

Port Governance and Bureaucratic Challenges: A Literature Review of Regulatory Reform in the Indonesian Maritime Sector

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ABSTRACT

Port governance in Indonesia remains a critical issue within maritime sector reform due to institutional fragmentation, overlapping authority, bureaucratic complexity, and uneven implementation of regulatory policies. As an archipelagic country, Indonesia depends heavily on efficient port systems to support logistics connectivity, investment, inter-island trade, and maritime competitiveness. This study aims to examine how regulatory reform shapes Indonesian port governance and to identify the bureaucratic challenges that affect the implementation of reform in the maritime sector. Using a qualitative descriptive literature review approach, this article analyzes secondary data from peer-reviewed journal articles, policy documents, institutional reports, and relevant academic publications. The data were examined through qualitative content analysis by identifying key themes related to port governance, regulatory reform, bureaucratic coordination, digital integration, institutional capacity, and stakeholder collaboration. The findings indicate that regulatory reform has encouraged modernization in port management, service integration, and digital transformation; however, its effectiveness remains limited by fragmented institutional mandates, procedural rigidity, weak inter-agency coordination, and uneven bureaucratic capacity across ports. The study also finds that digitalization can improve transparency and efficiency, but only when supported by regulatory coherence, organizational readiness, and integrated information systems. This article concludes that Indonesian port reform should be understood not merely as legal or infrastructural modernization, but as a broader governance transformation requiring regulatory harmonization, bureaucratic simplification, institutional coordination, stakeholder participation, and adaptive policy learning to strengthen national maritime competitiveness.

Keyword: Port Governance, Regulatory Reform, Bureaucratic Challenges, Maritime Sector

INTRODUCTION

Port governance has become a critical issue in maritime studies because ports are no longer understood merely as physical infrastructures for cargo movement, but as complex governance spaces where state authority, market actors, logistics systems, regulatory institutions, and digital technologies interact. In the Indonesian maritime sector, this issue is particularly important because the country's archipelagic geography requires ports to function as strategic connectors between islands, production centers, hinterlands, and international trade routes. However, the effectiveness of port governance is often constrained by fragmented institutional arrangements, overlapping bureaucratic authority, procedural rigidity, and uneven implementation of maritime regulations. These conditions indicate that regulatory

reform in the port sector cannot be viewed only as a legal adjustment, but must also be examined as an institutional process that reshapes coordination, accountability, and administrative capacity within the maritime bureaucracy (Rahayu et al., 2024; Sirajuddin et al., 2026; Sunitiyoso et al., 2022).

The core issue addressed in this article is the persistent gap between regulatory reform and bureaucratic performance in Indonesian port governance. Although various reform initiatives have been introduced to improve port services, logistics efficiency, private sector participation, and maritime competitiveness, the implementation of these reforms remains uneven across different port systems and administrative levels (Hapipi, 2024; Irfansyah et al., 2024). Port governance involves multiple actors, including central ministries, port authorities, state-owned enterprises, local governments, private terminal operators, shipping companies, and logistics providers. When these actors operate under fragmented rules and sectoral bureaucratic interests, reform may result in institutional complexity rather than improved governance outcomes. Therefore, the Indonesian case provides an important basis for examining how regulatory reform interacts with bureaucratic structures and how such interaction shapes port performance (Herdian et al., 2025; Jansen et al., 2018; Sirajuddin et al., 2019).

The urgency of discussing this issue lies in the strategic role of ports in supporting Indonesia's maritime logistics and national economic integration. Efficient ports are essential for reducing logistics costs, strengthening regional connectivity, accelerating cargo movement, and improving the competitiveness of domestic and international trade. However, in archipelagic countries, port performance is not determined solely by infrastructure capacity, but also by the quality of governance arrangements that coordinate port-to-port connectivity, port operations, and port-to-hinterland integration. Inadequate coordination between regulatory bodies, weak integration of information systems, and slow bureaucratic procedures may increase transaction costs and reduce the effectiveness of maritime reform. Thus, port governance reform is urgent because bureaucratic inefficiency in ports can directly affect supply chain reliability, regional economic development, and the broader performance of the maritime sector (Amin et al., 2021, 2024; Muhammad & Hanaoka, 2022).

Within the broader field of port governance studies, previous literature has emphasized that port reform is closely related to governance models, institutional design, ownership structure, regulatory authority, and stakeholder coordination. Port governance studies show that the success of reform depends not only on whether ports are managed by public, private, or mixed institutions, but also on how responsibilities are distributed, how regulatory authority is exercised, and how coordination is maintained among actors within the port ecosystem (Deakin et al., 2025; Kapkaeva et al., 2021). These studies are relevant for Indonesia because the country's maritime reform agenda has involved institutional restructuring, state-owned enterprise consolidation, digitalization, and policy efforts to improve port competitiveness. Nevertheless, the Indonesian experience also shows that adopting new governance models does not automatically solve bureaucratic problems when administrative routines, overlapping mandates, and weak coordination remain embedded in the implementation process (Brooks & Pallis, 2008; Caldeirinha et al., 2018; Vieira et al., 2014).

A number of studies have also shown that regulatory reform in port governance must be assessed through its actual effects on efficiency, institutional capacity, and stakeholder relations. Reform may formally redefine the role of government, port authorities, private operators, and regulators, but its success depends on whether these changes generate clearer authority, better decision-making, and more effective coordination. International literature on port reform demonstrates that legal reform may produce different outcomes depending on political context, administrative capability, and institutional readiness. In Indonesia, these concerns are highly relevant because port governance reform operates within a bureaucratic

environment characterized by multi-level authority, sectoral regulation, and strong involvement of state-owned entities. Therefore, the study of regulatory reform in the Indonesian maritime sector requires a governance perspective that connects formal policy change with the practical realities of bureaucratic implementation (de Langen & Heij, 2014; Galvão et al., 2017; Wilmsmeier et al., 2024).

Another important dimension of this issue is the emergence of digitalization and sustainability as new drivers of port governance reform. Digital port systems, integrated logistics platforms, port community systems, and data-based service mechanisms are increasingly promoted as instruments to reduce delays, improve transparency, and simplify bureaucratic procedures. However, digital transformation will not automatically resolve governance problems if it is not accompanied by institutional alignment, regulatory clarity, skilled human resources, and organizational readiness. Similarly, sustainability-oriented port reform requires coordination between environmental regulation, operational efficiency, and stakeholder compliance. These developments show that contemporary port governance reform must move beyond infrastructure modernization and address the bureaucratic, technological, and regulatory foundations that determine whether reform can produce measurable improvements in port performance (Munim et al., 2020; Olaniyi et al., 2024; Utama et al., 2024).

Table 1. Literature Mapping on Port Governance, Bureaucratic Challenges, and Regulatory Reform in the Maritime Sector

No.	Main Theme	Key Scholarly Contribution	Relevance to This Article
1	Maritime transport governance	Explains fragmentation in maritime transport systems and the need to coordinate port-to-port, within-port, and hinterland relations.	Helps frame Indonesian port governance as a multi-actor and multi-level governance problem.
2	Port performance and systems thinking	Shows that port performance is influenced by interactions among stakeholders, policies, infrastructure, and operational systems.	Supports the argument that bureaucratic coordination affects reform outcomes.
3	Digital port governance	Demonstrates the role of digital systems, competent workers, and integrated services in improving logistics performance.	Strengthens the discussion on digitalization as part of bureaucratic reform.
4	Inclusive port development	Emphasizes the importance of stakeholder inclusion and institutional conditions in port development.	Positions port reform as a governance issue, not merely an infrastructure agenda.
5	Port reform and governance models	Discusses how governance models shape performance, authority, and institutional arrangements.	Provides a theoretical basis for examining regulatory reform in ports.
6	Hub port policy and legislation	Reviews regulatory shifts and policy barriers in Indonesia's hub port development.	Connects legal reform with maritime competitiveness and bureaucratic implementation.



No.	Main Theme	Key Scholarly Contribution	Relevance to This Article
7	Port sustainability and green governance	Highlights the need for governance models that support sustainable port management.	Expands the analysis toward sustainability-oriented regulatory reform.

Source: Author, 2026

Based on the literature above, this article positions itself as a literature review that examines Indonesian port governance by connecting three analytical dimensions: regulatory reform, bureaucratic challenges, and maritime sector performance. The originality of this article lies in its effort to synthesize studies on port governance, maritime logistics, institutional reform, and bureaucratic coordination into one integrated discussion. While previous studies have examined port performance, digitalization, investment, sustainability, or governance models separately, this article focuses more specifically on how regulatory reform is mediated by bureaucratic structures and institutional capacity. This approach is important because the success of maritime reform depends not only on the content of regulation, but also on the ability of institutions to implement, coordinate, monitor, and adapt policies within complex port environments (Adler et al., 2025; de Oliveira et al., 2021; Zhang et al., 2018).

Accordingly, the author's approach in this article is to review and synthesize relevant literature on port governance and regulatory reform in order to identify the main bureaucratic challenges faced by the Indonesian maritime sector. The discussion begins by outlining the conceptual relationship between port governance and regulatory reform, then proceeds to examine how bureaucratic fragmentation, institutional coordination, digital transformation, and implementation capacity influence port reform outcomes. Through this approach, the article aims to make a scientific contribution by showing that port reform in Indonesia should not be understood only as a matter of legal modernization or infrastructure development. Rather, it should be viewed as a broader governance transformation that requires regulatory coherence, bureaucratic simplification, institutional collaboration, and adaptive administrative capacity.

METHODOLOGY

This article employs a qualitative research design using a descriptive literature review approach to examine port governance and bureaucratic challenges in the context of regulatory reform in the Indonesian maritime sector (Green et al., 2006; Paul & Criado, 2020). This method was selected because the study does not aim to measure causal relationships statistically, but rather to interpret, compare, and synthesize existing scholarly discussions on port governance, maritime bureaucracy, institutional reform, and regulatory transformation. Through this approach, the article seeks to identify key patterns in the literature, explain how bureaucratic constraints influence the implementation of port reform, and clarify the extent to which regulatory reform has contributed to improving governance in Indonesia's maritime sector.

The data used in this study consist of secondary sources, particularly peer-reviewed journal articles, academic books, policy documents, government regulations, institutional reports, and relevant publications on maritime governance and port reform. The literature was selected purposively based on its relevance to three main themes: port governance, bureaucratic challenges, and regulatory reform in the maritime sector. Priority was given to articles published in reputable international journals, particularly those indexed in major academic databases such as ScienceDirect, Taylor & Francis Online, Scopus-indexed journals, and other recognized scholarly platforms. The selection criteria included conceptual relevance, empirical focus on port or maritime governance, connection to Indonesia or comparable

maritime contexts, and contribution to the discussion of institutional reform, logistics performance, or regulatory implementation.

Data collection was conducted through a systematic search and screening of academic and policy literature. The search process used keywords such as "port governance," "maritime governance," "port reform," "bureaucratic reform," "regulatory reform," "Indonesian maritime sector," "port authority," "logistics governance," and "maritime bureaucracy." The collected literature was then screened by title, abstract, keywords, and full content to ensure its relevance to the research focus. Sources that discussed port infrastructure without addressing governance, regulation, or bureaucracy were excluded unless they provided important contextual information related to Indonesia's maritime development. This procedure ensured that the reviewed literature directly supported the analytical scope of the article.

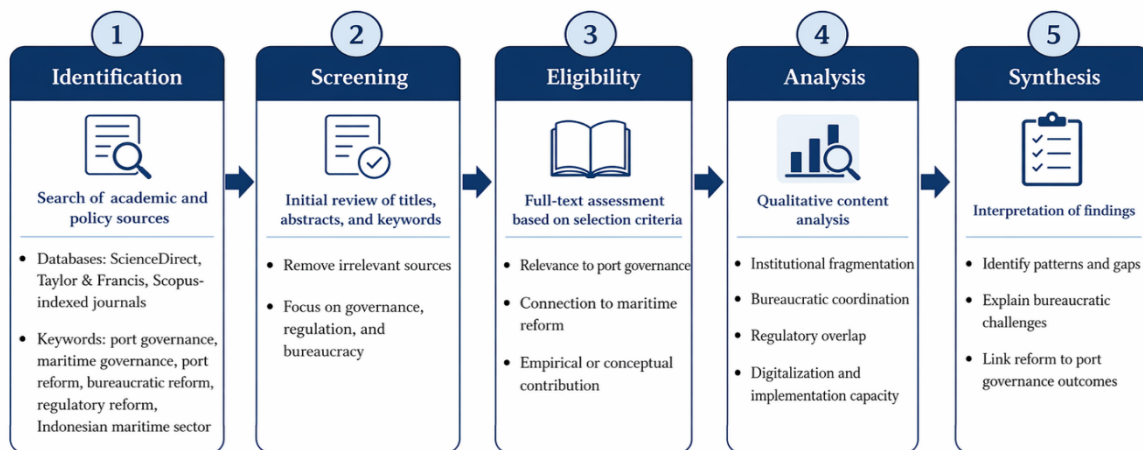


Figure 1. Literature Review Process
Source: Author, 2025

The analysis was conducted using qualitative content analysis. Each selected source was examined to identify recurring concepts, arguments, findings, and debates related to port governance and regulatory reform. The analysis focused on several analytical categories, including institutional fragmentation, bureaucratic coordination, regulatory overlap, port authority, stakeholder involvement, digitalization, logistics efficiency, and implementation capacity. These categories were used to organize the literature and develop a structured interpretation of how bureaucratic challenges affect the outcomes of regulatory reform in the Indonesian maritime sector. By comparing findings across different studies, the article identifies both common patterns and gaps in the existing literature.

RESULTS AND DISCUSSION

1. Regulatory Reform and the Institutional Structure of Indonesian Port Governance

Regulatory reform in the Indonesian maritime sector has been directed toward improving the efficiency, competitiveness, and accountability of port governance. The literature shows that port reform is not only concerned with changing legal instruments, but also with restructuring institutional relations among government agencies, port authorities, state-owned enterprises, private operators, and logistics actors. In Indonesia, this issue becomes more complex because ports operate within a multi-layered administrative system involving national regulations, sectoral ministries, regional governments, and operational institutions. As a result, the success of regulatory reform depends on whether the new regulatory framework can reduce institutional fragmentation and clarify the distribution of authority within the port governance system.

One of the main findings from the reviewed literature is that Indonesia's port governance structure continues to reflect a strong legacy of centralized control and sectoral administration. Although decentralization and reform policies have encouraged broader participation of regional and private actors, strategic decision-making in the port sector remains heavily influenced by central government authority and state-owned enterprises. This condition creates a governance pattern in which formal reform may coexist with bureaucratic rigidity. In practice, port authorities may be expected to act as regulators and facilitators, but their effectiveness is often limited by overlapping mandates, unclear coordination mechanisms, and dependence on higher-level administrative approval.

The reform of port governance also reveals tension between economic efficiency and bureaucratic control. On the one hand, regulatory reform aims to promote faster services, attract investment, improve logistics performance, and support maritime connectivity. On the other hand, bureaucratic institutions tend to preserve administrative procedures, hierarchical decision-making, and sectoral boundaries. This tension affects how port policies are implemented, particularly in relation to licensing, terminal management, tariff regulation, concession arrangements, and coordination between public and private actors. Therefore, regulatory reform must be understood as a political-administrative process rather than a purely technical adjustment.

Another important finding is that regulatory reform has encouraged the modernization of port administration, but it has not fully eliminated institutional fragmentation. Several reform initiatives have introduced digital systems, simplified procedures, and promoted integrated service mechanisms. However, the literature indicates that fragmented authority remains a major obstacle because different institutions often interpret regulations according to their own organizational interests. This creates inconsistency in implementation and reduces the predictability of port governance. In this regard, reform requires not only the issuance of new regulations, but also institutional harmonization and administrative discipline across agencies.

The relationship between regulation and institutional capacity is central to understanding the challenges of Indonesian port governance. Regulations may provide a formal framework for improving port management, but implementation depends on the capacity of institutions to coordinate, enforce, monitor, and evaluate policies. When regulatory reform is not supported by strong institutional capacity, reform may produce procedural change without substantive governance improvement. This finding confirms that port governance reform must be accompanied by bureaucratic capacity building, clear authority distribution, integrated information systems, and mechanisms for stakeholder participation.

Table 2. Regulatory Reform and Institutional Issues in Indonesian Port Governance

No.	Reform Dimension	Main Institutional Issue	Governance Implication
1	Legal and regulatory restructuring	Overlapping authority among ministries, port authorities, and state-owned enterprises	Creates uncertainty in policy implementation and slows decision-making
2	Port authority strengthening	Limited autonomy and unclear regulatory role	Reduces the effectiveness of port authorities as coordinators and regulators
3	Private sector participation	Complex licensing and concession procedures	Limits investment certainty and reduces competitiveness
4	Digital service integration	Uneven adoption across institutions and ports	Produces gaps between formal digitalization and actual service efficiency

No.	Reform Dimension	Main Institutional Issue	Governance Implication
5	Central-local coordination	Different priorities between national and regional actors	Weakens policy coherence in port development
6	Monitoring and evaluation	Limited performance-based assessment	Makes reform outcomes difficult to measure consistently

Source: Author, 2025

Overall, the discussion shows that Indonesian port governance reform must move beyond formal regulatory change. The core challenge lies in transforming the institutional structure that governs the implementation of maritime policy. Regulatory reform will have limited impact if bureaucratic institutions continue to work in fragmented ways, if authority remains unclear, and if coordination mechanisms are not strengthened. Therefore, effective port governance requires regulatory coherence, institutional integration, and administrative capacity that can translate reform objectives into measurable improvements in port performance.

2. Bureaucratic Challenges in the Implementation of Port Reform

Bureaucratic challenges represent one of the most significant obstacles in the implementation of port reform in Indonesia. The reviewed literature indicates that port reform often encounters administrative barriers related to procedural complexity, overlapping authority, limited coordination, and slow institutional adaptation. These challenges are particularly visible in licensing procedures, cargo clearance, investment approval, port service delivery, and coordination between port institutions. Although regulatory reform seeks to simplify and modernize port governance, bureaucratic practices frequently remain shaped by hierarchical decision-making and sectoral interests.

One of the most persistent bureaucratic problems is the fragmentation of authority among multiple agencies involved in port operations. Port governance requires coordination between customs, immigration, quarantine, port authorities, shipping agencies, terminal operators, local governments, and logistics providers. When these institutions operate through separate procedures and information systems, service integration becomes difficult. This fragmentation may lead to duplication of administrative requirements, delays in cargo handling, and uncertainty for business actors. Therefore, bureaucratic fragmentation is not only an internal administrative issue, but also a factor that directly affects the efficiency of maritime logistics.

The implementation of reform is also affected by differences in bureaucratic capacity across ports. Major ports with stronger infrastructure, better digital systems, and more experienced human resources are generally more capable of adopting reform initiatives. In contrast, smaller and regional ports may face difficulties in implementing standardized procedures due to limited institutional resources, weak technological capacity, and insufficient professional training. This uneven capacity creates disparities in port performance and limits the national impact of regulatory reform. As a result, reform outcomes may vary significantly between strategic ports and peripheral ports.

Another challenge concerns the persistence of procedural formalism within port bureaucracy. Regulatory reform often introduces new service standards, digital platforms, and simplified administrative procedures, but bureaucratic actors may continue to prioritize compliance with formal procedures rather than service effectiveness. This condition may weaken the transformative potential of reform because administrative routines are reproduced even within new regulatory frameworks. In such situations, digitalization may become an

additional layer of procedure rather than a tool for simplification if it is not accompanied by organizational change and accountability mechanisms.

Bureaucratic reform in the port sector therefore requires more than technical innovation. It requires changes in administrative culture, institutional incentives, human resource capacity, and inter-agency accountability. The literature suggests that successful port reform depends on the ability of bureaucratic institutions to shift from control-oriented administration toward service-oriented governance. This means that port agencies must not only enforce regulations, but also facilitate logistics flows, support investment, coordinate stakeholders, and respond adaptively to operational challenges. Without such transformation, regulatory reform may remain formalistic and fail to address the deeper causes of bureaucratic inefficiency.

Table 3. Bureaucratic Challenges and Effects on Port Reform Implementation

No.	Bureaucratic Challenge	Description	Effect on Port Governance
1	Overlapping institutional mandates	Multiple agencies have authority over related port functions	Creates duplication and weak accountability
2	Procedural complexity	Administrative requirements remain lengthy and fragmented	Slows licensing, clearance, and service delivery
3	Uneven institutional capacity	Different ports have different levels of resources and competence	Produces unequal reform implementation
4	Weak data integration	Agencies operate separate information systems	Limits transparency and coordination
5	Hierarchical decision-making	Decisions require approval from multiple administrative levels	Reduces responsiveness to operational problems
6	Formalistic compliance culture	Bureaucracy prioritizes procedure over service outcomes	Weakens the practical impact of reform

Source: Author, 2025

The findings indicate that bureaucratic challenges are central to explaining why port reform in Indonesia does not always produce immediate improvements in governance performance. Regulatory change may establish new rules, but bureaucratic institutions determine how those rules are interpreted and implemented. Therefore, the success of port reform depends on the ability to simplify procedures, strengthen coordination, improve institutional capacity, and create a more adaptive bureaucratic culture. In this sense, bureaucratic reform should be treated as an integral component of maritime regulatory reform, rather than as a separate administrative agenda.

3. Digitalization, Service Integration, and Port Performance

Digitalization has become an important instrument in the reform of Indonesian port governance. The literature shows that digital systems are increasingly used to improve transparency, reduce service delays, accelerate cargo documentation, and integrate port-related administrative processes. Digital platforms are expected to address several long-standing bureaucratic problems, particularly those related to manual procedures, fragmented data, and limited inter-agency coordination. In this context, digitalization is not merely a technological innovation, but a governance mechanism that can reshape the interaction between public institutions, port operators, logistics actors, and service users.

The implementation of digital systems in ports has the potential to improve service integration by connecting various administrative and operational functions. Through integrated platforms, information related to cargo movement, vessel arrival, customs clearance, terminal operations, and logistics documentation can be managed more efficiently. This integration may reduce duplication, improve monitoring, and increase the predictability of port services. However, the effectiveness of digitalization depends on whether institutions are willing and able to share data, harmonize procedures, and adopt common standards. Without institutional coordination, digital platforms may operate in isolation and fail to produce systemic improvement.

Digitalization also contributes to port performance by improving the speed and accuracy of decision-making. When port authorities and related agencies have access to reliable real-time data, they can respond more effectively to congestion, delays, and operational risks. This is particularly important in large and busy ports where cargo flows require continuous coordination among multiple actors. Digital systems can support performance monitoring, risk management, and resource allocation. Nevertheless, these benefits can only be achieved if digital infrastructure is supported by competent human resources, stable connectivity, and clear regulatory frameworks governing data use and institutional responsibility.

Despite its potential, digital transformation in Indonesian port governance faces several challenges. First, not all ports have equal technological readiness. Major ports may have more advanced systems, while smaller ports may still depend on manual or semi-digital procedures. Second, digitalization may encounter resistance from bureaucratic actors who are accustomed to conventional administrative routines. Third, data integration across agencies may be difficult due to institutional boundaries, cybersecurity concerns, and differences in technical standards. These challenges show that digital reform must be accompanied by organizational reform and regulatory harmonization.

The literature also suggests that digitalization should be evaluated based on governance outcomes, not only technological adoption. A port may introduce digital applications, but the key question is whether these systems reduce administrative burden, increase transparency, improve logistics efficiency, and strengthen accountability. If digital platforms simply replicate existing bureaucratic procedures in electronic form, their impact will remain limited. Therefore, successful digitalization requires redesigning business processes, simplifying procedures, clarifying institutional roles, and ensuring that digital tools are aligned with the broader objectives of port governance reform.

In conclusion, digitalization plays a strategic role in strengthening Indonesian port governance, but it cannot stand alone as a reform solution. Digital systems must be embedded within coherent regulations, integrated institutions, skilled bureaucracy, and collaborative governance mechanisms. The transformation of port services requires both technological modernization and administrative change. Therefore, digitalization should be viewed as part of a broader governance reform agenda that aims to improve service quality, reduce bureaucratic barriers, and enhance the competitiveness of Indonesia's maritime logistics system.

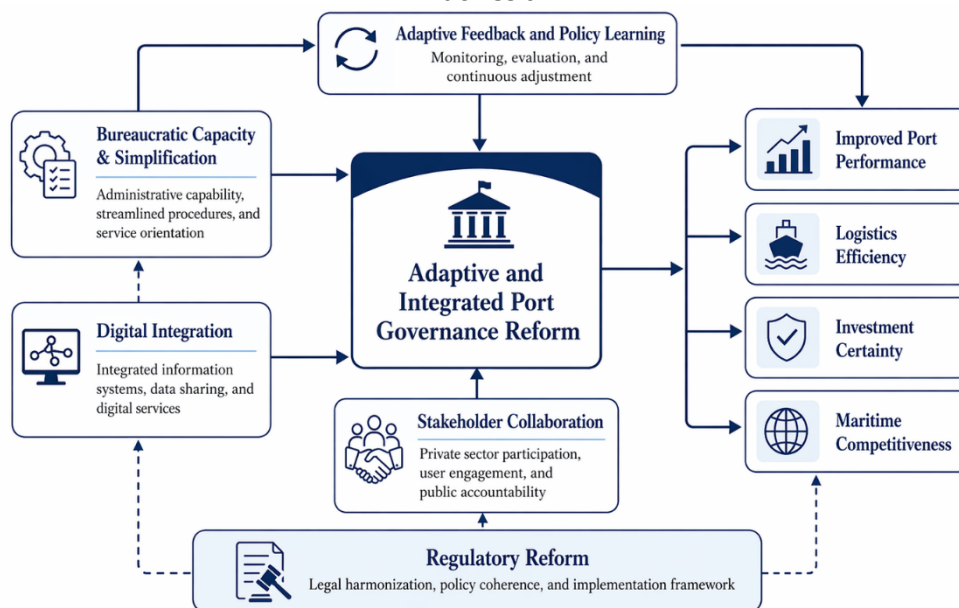
4. Toward Adaptive and Integrated Port Governance Reform

The discussion of regulatory reform, bureaucratic challenges, and digitalization leads to a broader conclusion that Indonesian port governance requires a more adaptive and integrated reform model. An adaptive governance approach is important because port systems operate in a dynamic environment shaped by global trade, technological change, investment competition, environmental pressures, and regional economic development. In such a context, rigid bureaucratic structures are insufficient to respond to complex maritime challenges. Port

governance must therefore be able to coordinate multiple actors, adjust to changing conditions, and maintain regulatory coherence across different levels of administration.

Integrated port governance requires the alignment of legal frameworks, institutional responsibilities, operational procedures, and stakeholder interests. The literature reviewed in this article indicates that many port governance problems arise because these elements are not fully synchronized. Regulations may promote efficiency, but institutions may still operate through fragmented procedures. Digital platforms may be introduced, but data sharing may remain limited. Investment policies may encourage private participation, but bureaucratic licensing may still create uncertainty. These conditions demonstrate that reform should not be implemented partially, but should be designed as an integrated transformation of the maritime governance ecosystem.

Figure 2. Conceptual Framework for Adaptive and Integrated Port Governance Reform in Indonesia



Source: Author Design from Literature Review, 2025

Adaptive and integrated governance also requires stronger coordination between central and regional actors. In Indonesia, port development often involves national strategic interests as well as local economic priorities. Central government may focus on national logistics efficiency, international competitiveness, and maritime connectivity, while regional governments may emphasize local economic development, employment, and access to transportation. These priorities are not necessarily contradictory, but they require effective coordination mechanisms. Without such mechanisms, port reform may generate policy gaps between national planning and local implementation.

Stakeholder collaboration is another important element of integrated port governance. Ports are governed not only by public institutions, but also by shipping companies, logistics providers, terminal operators, investors, local communities, and service users. A reform model that ignores stakeholder participation may fail to capture operational realities and practical constraints in the port ecosystem. Therefore, participatory governance is needed to ensure that regulatory reform reflects the needs of users, supports private sector participation, and maintains public accountability. Collaboration also helps build trust among actors, which is essential for implementing complex reform agendas.

The findings of this literature review suggest that future port reform should prioritize four interrelated strategies: regulatory harmonization, bureaucratic simplification, digital integration, and institutional capacity building. Regulatory harmonization is needed to reduce overlap and ensure coherence among maritime policies. Bureaucratic simplification is necessary to reduce administrative burden and improve service delivery. Digital integration is required to connect data, procedures, and actors within the port ecosystem. Institutional capacity building is essential to ensure that port authorities and related agencies can implement reform effectively. These strategies should be treated as mutually reinforcing components of adaptive port governance.

The proposed framework shows that regulatory reform should function as the foundation for transforming port governance, but its effectiveness depends on the interaction between bureaucratic capacity, institutional coordination, digital integration, and stakeholder collaboration. These elements collectively influence port performance, logistics efficiency, investment certainty, and maritime competitiveness. Therefore, Indonesian port governance reform must be understood as a long-term institutional transformation rather than a short-term administrative correction. By adopting an adaptive and integrated approach, Indonesia can strengthen the role of ports as strategic maritime nodes and improve the overall effectiveness of its maritime sector governance.

CONCLUSION

This article has shown that port governance in Indonesia is inseparable from the broader challenge of regulatory reform in the maritime sector. The literature indicates that port reform is not merely a matter of introducing new regulations or expanding physical infrastructure, but rather a complex process of institutional transformation involving authority distribution, bureaucratic coordination, service delivery, and stakeholder engagement. Although Indonesia has undertaken important reform efforts to improve port efficiency, logistics performance, and maritime competitiveness, the effectiveness of these reforms remains constrained by institutional fragmentation, overlapping mandates, and administrative rigidity. Consequently, the main challenge lies in ensuring that regulatory reform is translated into coherent governance practices that strengthen the overall performance of port institutions.

The discussion also demonstrates that bureaucratic capacity, digital integration, and stakeholder collaboration are central to the success of port governance reform. Bureaucratic obstacles such as procedural complexity, uneven institutional capability, and weak inter-agency coordination continue to limit the implementation of reform agendas across Indonesian ports. At the same time, digitalization offers significant opportunities to improve transparency, efficiency, and service integration, but its impact depends on organizational readiness and regulatory coherence. Therefore, the findings suggest that the improvement of port governance requires an integrated approach in which legal reform, administrative simplification, technological modernization, and institutional coordination function as mutually reinforcing components of maritime reform.

In conclusion, adaptive and integrated port governance reform is essential for strengthening Indonesia's maritime sector in a sustainable and competitive manner. Future reform should prioritize regulatory harmonization, stronger coordination between central and regional actors, capacity building for port-related institutions, and broader participation of private and public stakeholders. Such an approach will enable ports to function not only as transport infrastructures, but also as strategic governance nodes that support national connectivity, economic integration, and maritime development. Thus, the long-term success of Indonesian port reform depends on the state's ability to move beyond formal regulatory

change and build a governance system that is more responsive, collaborative, and implementation-oriented.

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