P-ISSN: 2828-8599
E-ISSN: 2829-2111

Evaluation of the Implementation of Loading and Unloading Service Standards in the Talang Duku Port Area, Muaro Jambi Regency

Juwita A[1*], Novita Wulandari[2], M. Abduh[3]

[1,2,3] Master of Government Science, Tamansiswa University Palembang, Indonesia

Abstract

Duku Port, located along the Batanghari River, plays a strategic role as a gateway for international trade in the Jambi region. However, the port faces significant challenges due to the shallow river channel, which limits access for large-tonnage vessels. Only smaller ships can operate safely, while larger vessels must wait for high tide or divert to other ports. This condition reduces the port's operational performance, decreases revenue, and hinders regional economic growth. Although these issues have been acknowledged, comprehensive evaluations of cargo handling service standards remain limited. This study aims to assess the effectiveness of these service standards through a qualitative case study approach. Data were collected through in-depth interviews, direct observation, and document analysis, followed by descriptive and interpretive analysis. The findings indicate that the implementation of service standards has improved loading and unloading efficiency and reduced operational costs. Nevertheless, technical and service-related limitations persist. Therefore, strengthening infrastructure, conducting regular training, and adopting new technologies are essential. This study highlights the need for continuous evaluation and improvement of service standards to ensure safe and efficient port operations that support international trade and regional economic development.

Article Info

Keywords:
Evaluation,
Port,
Service Standards

JEL Classification:
G20, G30, L80

Corresponding Author:
Juwita A
(cinc30n@gmail.com)

Received: 05-05-2025
Revised: 20-06-2025
Accepted: 28-06-2025
Published: 31-07-2025

1. Introduction

Government Regulation of the Republic of Indonesia Number 61 of 2009 defines a port as a land and water area with specific boundaries used for business and government activities. Ports are also used as a place for ships to dock, for passengers to embark and disembark, and for loading and unloading goods (Utama et al., 2024). Ports can also include terminals and berthing facilities equipped with facilities for shipping safety and security, supporting port activities, and serving as a hub for intra- and intermodal transportation (Lun et al., 2023). Law of the Republic of Indonesia Number 25 of 2009 concerning Public Services states that building trust and agreement to achieve harmony between users and providers of public services must be carried out in line with the expectations and demands of all citizens and residents (Amiruddin, 2023).

The measurable performance achieved by ports in providing services for ships, goods, and facilities and equipment within a specific timeframe and unit is referred to as operational service performance in Decree of the Director General of Sea Transportation Number UM.002/38/18/DJPL-11 concerning Port Operational Service Performance Standards (Duru et al., 2020). The work results requirements for each service, known as operational service performance standards, are the things that terminal/port managers must meet in order to provide port services, including the provision of port infrastructure and equipment (Tulus et al., 2023). Loading and unloading, loading goods, and receiving/shipping are the three main activities that make up the loading and unloading process, according to Minister of

Transportation Regulation Number 60 of 2014 concerning the Organization and Business of Loading and Unloading of Goods from and to Ships (Agrawal et al., 2023).

Minister of Transportation Regulation Number PM 152 of 2016 concerning the Organization and Management of Loading and Unloading of Ships from and within Ships (Sutaryanto et al., 2022). To provide quality, fast, simple, affordable, and measurable services to the public, these standards serve as the basic reference, guideline for service implementation, and benchmark for assessing service quality, as a responsibility and promise of the provider.

In accordance with Government Regulation Number 101 of 2021 concerning the Merger of PT Pelabuhan Indonesia I, PT Pelabuhan Indonesia III, and PT Pelabuhan Indonesia IV into PT Pelabuhan Indonesia II, with PT Pelabuhan Indonesia II (Persero) becoming the remaining partner. Subsequently, PT Pelabuhan Indonesia II (Persero) changed its name to "PT Pelabuhan Indonesia (Persero)" or Pelindo, in accordance with Letter of the Minister of State-Owned Enterprises of the Republic of Indonesia dated October 1, 2021, Number S-756/MBU/10/2021 concerning Approval of Name Changes, Amendments to the Articles of Association, and Company Logo.

Previous research on loading and unloading activities at ports has generally focused on several key aspects of evaluation (Mombeni et al., 2022). Unloading involves removing goods from a ship or transport vehicle to a port storage area, using heavy equipment such as a crane or forklift, and manual labor. Conversely, loading involves transferring goods from the storage area onto a ship or transport vehicle, with attention to safe handling. Service quality standards are assessed in terms of speed and efficiency, measured by the time required for each stage and the quality of goods handling to avoid damage or loss (Jain & Gupta, 2019).

Safety is a primary focus, with evaluations of compliance with safety procedures, the use of personal protective equipment (PPE), and the frequency of incidents or accidents (George et al., 2023). Health conditions and the work environment are also examined, including the cleanliness of loading and unloading areas, ventilation, and employee wellness programs (Juba, 2024). Coordination between parties involved in the loading and unloading process and the effectiveness of communication are also important aspects of the evaluation (Hadiningrat et al., 2025).

The use of modern technology and innovation, such as warehouse management systems (WMS) and automated tools, is often assessed to improve efficiency and accuracy (Karpova, 2022). Previous research has also identified various operational challenges, such as delays and logistical issues, and suggested improvements, including increased training, improved procedures, and investment in new technology.

High-quality port services are a critical benchmark to ensure that cargo handling operations the core of port activities run safely, efficiently, and reliably. Indonesian Ministry of Transportation Regulation No. 152 of 2016 concerning Standards for Cargo Handling Services emphasizes the need for planning, operational readiness, competent human resources, and supporting facilities so that cargo handling processes meet customer expectations and enhance the competitiveness of Indonesian ports in global trade. Efficiency in cargo handling directly contributes to port productivity and regional economic growth. (Notteboom & Rodrigue, 2005) emphasized that inefficiencies such as vessel waiting time or additional operational costs can reduce port competitiveness, affect national logistics costs, and ultimately suppress trade volumes. Therefore, measuring the effectiveness of service standard implementation is a key indicator of a port's readiness to support export-import activities (Tan et al., 2020).

The case study method is widely used to evaluate port service performance because it can reveal complex contextual problems (Talley et al., 2014). Research by (Tiwari et al., 2025) demonstrated how this approach can identify field-level barriers such as inter-agency coordination and compliance with SOPs and formulate data-driven solutions to improve service quality. This is particularly relevant for Talang Duku Port, which has its own unique geographical and institutional characteristics.

In terms of infrastructure, river ports often face problems such as siltation of shipping lanes and limited dock capacity. Cullinane & Wilmsmeier (2011) noted that such physical conditions require adaptive operational strategies such as periodic dredging and organized berthing to ensure that mid-sized vessels can still be served efficiently. Without infrastructure

improvements, achieving service standards consistently becomes challenging. Human resources are a crucial component in meeting service standards. (Shet et al., 2019) found a positive correlation between the competency of personnel such as crane operators, logistics planners, and customs officers and cargo handling productivity. Training programs based on national standard curricula and competency certification are considered effective for maintaining service quality and ensuring workplace safety.

Technological advancement in ports, including Terminal Operating Systems (TOS), RFID, and online scheduling platforms, has proven effective in reducing manual errors and accelerating information flow. However, digital gaps and limited IT infrastructure at regional ports often hinder full implementation of such technologies. The integration of digital systems like Inaportnet at Talang Duku Port is a positive step, yet it requires improved networks and user training to maximize its benefits.

Ultimately, evaluating service standards must be a continuous process, not just a one-time audit. Dunn's policy evaluation framework (1990) stresses the importance of iterative assessments to identify policy gaps, monitor effectiveness, and recommend improvements (Dunn, 2017). For Talang Duku Port, aligning national standards with local conditions, user needs, and environmental dynamics will be essential for the long-term success of efforts to enhance port performance.

2. Methods

This study employs a qualitative thematic approach, which is designed to explore and interpret patterns of meaning (themes) that emerge from textual data. Qualitative methods are particularly effective for understanding social phenomena in depth and for capturing the complexity of real-world contexts. The approach allows researchers to examine how participants experience, understand, and describe particular issues in this case, the implementation of cargo handling service standards at Talang Duku Port.

As stated by Creswell (2004), case study research is a form of qualitative inquiry in which the researcher explores a real-life, bounded system (a case) over time through detailed, in-depth data collection involving multiple sources of information (Ishtiaq, 2019). In line with this, the study adopts a case study design, focusing specifically on Talang Duku Port as a single case to be explored holistically.

Data were collected using three primary techniques:

a. In-depth interviews with stakeholders such as port authorities, terminal operators, workers, and related government officials.
b. Direct observation of port activities, especially cargo loading and unloading processes.
c. Document analysis of regulatory guidelines, operational records, and service standard documentation.

The participants in this study were selected through a purposive sampling technique, which involves choosing informants based on specific criteria relevant to the research questions. According to Rusdianti et al. (2022) an informant is an individual who possesses broad knowledge or data related to the object being studied and can provide crucial insights during the research process. In line with Robinson (2023), purposive sampling targets individuals who are especially knowledgeable or experienced with the phenomenon under study (Wilmsmeier & Monios, 2020).

Thematic analysis was used as the core method of data interpretation. This analytical technique involves identifying, analyzing, and reporting patterns (themes) within the qualitative data. Through coding and categorization, recurrent themes such as service effectiveness, technical limitations, and improvement needs were developed and interpreted in relation to the research objectives.

3. Results and Discussion

This research was conducted at Lumajang University (UNILU), at Jl. Musi No.12, Lumajang Regency, East Java. Established on April 1, 1983, by the W.R. Soepratman II Foundation, UNILU initially opened three faculties: Law, Social and Political Sciences, and Agriculture. UNILU is committed to improving the quality of education through BAN-PT accreditation and active community service. UNILU also establishes domestic and international cooperation to strengthen research, education, and service. The Indonesia Smart Card-College (KIP-K) program uses the George C. Edwards III model, which includes communication, resources, disposition, and bureaucratic structure.

Talang Duku Port, located in Muaro Jambi Regency, is one of the strategic ports in Jambi Province that supports international trade and regional logistics activities. However, limitations in infrastructure and geographical conditions such as the shallow Batanghari River channel pose significant challenges to the loading and unloading operations. Within this context, evaluating the implementation of service standards becomes essential to assess the effectiveness of policies and ensure the smooth functioning of the port as a critical node in the national transportation network.

This study adopts the policy evaluation framework developed by William N. Dunn (1990), which outlines five evaluative criteria: effectiveness, efficiency, adequacy, equity, and responsiveness. The focus of this research is primarily on three of these dimensions effectiveness, efficiency, and responsiveness as they are most relevant for assessing the implementation of public service standards in the maritime transportation sector. The evaluation not only aims to determine whether the policy has achieved its intended goals (effectiveness), but also how well resources are utilized (efficiency), and how the service responds to user needs (responsiveness).

As a normative reference, this study refers to the Regulation of the Minister of Transportation of the Republic of Indonesia No. 152 of 2016, which stipulates the Standard of Loading and Unloading Services from and to Ships. This regulation sets minimum service standards to ensure the safety, speed, and orderliness of port loading and unloading processes. By referring to this regulation, the evaluation measures how far Talang Duku Port has implemented these standards in actual practice.

Using discourse analysis, the study examines how the regulation is understood and applied by stakeholders at the port. Findings show that while policy documents are available, understanding and interpretation at the operational level vary significantly. Some port managers view service standards as purely administrative, while others have translated them into operational instructions and performance indicators. This inconsistency highlights challenges in translating policy into practical, consistent action. In terms of effectiveness, the implementation of service standards has successfully reduced loading and unloading times from an average of six hours to three to four hours per vessel. This aligns with Dunn's (1990) concept of effectiveness, which is defined by the extent to which a policy achieves its stated objectives. Operational improvements indicate that the port is approaching key service performance targets outlined in the regulation.

From an efficiency standpoint, the port has achieved cost savings through improved work scheduling, routine training of labor, and procurement of equipment better suited to operational needs. This reflects Dunn’s (1990) notion that efficiency refers to the optimal ratio between inputs and outputs in policy implementation. Additionally, (Saaty & Vargas, 2001) emphasize the importance of decision modeling to allocate resources efficiently in public management, which supports the strategic resource use observed at Talang Duku.

In the dimension of responsiveness, the study finds increased interaction between service providers and users through feedback channels and the adoption of digital systems such as Inaportnet. According to Dunn (1990), responsiveness is characterized by the ability of public organizations to adapt to user needs and preferences. The establishment of mechanisms for handling complaints now increasingly addressed in a timely manner marks a shift toward a more participatory and accountable service culture.

Despite these improvements, challenges remain in terms of adequacy. Several port facilities, such as warehouses, heavy equipment, and docks, still face capacity constraints in both quantity and technical condition. According to (Dunn, 2017), adequacy refers to the degree to which a policy or program meets societal needs comprehensively. At Talang Duku, service standards cannot be considered fully adequate if supporting infrastructure does not meet minimum operational thresholds.

Through a semiotic approach, the study also explores how symbols such as safety signs, procedural boards, and performance indicators are perceived by port workers. Some of these symbols are regarded as mere formalities due to a lack of communication and training, leading to low compliance in the field. This highlights that symbolic aspects of policy implementation deserve attention, as stakeholder perceptions of these symbols affect levels of compliance and participation.

This research demonstrates that (Dunn, 2017) policy evaluation framework is highly applicable in assessing standard-based public services such as port loading and unloading operations. Talang Duku's success in enhancing effectiveness and efficiency affirms that implementing service standards can lead to tangible improvements. However, evaluation efforts must be continuous and inclusive of dimensions such as adequacy, symbolic interpretation, and stakeholder participation. Therefore, it is recommended that future improvements focus on routine infrastructure maintenance, service literacy for workers, and the strengthening of regulation through digital technologies to support the evolution of a modern and adaptive port system.

4. Conclusion

Based on the analysis conducted, it was concluded that, overall, the evaluation of the implementation of loading and unloading service standards at Talang Duku Port revealed several key findings relevant to policy evaluation theory. The implementation of service standards has significantly improved operational effectiveness, as evidenced by improved loading and unloading completion times and operational cost efficiency. Strategic measures such as regular training, infrastructure improvements, and the adoption of new technologies have supported increased resource efficiency, although challenges related to service adequacy, such as infrastructure maintenance and technical constraints, still need to be addressed to ensure consistent implementation of standards. Equity in treatment and access to services is also a key focus, with efforts to maintain equal treatment facing challenges in coordination and communication between parties. Responsiveness to service user needs has been assessed as adequate, but coordination needs to be improved to respond more effectively. Furthermore, the evaluation of the accuracy of service standard implementation emphasized the importance of maintaining service quality in accordance with established procedures to optimize safety, efficiency, and user satisfaction.

Future recommendations include continuous improvement in infrastructure management, increased coordination between relevant parties, and strengthening the responsiveness system in responding to service user needs. This approach will not only strengthen the operational effectiveness and efficiency of Talang Duku Port, but also ensure that the service standards implemented truly support the safety, security and satisfaction goals of all relevant stakeholders.

References

Agrawal, T. K., Hanson, R., Sultan, F. A., Johansson, M. I., Andersson, D., Stefansson, G., Katsela, K., & Browne, M. (2023). Automating loading and unloading for autonomous transport: Identifying challenges and requirements with a systems approach. In H. A. ElMaraghy & M. ElMaraghy (Eds.), *Advances in production management systems. Production management systems for responsible manufacturing, service, and logistics futures* (pp. 332–345). Springer. https://doi.org/10.1007/978-3-031-43670-3_23

Amiruddin, S. (2023). Effectiveness of Law Enforcement Against Criminal Acts of Corruption in Public Services Based on Law Number 25 of 2009 Concerning Public Services.

Cullinane, K., & Wilmsmeier, G. (2011). The contribution of the dry port concept to the extension of port life cycles. In R. W. B. Robinson, K. Cullinane, & G. Wilmsmeier (Eds.), *Maritime transport: The evolution of international marine policy and shipping* (pp. 359–379). Springer. https://doi.org/10.1007/978-1-4419-8408-1_18

Dunn, W. N. (2017). *Public policy analysis* (6th ed.). Routledge. https://doi.org/10.4324/9781315181226

Duru, O., Galvao, C. B., Mileski, J., Robles, L. T., & Gharehgozli, A. (2020). Developing a comprehensive approach to port performance assessment. The Asian Journal of Shipping and Logistics, 36(4), 169–180. https://doi.org/10.1016/j.ajsl.2020.03.001

George, J., Shafqat, N., Verma, R., & Patidar, A. B. (2023). Factors influencing compliance with personal protective equipment (PPE) use among healthcare workers. *Cureus, 15*(6), e35269. https://doi.org/10.7759/cureus.35269

Ishtiaq, M. (2019). [Review of the book *Research design: Qualitative, quantitative and mixed methods approaches* (4th ed.), by J. W. Creswell]. *English Language Teaching, 12*(5), 40. https://doi.org/10.5539/elt.v12n5p40

Jain, S. K., & Gupta, G. (n.d.). *Measuring service quality: SERVQUAL vs. SERVPERF scales* (Vol. 29).

Juba, O. O. (2024). Impact of workplace safety, health, and wellness programs on employee engagement and productivity. *International Journal of Health, Medicine and Nursing Practice, 6*(4), 12–27. https://doi.org/10.47941/ijhmnp.1819

Karpova, N. P. (2022). Modern warehouse management systems. In V. V. Ivanov, V. A. Tarasov, & A. V. Tsvetkov (Eds.), *Digital technologies in logistics and infrastructure* (pp. 261–267). Springer. https://doi.org/10.1007/978-3-030-83175-2_34

Lun, Y. H. V., Lai, K., Cheng, T. C. E., & Yang, D. (2023). Port operations. In *Shipping and logistics management* (pp. 201–214). Springer International Publishing. https://doi.org/10.1007/978-3-031-26090-2_13

Mombeni, S., Darestani, S. A., & Shemami, N. H. (2022). Evaluation of the effective factors of unloading and loading goods in ports and the impact on the environment using the MCDM method. *Environmental Science and Pollution Research, 30*, 14873–14883. https://doi.org/10.1007/s11356-022-23219-x

Suharyono, K. P., Hadiningrat, S., Asmoro, R. S., & Silalahi, V. A. J. M. (2025). Improving ship loading and unloading efficiency through optimizing cargo control room operations. *Jurnal Cakrawala Akademika, 1*(6), 1890–1907. https://doi.org/10.70182/JCA.v1i6.7

Notteboom, T. E., & Rodrigue, J.-P. (2005). Port regionalization: Towards a new phase in port development. *Maritime Policy & Management, 32*(3), 297–313. https://doi.org/10.1080/03088830500139885

Rusdianti, I. S., Irmadariyani, R., & Kustono, A. S. (2022). E-finance: Mitigation of fraud tendency in Indonesia. *IJEBD International Journal of Entrepreneurship and Business Development, 5*(3), 581–589. https://doi.org/10.29138/ijebd.v5i3.1857

Saaty, T. L., & Vargas, L. G. (2001). *Models, methods, concepts & applications of the analytic hierarchy process* (Vol. 34). Springer US. https://doi.org/10.1007/978-1-4615-1665-1

Shet, S. V., Patil, S. V., & Chandawarkar, M. R. (2019). Competency-based superior performance and organizational effectiveness. *International Journal of Productivity and Performance Management, 68*(4), 753–773. https://doi.org/10.1108/IJPPM-03-2018-0128

Sutaryanto, S., Sudirman, S., & Ambarwati, A. (2022). Implementation of Regulation of the Minister of Transportation of the Republic of Indonesia Number PM 29 Year 2014 concerning prevention of maritime environmental pollution at Kesyahbandaran Utama Office. *International Journal of Education & Social Sciences (IJESS), 3*, [no page numbers]. http://www.ijess.org

Talley, W. K., Ng, M., & Marsillac, E. (2014). Port service chains and port performance evaluation. *Transportation Research Part E: Logistics and Transportation Review, 69*, 236–247. https://doi.org/10.1016/j.tre.2014.05.008

Tan, W. W., Jeffreys, C., & Parolini, A. (2020). Implementing implementation: Integrating the measurement of implementation and effectiveness in complex service systems. In B.

Albers, A. Shlonsky, & R. Mildon (Eds.), *Implementation science 3.0* (pp. 253–273). Springer International Publishing. https://doi.org/10.1007/978-3-030-03874-8_10

Tiwari, M., Gepp, A., & Kumar, K. (2025). Using data analytics to distinguish legitimate and illegitimate shell companies. *Journal of Economic Criminology, 7*, 100123. https://doi.org/10.1016/j.jeconc.2024.100123

Tulus, T., Purwati, U., Buchari, E., Kadarsah, E., & Purwati, T. U. (n.d.). *Legal aspects & evaluation of operational service performance standards of Boom Baru Container Terminal Palembang*.

Utama, D. R., Hamsal, M., Rahim, R. K., & Furinto, A. (2024). The effect of digital adoption and service quality on business sustainability through strategic alliances at port terminals in Indonesia. *The Asian Journal of Shipping and Logistics, 40*(1), 11–21. https://doi.org/10.1016/j.ajsl.2023.12.001

Wilmsmeier, G., & Monios, J. (2020). Port and dry port life cycles. In R. Bergqvist, K. Woxenius, & G. Wilmsmeier (Eds.), *Dry ports – A global perspective* (pp. 501–515). Springer. https://doi.org/10.1007/978-3-030-39990-0_22