

The Application of Shipping Governance in the Management of Small E-Pas Outlet in Pangkil Village, Bintan Regency

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ABSTRACT

Indonesia's position as the world's largest archipelagic state makes small-scale fishing vessels central to mobility and coastal livelihoods, yet many traditional boats still face uneven access to legality services, safety oversight, and state support conditions that can increase operational risk and exclude fishers from entitlements such as subsidized fuel. This study investigates how shipping governance is applied through the management of a Small E-Pas (e-Pas Kecil) outlet in Pangkil Village, Bintan Regency, and assesses what the outlet's village-level implementation implies for traditional fishers. Using a qualitative, descriptive case study design, the research draws on systematic document analysis of national regulations and circulars, official institutional releases, and local media reports related to vessel measurement, registration, service delivery, and inter-agency coordination; the data were examined through thematic content analysis and coding aligned to core governance principles transparency, accountability, participation, and effectiveness supported by source triangulation. The findings indicate that the outlet has brought legality services closer to an island community by measuring and registering dozens of vessels under 7 GT, strengthening fishers' legal identity, and facilitating access to subsidized diesel and basic safety support, while also promoting more standardized risk-prevention practices. However, implementation remains constrained by limited digital literacy among fishers, reliance on a small number of trained technical staff for measurement and data entry, and fragmented data management and coordination across KSOP, KPLP, and local government agencies, which reduces the consistency and scalability of accountability mechanisms.

Keyword: Shipping Governance, Management, Small E-Pas

INTRODUCTION

Indonesia is the world's largest archipelagic state, with coastal and marine spaces shaping both its geography and its development agenda. Its territory covers around 7.1 million km², and approximately 5.4 million km² of that area is marine, indicating how strongly national welfare is tied to the sea. This immense spatial structure creates abundant opportunities in fisheries and marine-based livelihoods, while also producing complex challenges in managing mobility, safety, and state oversight across dispersed islands. For that reason, sustainable planning and management of coastal and marine areas—especially fisheries—must be strengthened by effective shipping management systems that can operate reliably in archipelagic settings (IPB, 2002).

Shipping management, however, is not a single administrative task; it is a set of interrelated functions that determine whether maritime activities remain safe, efficient, and

economically productive. Core dimensions include ship maintenance, operational management (navigation, maneuvering, and cargo handling), crew management, and administrative governance, each of which contributes to the overall performance of maritime services and oversight (Noviyanti, 2023; Wang, 2025). In coastal communities where boats are central to household production, these management dimensions are not merely technical concerns but directly affect income stability, safety at sea, and compliance with regulations. Consequently, the governance of small vessels becomes a strategic entry point for improving both local welfare and state capacity in maritime domains.

Pangkil Village, located in Teluk Bintan District, represents a coastal community with notable potential for fisheries-driven economic development. Bintan Regency has renewable marine resources supported by multiple ecosystems coral reefs, mangrove forests, seagrass beds, and other coastal habitats that provide ecological services and productive fisheries. Reported ecosystem areas include seagrass at 2,918.36 ha, mangroves at 8,895.87 ha, and coral reefs at 9,085.33 ha, illustrating the scale and diversity of the natural base that can support community livelihoods (Salahuddin et al., 2022). This ecological context makes Pangkil an important case for understanding how governance arrangements interact with everyday fishing practices and local development prospects.

In Pangkil and similar villages, small boats operated by traditional fishers function as the primary means of transportation and the core production asset for coastal households. These vessels are simultaneously tools for harvesting fish, vehicles for mobility between islands, and platforms for economic participation in local markets. Yet small boats also face persistent vulnerabilities: limited safety equipment, informal operational routines, and restricted access to formal administration. If small-vessel management is weak, fishers may experience exclusion from state services, difficulties in accessing subsidies, and heightened risk during adverse weather or operational emergencies.

Recognizing these issues, the government has introduced innovations aimed at improving the legality and governance of small vessels. One notable initiative is the Small E-Pas outlet, which supports the issuance of Small E-Pas as an electronic vessel registration certificate for vessels with 1–6 GT, aligned with policy directions on digitizing Pas Kecil for vessels under 7 GT (Dikapel, 2021; Dephub, 2023). As a legal identity instrument, E-Pas is designed to replace older paper-based nationality certificates with digital cards that are more durable, easier to verify, and potentially more interoperable with other administrative systems (Thenniarti, 2022; Dephub, 2024). In practice, the state extends service delivery through mobile or temporary outlets in coastal villages, reflecting an effort to reduce distance barriers and bring maritime administration closer to fishing communities.

Institutionally, E-Pas is issued through Port Authority and Harbor Master's Offices (KSOP), which act as key nodes in the shipping governance structure. The use of village-based outlets indicates a shift toward service decentralization at the operational level, even when regulatory frameworks remain nationally defined. This approach has a governance logic: when legality services are accessible, compliance costs for small-scale operators decline, and the state's capacity for monitoring and supervision can improve. In archipelagic regions, where formal offices may be geographically distant, such outreach mechanisms can become critical determinants of whether rules are widely adopted or remain purely formal requirements.

In Pangkil Village specifically, the Small E-Pas outlet is intended not only to simplify legality administration, but also to strengthen shipping safety, improve supervision, and support access to subsidized fuel. Local reporting indicates that dozens of vessels under 7 GT have been measured and registered through joint activities involving KSOP Tanjungpinang, KPLP Tanjunguban, and local government actors, with the E-Pas card functioning both as a nationality certificate and as a requirement for obtaining subsidized diesel fuel (Kepri, 2025; Laleng, 2025). This linkage between documentation and subsidy access suggests that vessel

legalization is not merely a regulatory endpoint, but also a gateway to economic entitlements and a lever for improving rule compliance. At the same time, it underscores the sensitivity of administrative systems: if access is uneven or procedures are unclear, fishers may face new exclusions even as reforms aim to be inclusive.

The Pangkil case also sits within broader debates on small-scale fisheries governance in Indonesia. Research on marine tenure and small-scale fisheries emphasizes that vessels below 10 GT dominate coastal livelihoods and contribute substantially to national catches, yet often operate in governance contexts where rights, responsibilities, and institutional coordination remain fragmented (Marine Tenure & Small-Scale Fisheries, 2018; Halim et al., 2019). Comparative studies in other island regencies highlight recurring implementation gaps between national regulations and local capacity, particularly in remote coastal communities where administrative resources are limited and institutional coordination is challenging (Amirullah et al., 2021; Zhang et al., 2025). International scholarship on community-based and co-managed small-scale fisheries in the Pacific and parts of Asia further demonstrates that legitimacy and enforceability often depend on participatory arrangements and institutional designs adapted to local social realities (Cohen et al., 2015; Digital Fisheries – Commonwealth Asia, 2022).

Alongside governance reforms, digitalization has become a major trend in fisheries and maritime administration. Indonesia's experience with platforms such as e-PIT shows that digital tools can enhance data accuracy, transparency, and operational efficiency, while also confronting constraints related to infrastructure readiness, digital literacy, and inter-agency coordination (Suherman et al., 2025). Evidence from other jurisdictions regarding electronic logbooks, vessel monitoring systems, and digital licensing suggests that digital transformation can strengthen accountability and oversight, but may also reproduce inequalities when small-scale operators face adoption barriers such as limited connectivity, low device access, or insufficient support services (Aguión et al., 2022). This creates a central policy tension: digital reforms promise inclusion and efficiency, yet can inadvertently widen gaps if "last-mile" implementation is not designed around the realities of small-scale users.

Table 1. Governance Dimensions and Operational Indicators of the Small E-Pas Outlet in Pangkil Village

Governance Dimension	Operational Focus at Village Level	Example Indicators (Observable in the Field)	Main Actors Involved	Expected Outputs
Transparency	Service information and requirements are clearly communicated	Public announcements; clear SOP/requirements; open list of fees (if any); accessible schedule of outlet services	KSOP, village officials, local facilitators	Fishers understand procedures and required documents
Accountability	Clear roles, responsibilities, and documentation	Written assignment letters; measurement records; registration logs; complaint/feedback mechanism	KSOP, KPLP, local government	Traceable decisions and verifiable service processes
Participation	Inclusion of fishers in	Fisher meetings; participatory data collection; community	Fishers, village	Higher compliance and stronger

Governance Dimension	Operational Focus at Village Level	Example Indicators (Observable in the Field)	Main Actors Involved	Expected Outputs
	outreach and service delivery	representatives assisting verification	leaders, KSOP team	program legitimacy
Effectiveness	Services delivered on time with measurable results	Number of vessels measured/registered; completion rate; reduced processing time	KSOP, KPLP, village officials	Increased E-Pas ownership and smoother administrative access
Safety Orientation	Integration of safety checks and awareness	Basic safety briefings; inspection of minimum safety equipment; safety campaign materials	KSOP, KPLP, community groups	Improved safety awareness and reduced operational risks
Equity & Access	Services reach remote/low-capacity users	Mobile/temporary outlet locations; assistance for low-literacy users; flexible service hours	KSOP, village government, facilitators	Reduced access barriers and more inclusive coverage

Source: Author, 2025

Despite this expanding literature, existing studies and official narratives often emphasize the technical features of E-Pas Kecil system specifications, coverage figures, or safety campaigns rather than explaining how governance principles operate in village-level practice. There remains limited empirical work that connects field processes such as outreach, vessel measurement, data handling, and coordination among agencies with good governance concepts like transparency, accountability, participation, responsiveness, and effectiveness in the context of small island communities. This gap matters because the success of reforms is frequently determined not by formal policy design alone, but by how rules are communicated, negotiated, and implemented in everyday interactions between fishers and institutions. Understanding the "how" of local implementation is therefore essential to evaluate whether E-Pas outlets genuinely support inclusive governance or simply repackage administrative requirements in digital form.

Based on this background, the present article analyzes the application of shipping governance in managing the Small E-Pas outlet in Pangkil Village, Bintan Regency. The study focuses on three interrelated questions: (1) how the outlet contributes to strengthening legal identity, access to subsidies, and safety for traditional fishers; (2) what institutional arrangements and coordination mechanisms underpin its implementation; and (3) to what extent governance practices observed in Pangkil reflect good governance principles in shipping management. By placing the Pangkil experience within national and international discussions on small-scale fisheries governance and digitalization, this article aims to show how village-level experimentation with E-Pas Kecil can generate lessons for building more inclusive, accountable, and effective shipping governance across Indonesia's archipelagic regions.

METHODOLOGY

This study employs a qualitative research design with a descriptive case study approach. Case study research explores a bounded system or multiple systems over time in depth, using detailed data collection from various sources of information (Creswell, 2015).

The case examined here is the management of the Small E-Pas outlet in Pangkil Village, Bintan Regency, viewed from the perspective of shipping governance implementation. The research relies on document-based data. Data were collected through a structured review of: (1) regulations and circular letters of the Ministry of Transportation and the Directorate General of Sea Transportation concerning Small E-Pas and vessel registration for ships under 7 GT; (2) official press releases and news on the opening of national and local Small E-Pas outlets, particularly those linked to Bintan Regency and Pangkil Village; (3) local media coverage documenting vessel measurement activities, the distribution of E-Pas cards and life jackets, and statements from KSOP, KPLP, local government, and fishers; and (4) scholarly literature on small-scale fisheries governance, digitalization of vessel documentation, and maritime safety campaigns relevant to the Indonesian and broader coastal context.

Data analysis was conducted through qualitative content analysis and thematic coding. First, all documents were read to identify segments of information related to: (a) legal identity and registration of small vessels; (b) access to fuel subsidies and other state support; (c) safety education and risk reduction; (d) institutional coordination and capacity; and (e) community responses, readiness, and participation. Second, these segments were coded and grouped under thematic categories that reflect good governance principles, namely transparency, accountability, participation, and effectiveness. Third, patterns and tensions were interpreted by linking empirical observations from Pangkil with insights from comparative studies on small-scale fisheries and digital transformation in coastal and island regions.

Data credibility was strengthened through source triangulation by comparing information across regulatory documents, official releases, local media reports, and academic sources. Where possible, quantitative information reported in different sources (such as the number of vessels measured or E-Pas cards issued) was cross-checked to ensure consistency. Although the study does not involve primary interviews or field observation, the systematic use of multiple documentary sources allows for a sufficiently rich description of governance practices at the Small E-Pas outlet in Pangkil Village and their implications for coastal communities.

RESULTS AND DISCUSSION

1. Legal Identity and Access to Subsidized Fuel

The establishment of a Small E-Pas outlet in Pangkil Village has directly affected the legal identity of small fishing vessels. Reports from KPLP Tanjunguban and KSOP Tanjungpinang show that around 80–90 vessels under 7 GT in Pangkil were measured and processed for E-Pas Kecil during outreach activities, with some reports mentioning 86 vessels measured and others 107 cards issued as part of safety and legality campaigns in the village (Kepri, 2025; Laleng, 2025). These figures indicate a substantial increase in the proportion of local fishing vessels that hold official electronic nationality certificates compared to conditions before the outlet was opened, when many traditional boats operated only with informal recognition at the village level.

From a governance perspective, the legalization of these vessels operationalizes the principle of effectiveness because the outlet brings state services closer to island communities and reduces transaction costs for fishers who previously had to travel to more distant ports. It also strengthens transparency, as procedures, required documents, and the fact that the service is free of charge for eligible small vessels are clearly communicated through socialization events, banners, and direct explanations by officers during the outlet's operation (Dephub, 2024; Maritimnews, 2022). Fishers obtain more concrete information about what E-Pas Kecil is, why it is required, and what rights and obligations it entails.

Legal identity through E-Pas Kecil is closely linked to access to subsidized fuel. Official statements and local news emphasize that the E-Pas card functions as an administrative

requirement for obtaining subsidized diesel at designated fuel stations, and that one of the main incentives for fishers to register their vessels is precisely the easier access to subsidized fuel (Laleng, 2025; KPLP Pangkil coverage). Testimonies from fishers in Pangkil describe how the card shortens the process of proving eligibility and reduces uncertainty when purchasing subsidized fuel. In turn, this supports the livelihoods of small-scale fishers whose operational costs are highly sensitive to fuel prices.

This linkage between legality and subsidies reflects the accountability dimension of governance, as the state can better track which vessels receive subsidized fuel and under what conditions. It also aligns with broader experiences in small-scale fisheries governance, where clear identification of vessels and fishers is considered essential to avoid leakages in subsidies and to design more equitable support schemes (Halim et al., 2019; Amirullah et al., 2021). In Pangkil, however, the implementation is still evolving: the extent to which E-Pas data are integrated with other subsidy databases (such as regional fuel quota systems) remains limited, indicating that the accountability potential of the system has not yet been fully realized.

2. Safety Culture and Risk Reduction

Beyond legality and subsidies, the Pangkil outlet is part of a broader campaign to build a culture of maritime safety. The Directorate General of Sea Transportation has repeatedly linked E-Pas Kecil outreach in Pangkil with the distribution of life jackets and safety education sessions, in which hundreds of life jackets and more than one hundred E-Pas cards were handed over in a single event (Dephub, 2025). These activities take place in a context where coastal transport in Pangkil and the surrounding islands is dominated by small wooden boats and traditional fishing vessels, which are highly exposed to weather and sea conditions.

The distribution of safety equipment and the emphasis on checking vessel seaworthiness during measurement translate the governance principle of responsibility into concrete practices. Officers from KSOP, KPLP, and other maritime institutions use the outlet moment not only to collect data and issue documents, but also to communicate safety rules, maximum passenger loads, and appropriate use of life jackets. This is consistent with international experiences, where digitalization of vessel documentation and registration is often combined with enhanced safety protocols and monitoring systems to reduce accidents and support more resilient coastal communities (Suherman et al., 2025; Aguión et al., 2022).

In Pangkil, safety campaigns are also tied to the participation principle. Socialization sessions involve village government, fishers' representatives, and local leaders, who are encouraged to convey safety messages to their communities. Local authorities express support for making safety education a routine component of coastal governance, especially in anticipation of extreme weather and high waves during certain seasons. However, the continuity of such efforts remains a concern: most documented activities take the form of periodic campaigns or national events, and there is less evidence of institutionalized, routine training or local regulations that enforce safety standards on a day-to-day basis. The Pangkil case thus illustrates both the strengths and limits of safety-focused interventions that are attached to digital documentation programs. On the one hand, the combination of E-Pas issuance and life jacket distribution offers a visible and tangible improvement for fishers.

3. Institutional Coordination and Capacity Constraints

The implementation of the Small E-Pas outlet in Pangkil involves multiple institutions: the Directorate General of Sea Transportation, KSOP Tanjungpinang, KPLP Tanjunguban, various navigation and port units, as well as local government bodies such as the Bintan Regency Government, the Department of Transportation, the Department of Marine Affairs and Fisheries, and the village government (Dephub, 2025; Kepri, 2025). This multi-actor

configuration reflects the complexity of shipping governance in archipelagic settings, where competencies and responsibilities are distributed across central and local agencies.

In practice, this arrangement raises concrete coordination challenges. First, data about small vessels are collected, stored, and reported through different channels. E-Pas data are managed in the national E-Pas Kecil information system, while other datasets (such as local fisheries licensing, fuel subsidy quotas, and household-level socio-economic data) are administered by different agencies with their own formats and procedures. As highlighted in studies of digital fisheries governance in Indonesia, fragmented data systems tend to undermine the potential benefits of digitalization by creating parallel databases that cannot be easily integrated for policy-making (Suherman et al., 2025).

Second, there are capacity constraints in terms of human resources. Vessel measurement and E-Pas registration depend on a limited number of trained surveyors and system operators who must cover multiple islands and districts. In Pangkil, media reports describe how officers travel from Tanjunguban and Tanjungpinang to conduct measurements and registrations within a tight schedule, often processing several dozen vessels in a single day (Laleng, 2025). While this demonstrates efficiency, it also means that follow-up services, corrections, or new registrations may face delays if there are no permanent staff or equipment stationed in the village.

From a governance standpoint, these coordination and capacity issues relate to the principle of effectiveness and to the broader literature on small-scale fisheries governance, which emphasizes the need to align the scale of institutions with the scale of resources and users (Aguión et al., 2022). In Pangkil, the scale of service delivery is still largely determined by national and regional agencies, with relatively limited institutionalization at the village level beyond the role of facilitating outreach events. This creates a situation where local actors are highly dependent on episodic visits by central agencies for key governance functions.

At the same time, there are signs of emerging accountability mechanisms through coordination. Data on registered vessels and safety campaigns are reported to the Bintan Regency Government and relevant local offices as part of their legal oversight responsibilities (Hariankepri, 2025). This creates opportunities for cross-checking between national and local records. However, without a fully integrated digital governance architecture connecting E-Pas Kecil with other systems (such as fisheries licensing and e-logbook platforms), accountability remains partial and focused on administrative compliance rather than on broader performance indicators for safety, service quality, or equity of access.

4. Community Responses, Participation, and Digital Readiness

Community responses in Pangkil show a mixture of enthusiasm and adaptation challenges. Local reports describe high levels of participation by fishers in vessel measurement and E-Pas registration, including additional fishers who arrived beyond the initial list and were still accommodated by officers on the condition that they complete their documents later (Hariankepri, 2025). Fishers interviewed by local media express appreciation for the fact that their vessels now have formal legal status and that access to subsidized fuel has become easier (Laleng, 2025; Gotvnews, 2025). This indicates that the Small E-Pas outlet successfully taps into concrete incentives that matter for fishers' daily lives, which is a critical factor for participatory governance.

However, the Pangkil case also highlights issues of digital readiness. Although the E-Pas system is digital, most fishers still rely on face-to-face interactions and assistance from officers to complete registration, measurement, and data entry. Documents are often prepared in physical form and then digitized by staff. This pattern reflects broader findings in the literature on digital transformation in small-scale fisheries, which point to limited digital literacy, infrastructure gaps, and socio-economic constraints as major barriers to the effective

adoption and appropriation of digital tools by coastal communities (Suherman et al., 2025; Digital Fisheries – Commonwealth Asia, 2022).

In this context, the governance principle of transparency acquires a specific meaning. Transparency should not only be understood as making procedures and information publicly available, but also as communicating them in accessible formats and through channels that match local capacities. In Pangkil, socialization through village meetings and direct explanations by officers is more effective than relying solely on online platforms or written guidelines. At the same time, this reliance on interpersonal communication makes the system vulnerable to misunderstandings or inconsistent interpretations if socialization is not repeated regularly or if key individuals move away.

The Pangkil experience thus confirms insights from comparative studies that stress the importance of co-design, iterative engagement, and supportive policies to make digital governance initiatives truly inclusive for small-scale fishers (Wiranti et al., 2025; Suherman et al., 2025). Community participation cannot be reduced to attending one-off outreach events; it must be embedded in ongoing dialogues where fishers can provide feedback on service quality, suggest improvements, and influence the evolution of governance arrangements.

CONCLUSION

The implementation of shipping governance through the Small E-Pas outlet in Pangkil Village has made a tangible contribution to improving the legality and safety of small vessels operated by traditional fishers. By bringing vessel measurement and registration services directly to the village, the outlet has enabled a significant number of boats under 7 GT to obtain formal electronic nationality certificates, which in turn facilitate access to subsidized fuel and provide clearer legal protection at sea. The combination of E-Pas issuance with the distribution of life jackets and safety education has also helped strengthen a culture of maritime safety in an island context where daily mobility and livelihoods depend on small boats.

At the same time, the Pangkil case reveals specific governance challenges. Limited digital literacy among fishers, dependence on a small number of technical officers, fragmented data systems across institutions, and the episodic nature of outreach activities mean that the potential of E-Pas Kecil to fully embody the principles of transparency, accountability, participation, and effectiveness has not yet been fully realized. Shipping governance in Pangkil remains characterized by a strong reliance on central agencies for key functions, with local actors mainly playing facilitative roles during campaigns rather than exercising continuous governance responsibilities.

These findings carry several policy implications. For the Ministry of Transportation and the Directorate General of Sea Transportation, it is important to move beyond one-off outreach and to design sustained programs for village-level engagement. This includes planning regular E-Pas Kecil service visits, investing in additional surveyors and digital operators dedicated to archipelagic areas, and developing training modules that combine safety education with practical guidance on digital documentation. Policy-makers should also prioritize the development of integrated data systems that connect E-Pas Kecil registries with other sectoral databases, such as fisheries licensing, fuel subsidy management, and e-logbook or catch reporting platforms, so that information collected in Pangkil and similar villages can support more comprehensive and evidence-based governance.

For KSOP and KPLP, the Pangkil experience suggests the need to formalize collaborative forums with local governments, village administrations, and fisher representatives. These forums can be used to monitor service performance (for example, processing times and coverage), discuss problems encountered in the field (such as data discrepancies or difficulties in accessing services), and co-design improvements that are

sensitive to local conditions. Establishing accessible complaint and feedback mechanisms, either through village offices or simple digital channels, would also strengthen accountability and give fishers a clearer role in shaping the evolution of E-Pas-related services.

For local governments in Bintan and Pangkil Village, incorporating E-Pas Kecil and maritime safety into their regular development planning is essential. This can take the form of budget allocations for supporting socialization, providing complementary infrastructure (for example, basic IT equipment in village offices), or integrating data from E-Pas Kecil into local poverty, livelihood, and disaster risk profiles. Aligning village-level governance with national shipping policies can help ensure that legal identity, safety, and access to subsidies for fishers are not treated as temporary projects but as core elements of coastal welfare strategies.

Finally, this study opens avenues for future research. Comparative case studies with other islands and coastal villages where E-Pas Kecil has been implemented would help clarify how different socio-economic contexts and institutional arrangements influence governance outcomes. Quantitative surveys of fishers' perceptions could generate more systematic evidence on how they experience transparency, accountability, and service effectiveness in E-Pas-related processes. Further work could also examine the cost-benefit dimensions of E-Pas Kecil for both the state and fishers, exploring whether and how digital vessel documentation can contribute to more sustainable and just coastal development in the long term.

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