customs administration. A Shipping Instruction (SI) provides shipping details and instructions used in preparing shipping documents. A Notice of Readiness (NOR), in contrast, is a notice that a vessel is ready to load or discharge cargo under the applicable contractual and operational conditions. A Letter of Protest (LOP) may document an objection or dispute concerning an operational event. These documents serve different purposes; therefore, they must be prepared, checked, distributed, and retained according to the requirements applicable to each transaction. The IMO's Facilitation Convention and related guidance identify cargo declarations and other standardized reporting information as part of the documentation required for maritime formalities (IMO, 2022a, 2024b).

Document management involves the systematic creation or receipt, verification, processing, distribution, storage, and retrieval of records. In cargo operations, this process requires consistency between the information supplied by cargo interests, surveyors, ship agents, vessel representatives, and other relevant parties. Errors in cargo quantity, weight, description, or shipment details may create discrepancies between the manifest and the Bill of Lading. Similarly, incomplete documents or late submission can delay verification and the completion of administrative procedures. These risks indicate the importance of data accuracy, document traceability, and clearly assigned responsibilities throughout the documentation process.

Digitalization provides opportunities to improve the speed and reliability of maritime document management. Plomaritou and Jeropoulos (2022) discuss digitalization in chartering activities, particularly the role of electronic bills of lading in bulk and liner shipping markets. Gavalas et al. (2022) examine digital adoption and efficiency in the maritime industry, demonstrating the relevance of

technology to the improvement of maritime business processes. The IMO (2022b) also explains that standardized electronic data exchange supports the transmission and processing of information required for vessel, cargo, and port formalities. These developments suggest that digital document systems can reduce repetitive data entry and facilitate the sharing of information, provided that the systems are implemented appropriately.

International maritime administration has increasingly adopted electronic information exchange. Under the Facilitation Convention, electronic exchange of information became mandatory for relevant ship reporting formalities in 2019, while the Maritime Single Window became mandatory from 1 January 2024 (IMO, 2022c, 2024a). The Maritime Single Window allows information to be submitted through a single digital entry point and distributed to the relevant authorities, reducing the need for repetitive submissions. The IMO's guidelines on harmonized communication and electronic exchange of operational data further support consistency in information exchange between ships and ports (IMO, 2023). Although these international arrangements do not automatically establish the internal procedures of every ship agency company, they illustrate the broader direction of maritime administration toward standardized and digital document processing.

The implementation of digital systems, however, requires more than the availability of software and computer equipment. Data formats must be consistent, information must be protected, and different systems must be capable of exchanging information reliably. The IMO's guidance on authentication, integrity, and confidentiality in maritime information exchange identifies information security as an important consideration in digital maritime services (IMO, 2022d). In addition, the IMO's work on the Maritime Single Window and Port Community Systems highlights the importance of coordination among stakeholders and the interoperability of information systems (IMO, 2024c, 2024d). Therefore, technology adoption should be accompanied by staff training, document verification procedures, access controls, and regular monitoring.

A further consideration is the legal and operational reliability of electronic cargo documents. Krebs (2024) examines how electronic bills of lading interact with transnational and English law, while Sun and He (2024) analyze the legal question of how possession of an electronic bill of lading can be established. Their findings suggest that digitalization must be supported by reliable systems and appropriate legal arrangements. For ship agency companies, this means that electronic document management should preserve the accuracy, integrity, accessibility, and traceability of records while complying with the requirements applicable to each document and transaction.

Operational performance also depends on coordination between organizations. Sunitiyoso et al. (2022) analyze port performance through a systems-thinking approach, showing the importance of understanding the interaction between multiple factors rather than treating each operational issue separately. Wibowo and Wahyuilahi (2025), in their study of stakeholder coordination in maritime logistics at Makassar Port, examine coordination practices in a port environment. These perspectives are relevant to cargo document management because the completion of a document often depends on

information supplied by several parties. Clear communication, timely responses, standardized submission requirements, and defined responsibilities can help reduce inconsistencies and repeated verification.

Regulatory compliance is another essential element of document management. In Indonesia, Minister of Transportation Regulation No. PM 93 of 2013 concerning the organization and operation of sea transportation, as amended, including by Regulation No. PM 23 of 2022, provides a regulatory reference for sea transportation activities. Regulation No. PM 28 of 2022 addresses the procedures for issuing sailing approval and approval for vessel activities at ports. The applicable requirements should be considered alongside relevant customs rules and the requirements for each cargo type. These regulations provide a basis for ensuring that document preparation and submission are consistent with the administrative procedures governing maritime operations (Ministry of Transportation of the Republic of Indonesia, 2022a, 2022b).

At PT Adhigana Paraduta Mulya Belitung Branch, cargo document management is the focus of this study. The research examines the process of managing cargo documents, the obstacles encountered during implementation, and the measures that may improve the efficiency of the process. Potential issues identified in the preliminary research framework include discrepancies in cargo calculations, delays during document verification, and limitations in supporting technological equipment. These issues are treated as matters to be investigated and confirmed through field observations, interviews, and relevant company documents rather than as findings established in advance.

Previous literature has examined maritime digitalization, electronic bills of lading, standardized information exchange, port performance, and stakeholder coordination. However, the practical implications of these developments need to be examined within the specific workflow of a ship agency branch, particularly in relation to the verification and coordination of cargo documents. The effectiveness of document management depends on how information is received, checked, corrected, approved, and distributed among the parties involved. Examining these activities at PT Adhigana Paraduta Mulya Belitung Branch can provide a more detailed understanding of the operational causes of document discrepancies and delays.

Based on this background, this study addresses three research questions: (1) How is cargo document management carried out at PT Adhigana Paraduta Mulya Belitung Branch? (2) What obstacles are encountered in the cargo document management process? and (3) What measures can be implemented to optimize cargo document management? Accordingly, the objectives are to describe the existing document management process, identify the factors that hinder its implementation, and formulate practical recommendations to improve document accuracy, processing time, coordination, and operational efficiency. The findings are expected to provide useful insights for improving cargo document management in ship agency operations.

2. METHODS

This study employed a qualitative descriptive method with a case study approach to examine the management of cargo documents at PT Adhigana Paraduta Mulya Belitung Branch. The case study approach was selected to obtain an in-depth understanding of the document-handling process, the obstacles encountered during its implementation, and the measures undertaken to improve operational efficiency. A qualitative approach was appropriate because the study focused on actual operational practices, interactions among stakeholders, and the experiences of personnel involved in cargo document management rather than on statistical hypothesis testing. The case study design followed the principles of examining a contemporary phenomenon within its real-life context (Yin, 2018).

The main analytical focus was the management of cargo documents associated with ship agency operations, including document preparation, verification, coordination, and processing. Particular attention was given to the factors affecting the accuracy, completeness, and timeliness of document handling, as well as opportunities to optimize the process.

The research was conducted at PT Adhigana Paraduta Mulya Belitung Branch from August 2023 to February 2024. The location was selected because the company provides ship agency services and handles cargo-related documentation in port operations. This setting enabled the researcher to examine document management practices and interactions between ship agency personnel and relevant stakeholders, including port authorities, customs officials, and cargo owners, where applicable.

The research informants consisted of personnel directly involved in cargo document management and relevant external stakeholders familiar with the process. These included operational staff of PT Adhigana Paraduta Mulya Belitung Branch, representatives of relevant port authorities or customs agencies, and cargo owners who used the company's ship agency services, where available.

Informants were selected using purposive sampling based on their responsibilities, experience, and direct involvement in cargo document processing. This technique was appropriate because the study required detailed information from individuals with practical knowledge of the procedures, operational challenges, and potential improvements. The final sample size should reflect the participants actually interviewed and the adequacy and relevance of the information obtained.

The research instruments consisted of an observation checklist, a semi-structured interview guide, and a documentation checklist. The observation checklist was used to record cargo document-handling activities, verification procedures, communication among personnel, and coordination with relevant stakeholders. The interview guide contained open-ended questions concerning document processing procedures, recurring administrative or operational obstacles, coordination practices, and proposed improvements. The documentation checklist was used to identify and review relevant cargo documents, operational records, correspondence, and applicable procedures, subject to authorization.

The principal analytical focus was cargo document management, examined through the following operational indicators:

1. Document completeness and accuracy: The extent to which required cargo documents were available and contained consistent information.
2. Processing timeliness: The sequence and duration of document-handling activities, where supported by observations or recorded timestamps.
3. Coordination and communication: The exchange of information between ship agency personnel and relevant stakeholders.
4. Operational obstacles: Administrative, procedural, technical, or human-resource factors that impeded document processing.
5. Optimization efforts: Measures implemented or proposed to improve document accuracy, processing efficiency, and coordination.

These indicators served as analytical guides rather than standardized quantitative measurement scales. The instruments were aligned with the research objectives. The credibility of the findings was strengthened by comparing information obtained from observations, interviews, and documentary evidence. Any formal validity or reliability tests should be reported only if they were actually conducted.

Data were collected through direct observation, interviews, and documentation studies. First, direct observation was conducted at the company's office to examine cargo document-handling activities and interactions between ship agency personnel and relevant stakeholders. The observations focused on the sequence of document processing, verification practices, communication, coordination, and difficulties encountered during daily operations. Second, semi-structured interviews were conducted with selected informants to obtain detailed information about cargo document management. Questions addressed the procedures followed, the obstacles encountered, their effects on operational activities, and the measures undertaken to resolve them. Follow-up questions were used when clarification or additional information was necessary. Third, documentation studies were conducted by reviewing relevant records and materials, such as cargo manifests, bills of lading, shipping instructions, operational reports, correspondence, and other cargo-related documents, where available and authorized. These materials were used to clarify the procedures observed and corroborate information obtained through interviews.

Primary data consisted of information obtained from observations and interviews, while secondary data consisted of relevant company documents, operational records, applicable regulations, and supporting literature. Information from these sources was organized systematically to facilitate comparison and identify recurring issues in the management of cargo documents.

The data were analyzed using qualitative descriptive analysis based on the framework proposed by Miles, Huberman, and Saldaña (2014), which comprises data condensation, data display, and conclusion drawing and verification. First, data condensation involved selecting, organizing, and coding information relevant to the research objectives. Repetitive or irrelevant information was excluded while preserving evidence concerning document-handling procedures, operational obstacles, and optimization efforts. Second, data display involved organizing the findings into descriptive narratives, thematic

categories, or summary tables to clarify the relationships between document-processing activities, identified problems, their contributing factors, and the responses adopted by the company. Third, conclusion drawing and verification involved interpreting the identified patterns and comparing the findings across observations, interviews, and documentary evidence. Source triangulation was used to examine the consistency of information obtained from different informants and data sources. Where discrepancies occurred, the available evidence was reviewed before conclusions were formulated.

The analysis was intended to identify the main obstacles in cargo document management and assess opportunities to improve document accuracy, processing timeliness, and stakeholder coordination. No statistical inference was performed because the study employed a qualitative case study design.

The study was conducted with due consideration for participant confidentiality, organizational permissions, and the protection of commercially sensitive information. Permission to conduct observations and access company records was obtained from the authorized representative of PT Adhigana Paraduta Mulya Belitung Branch, where required. Informants were informed about the purpose of the research, and informed consent was obtained before interviews.

Participants' identities and confidential company information were protected in the research report unless explicit authorization for disclosure had been provided. Cargo documents, internal correspondence, operational records, and photographs were included or reproduced only when the necessary authorization had been obtained. Ethics committee approval was obtained where required by the applicable institutional policy. If applicable, the name of the ethics committee and the approval number should be stated in the final manuscript.

3. RESULTS AND DISCUSSION

3.1. Load Document Management Process

The management of cargo documents at PT. Adhigana Paraduta Mulya Belitung Branch is carried out to ensure the smooth operation of ships and compliance with port and customs regulations. This process involves various stages that must be carried out systematically and coordinated. The following are the main stages in the management of cargo documents in this company:

a. Receipt of Cargo Data from the Owner of the Goods
   1) Before the ship arrives at the port, the shipper must provide cargo data to the ship's agent.
   2) The data provided includes the type of goods, quantity, net weight, gross weight, size, destination port, as well as supporting documents such as invoices and packing lists.
   3) Shipping agents are responsible for ensuring that the data received is complete and in accordance with the standards set by the port and customs authorities.

b. Document Creation and Verification
   1) After receiving the data from the owner of the goods, the shipping agent will compile the main documents such as the Bill of Lading (B/L), Cargo Manifest, and Shipping Instruction.

2) The Bill of Lading (B/L) contains details of the goods being shipped, the name of the vessel, the shipping route, and the party responsible for the goods.
3) Cargo Manifest is a list of all ship cargoes that will be inspected by port and customs authorities before the ship departs.
4) Document verification is carried out to ensure there are no errors in the data before it is submitted to the port authority.

c. Submission of Documents to the Port Authority
1) After verification is complete, the documents are submitted to the syahbandar, customs, and port authorities to obtain a sailing permit and loading and unloading permit.
2) This process involves checking documents and cargo to ensure compliance with customs regulations and shipping safety.
3) In some cases, independent surveyors will re-check the ship's cargo to ensure that the data written in the document is in accordance with the actual conditions.

d. Distribution of Documents to Related Parties
1) Once the documents are approved by the port authorities, the shipping agent distributes the documents to related parties, including the owner of the goods, the shipping company, and the receiving party at the destination port.
2) The documents that have been ratified become the basis for the loading and unloading process, the collection of transportation costs, and the administrative settlement between all parties involved in the delivery of goods.

3.2. Obstacles in Document Management

Based on the results of the research, several obstacles were found that often occurred in the process of managing content documents at PT. Adhigana Paraduta Mulya Belitung Branch. These obstacles include:

a. Load Calculation Error by Surveyor
1) Errors in the calculation of the weight and quantity of goods by surveyors are common, especially in the shipment of bulk goods.
2) Differences between the measurement results at the loading port and the destination port may cause data discrepancies in the Cargo Manifest and Bill of Lading.
3) This has the potential to cause problems in the insurance claim process and may lead to fines or penalties from port authorities.

b. Data Input Error on Bill of Lading
1) In some cases, errors in data input such as mistyping the ship name, quantity of goods, or shipping details can lead to a dispute between the shipper and the consignee.
2) This error can also result in delays in the issuance of documents and affect the smooth delivery of goods.

c. Delays in Document Management
   1) The process of submitting documents to the port authority is often delayed due to long queues at the syahbandar and customs offices.
   2) Complex administrative requirements as well as lack of coordination between the parties involved are also major factors in this delay.
   3) Delays in processing documents can cause ships to be subject to demurrage fines (additional costs due to delays in docking at the port).

d. Lack of Utilization of Digital Technology
   1) Document management at PT. Adhigana Paraduta Mulya is still mostly done manually, which increases the risk of errors and slows down the administrative process.
   2) Some documents are still printed in physical form and require a direct signature, so they take longer to complete.
   3) The lack of a digitalization system that is integrated with port authorities is also an obstacle in the efficiency of the document management process.

These obstacles show the need to improve the document management system to make it more efficient and accurate.

3.3. Efforts to Optimize Document Management

To overcome the obstacles found in this study, some optimization strategies that can be applied are as follows:

a. Implementation of Document Digitization System
   1) Implementation of a digital-based document management system to speed up the process of document input, verification, and distribution.
   2) The use of a cloud-based platform that allows real-time access to documents by all relevant parties.
   3) Reduced reliance on physical documents to avoid delays due to manual administrative processes.

b. Regular Training for Operational Staff
   1) Conducting training for operational staff on the management of cargo documents, the use of digital technology, and port and customs regulations.
   2) This training aims to improve staff understanding in handling documents more quickly and accurately.
   3) By improving staff competence, it is hoped that it can reduce data input errors and speed up the document management process.

c. Improved Coordination with Port Authorities
   1) Hold regular meetings with the syahbandar, customs, and port authorities to improve the procedure for submitting documents.

2) Establish better communication with the owner of the goods and the shipping company so that documents can be prepared early before the ship arrives at the port.
3) Use an electronic queue system or agreement system to reduce the waiting time in document processing at the port authority office.

By implementing this strategy, PT. Adhigana Paraduta Mulya is expected to increase efficiency in the handling of cargo documents, reduce delays, and increase accuracy and compliance with maritime and customs regulations.

4. CONCLUSION AND RECOMMENDATIONS

This study concludes that cargo document management at PT. Adhigana Paraduta Mulya Belitung Branch continues to face operational challenges that affect administrative efficiency and document accuracy. The main issues identified include data entry errors caused by discrepancies between documents and the actual condition of cargo, delays in document verification and submission due to bureaucratic complexity and limited coordination with external stakeholders, and the limited adoption of digital technology, which results in continued reliance on manual processes. These findings indicate that effective cargo document management requires accurate data handling, efficient inter-organizational coordination, and appropriate technological support to minimize administrative errors and improve workflow efficiency.

To address these challenges, the company should consider implementing a digital document management system, strengthening coordination with port authorities, customs officials, and cargo owners, and providing regular training for operational staff in document handling, data verification, and relevant regulatory requirements. Periodic evaluations of documentation procedures are also recommended to identify recurring errors and improve service performance. This study is limited to the cargo document management practices examined at PT. Adhigana Paraduta Mulya Belitung Branch, which may not represent the conditions of other ship agency companies. Future research should examine document management practices across multiple ship agency companies and assess the effectiveness of digitalization, employee training, and inter-organizational coordination in improving document accuracy, processing time, and overall operational efficiency.

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responsibility for the content. Generative AI was not used to produce data, analyses, findings, or references. If no AI tool was used: "The authors did not use generative AI tools in preparing this manuscript."

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REFERENCES

Gavalas, D., Syriopoulos, T., & Roumpis, E. (2022). Digital adoption and efficiency in the maritime industry. *Journal of Shipping and Trade, 7*, Article 11. https://doi.org/10.1186/s41072-022-00111-y

International Maritime Organization. (2021). *Implementing electronic data exchange: New data model published*. https://www.imo.org/en/mediacentre/pages/whatsnew-1667.aspx

International Maritime Organization. (2022a). *Convention on Facilitation of International Maritime Traffic (FAL)*. https://www.imo.org/en/about/conventions/pages/convention-on-facilitation-of-international-maritime-traffic-%28fal%29.aspx

International Maritime Organization. (2022b). *IMO Compendium on Facilitation and Electronic Business*. https://imocompendium.imo.org/

International Maritime Organization. (2022c, May 23). *Single window for ship data exchange to become mandatory*. https://www.imo.org/en/mediacentre/pressbriefings/pages/fal-46-amendments.aspx

International Maritime Organization. (2022d). *Guidelines on authentication, integrity and confidentiality of information exchanges via maritime single windows and related services*. IMO FAL guidance. https://www.imo.org/en/ourwork/facilitation/pages/falguidance-default.aspx

International Maritime Organization. (2023). *Guidelines for harmonized communication and electronic exchange of operational data for port calls*. IMO FAL.5/Circ.52. https://www.imo.org/en/ourwork/facilitation/pages/falguidance-default.aspx

International Maritime Organization. (2024a, January 31). *Maritime Single Window—Advancing digitalization in shipping*. https://www.imo.org/en/mediacentre/pressbriefings/pages/maritime-single-window-advancing-digitalization-in-shipping.aspx

International Maritime Organization. (2024b). *FAL Convention: Declarations and certificates*. https://www.imo.org/en/ourwork/facilitation/pages/declarationscertificates-default.aspx

International Maritime Organization. (2024c). *Guidelines on Port Community Systems*. IMO FAL.5/Circ.54. https://www.imo.org/en/ourwork/facilitation/pages/falguidance-default.aspx

International Maritime Organization. (2024d). *FAL-related guidance*. https://www.imo.org/en/ourwork/facilitation/pages/falguidance-default.aspx

Krebs, T. (2024). Electronic bills of lading, transnational and English law: Blocking the blockchain? *Uniform Law Review, 28*(3–4), 323–338. https://doi.org/10.1093/ulr/unad022

Ministry of Transportation of the Republic of Indonesia. (2022a). *Minister of Transportation Regulation No. PM 23 of 2022 concerning the Second Amendment to Minister of Transportation Regulation No. PM 93 of 2013 concerning the Organization and Operation of Sea Transportation*. https://peraturan.go.id/id/permenhub-no-pm-23-tahun-2022

Ministry of Transportation of the Republic of Indonesia. (2022b). *Minister of Transportation Regulation No. PM 28 of 2022 concerning Procedures for Issuing Sailing Approval and Approval for Vessel Activities at Ports*. https://jdih.dephub.go.id/

Plomaritou, E., & Jeropoulos, S. (2022). The digitalisation in chartering business: Special reference to the role of e-bill of lading in the bulk and liner markets. *Journal of Shipping and Trade, 7*, Article 28. https://doi.org/10.1186/s41072-022-00129-2

Sunitiyoso, Y., Nuraeni, S., Pambudi, N. F., Inayati, T., Nurdayat, I. F., Hadiansyah, F., & Tiara, A. R. (2022). Port performance factors and their interactions: A systems thinking approach. *The Asian Journal of Shipping and Logistics, 38*(2), 107–123. https://doi.org/10.1016/j.ajsl.2022.04.001

Sun, S., & He, R. (2024). How to possess an electronic bill of lading as information? A comparative perspective of the legislation on the "possession problem" of electronic bills of lading. *Frontiers in Marine Science, 11*, Article 1493647. https://doi.org/10.3389/fmars.2024.1493647

United Nations Conference on Trade and Development. (2022). *Review of Maritime Transport 2022: Navigating stormy waters*. United Nations. https://unctad.org/topic/transport-and-trade-logistics/review-of-maritime-transport

United Nations Conference on Trade and Development. (2023). *Review of Maritime Transport 2023: Towards a green and just transition*. United Nations. https://unctad.org/topic/transport-and-trade-logistics/review-of-maritime-transport

United Nations Conference on Trade and Development. (2024). *Review of Maritime Transport 2024: Navigating maritime chokepoints*. United Nations. https://unctad.org/publication/review-maritime-transport-2024

Wibowo, U. L. N., & Wahyuilahi, M. (2025). Understanding stakeholder coordination in maritime logistics: A qualitative multiple case study of Makassar Port, Indonesia. *Sinergi International Journal of Logistics, 3*(4). https://doi.org/10.61194/sijl.v3i4.1137

Ali, M. A. (2014). Analisis optimalisasi pelayanan konsumen berdasarkan teori antrian pada Kaltimgps.com di Samarinda. E-Journal Ilmu Administrasi Bisnis.

Dibble, W. J., & Mitchell, P. (2009). Draught surveys: A guide to good practice. North of England P&I Association Limited.

Departemen Pendidikan dan Kebudayaan. (1995). Kamus Besar Bahasa Indonesia. Balai Pustaka.

Fattah, B. F. B., Iswanto, I., Astriawati, N., & Widyanto, H. (2022). Prosedur clearance in dan clearance out kapal milik PT. Salam Pacific Indonesia Lines. Majalah Ilmiah Bahari Jogja, 20(1), 87–96.

Impulse Digital. (2024, 20 November). Shipping instruction: Pengertian, fungsi dan isi dokumen shipping instruction. SAPX. https://www.sapx.id/blog/shipping-instruction-pengertian-fungsi-dan-isi-dokumen-shipping-instruction/

Istopo. (1999). Kapal dan muatannya. Koperasi Karyawan BP3IP.

Martopo, C. A., & S. (2004). Penanganan muatan. Politeknik Negeri Pelayaran.

Republik Indonesia. (2008). Undang-Undang Republik Indonesia Nomor 17 Tahun 2008 tentang Pelayaran.

Republik Indonesia, Kementerian Perhubungan. (2012). Peraturan Menteri Perhubungan Republik Indonesia Nomor PM 36 Tahun 2012 tentang Organisasi dan Tata Kerja Kantor Kesyahbandaran dan Otoritas Pelabuhan.