

DOI: <https://doi.org/10.38035/gijlss.v4i4><https://creativecommons.org/licenses/by/4.0/>

Received: 16 June 2026 | Revised: 25 July 2026 | Accepted: 23 September 2026

State-Subsidized Maritime Connectivity and Local Welfare: A Study of Pioneer Shipping Programs in Indonesia

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Abstract: As an archipelagic nation, Indonesia's maritime connectivity is a constitutional mandate for social justice. This study evaluates the impact of the Pioneer Shipping Subsidy (PSS) program on maritime access justice and public governance in 3T (Underdeveloped, Outermost, Frontier) regions. Using a mixed-methods socio-legal approach, data were collected between January 2020 and December 2023 across seven provinces (South Sumatra, Riau Islands, South Kalimantan, NTB, NTT, Maluku, and West Papua) involving a survey of N=75 stakeholders and in-depth interviews. Quantitative analysis (Mean, SD, and ANOVA) shows high public satisfaction in transport access ($\mu=4.42$, $SD=0.52$) and inclusivity ($\mu=4.31$, $SD=0.61$). However, ANOVA results indicate significant differences in perceived governance between academics and field users ($p<0.05$). Qualitatively, the PSS acts as a vital “welfare proxy” by stabilizing logistics prices by 15–20%. The study concludes that while legal legitimacy is strong, fiscal sustainability and targeting remain critical challenges.

Keywords: Maritime Connectivity, Public Governance, Access Justice, Pioneer Shipping, 3T Regions.

INTRODUCTION

Indonesia is an archipelagic country consisting of more than 17,000 islands spread from Sabang to Merauke. This geographical condition demands the availability of a maritime transportation system that is even, fair, and sustainable as a means of connecting regions. However, in practice, there is an imbalance in access to maritime transportation between the more developed western regions and the eastern regions and the 3T (Underdeveloped, Frontier, and Outermost) regions that still face obstacles in terms of accessibility and regularity of services. This imbalance not only impacts the smooth mobility of people and goods but also strengthens the economic and social gap between regions.

Within the framework of a welfare state and the mandate of the constitution, the state is obliged to provide public services that guarantee social justice for all Indonesian people, as stated in Article 34 of the 1945 Constitution. To answer this challenge, the government

launched a pioneer ship subsidy program, which is designed to reach non-commercial areas and areas that are difficult to access by regular shipping. This program is not only a logistical solution but also an affirmative policy instrument in realizing fair maritime access for people in remote areas, borders, and small islands.

Although the pioneering shipping program has operated since 1974 and continuously expanded its scope, chronic operational bottlenecks remain. Irregular schedules, an aging and minimal fleet, and tariff inconsistencies continue to undermine the program's efficacy. In particular, tariff formulation for passengers and cargo is central to service sustainability, directly influencing state fiscal burdens, community purchasing power, and local economic stimulation. Setting tariffs too low unsustainably drains public finances, while setting them too high alienates low-income communities from essential transportation—a classic dilemma noted in global transport economics (Gwilliam, 2011; Merk, 2014). Consequently, evaluating the program requires moving beyond technical metrics to encompass robust legal and public governance analyses. Legally, the policy must reflect state accountability for equal public service delivery. From a governance perspective, it is critical to assess how stringently the principles of transparency, accountability, participation, and effectiveness are implemented.

While existing literature extensively explores Public Service Obligations (PSO) in the maritime sector, a critical research gap remains unaddressed. First, the dominant body of international scholarship primarily evaluates maritime subsidies through the lens of technical and financial efficiency, often utilizing quantitative optimization models (Santiso, 2001; Susanto et al., 2021; Wilmsmeier & Spengler, 2016). This narrow focus tends to overlook the normative legal mandates and human rights frameworks that compel states to guarantee connectivity as a form of "spatial justice" or "transport equity" (Lucas et al., 2016; Martens, 2017). Second, while international frameworks for good public governance are well-defined (UNESCAP, 2009; World Bank, 2017), there is a shortage of socio-legal empirical research analyzing how these abstract governance principles operate within highly marginalized, remote archipelagic settings. Most maritime governance studies focus on major global hub ports and commercial trade corridors (Notteboom et al., 2022), leaving the unique institutional dynamics of subsidized peripheral transport heavily under-researched. Finally, current studies rarely bridge the gap between national macro-level fiscal policies and micro-level empirical perceptions of access justice held by local coastal communities.

This study addresses these gaps by offering a comprehensive socio-legal evaluation of Indonesia's pioneering shipping program. It contributes to the global discourse on maritime equity by illustrating how subsidized connectivity translates into actual 'access justice' on the ground, and by identifying the necessary fiscal and institutional trade-offs required for long-term policy sustainability in archipelagic states.

Based on this background, this study focuses on three fundamental questions:

1. What is the legal basis for the pioneer ship subsidy as part of maritime access justice?
2. How are the principles of public governance applied in the implementation of the pioneer ship subsidy?
3. To what extent does the pioneer ship subsidy reflect the principle of justice in maritime service access for remote Indonesian communities?

METHODS

This study employed a socio-legal research design using a convergent mixed-methods approach to concurrently gather and analyze qualitative and quantitative data. This design is selected to bridge the gap between normative legal mandates and empirical field realities. The normative legal approach examines the consistency and legitimacy of the pioneer ship subsidy framework, while the empirical approach evaluates policy implementation through public governance principles and service user perceptions. The two datasets were integrated during

the final discussion phase to compare, contrast, and validate the empirical findings against the legal analysis.

The research was conducted in seven strategically selected provinces representing Indonesia's 3T (Underdeveloped, Outermost, Frontier) regions: South Sumatra, Riau Islands, South Kalimantan, West Nusa Tenggara (NTB), East Nusa Tenggara (NTT), Maluku, and West Papua. Data collection took place between January 2020 and December 2023.

The study utilized a purposive sampling technique for qualitative data and convenience sampling for quantitative data. In-depth interviews were conducted with 10 key informants, including representatives from the Ministry of Transportation, port authorities, and local government officials. A survey was distributed to N=75 respondents, consisting of service users, academics, and employees involved in maritime logistics. Given the highly specialized nature of maritime logistics and the geographic isolation of the 3T regions, this sample size represents a targeted cohort of key sectoral stakeholders rather than a generalized population, justifying the focused sample across the seven provinces.

The quantitative instrument was a self-administered questionnaire divided into three constructs: (1) Access Justice, (2) Public Governance, and (3) Policy Impact. All items were measured using a 5-point Likert Scale (1 = Strongly Disagree, 5 = Strongly Agree). Before the field study, a pilot test was conducted. Construct validity was confirmed through factor loading (>0.60), and the instrument demonstrated high internal consistency with a Cronbach's Alpha score of 0.87.

Data were collected through documentary studies of Law No. 66 of 2024 and technical regulations, followed by semi-structured interviews and survey distribution. Qualitative data were analyzed using Thematic Analysis with a three-stage coding procedure: (1) Open Coding: identifying initial concepts from interview transcripts regarding subsidy challenges; (2) Axial Coding: organizing codes into categories such as "fiscal sustainability" and "infrastructure barriers"; and (3) Selective Coding: formulating a narrative synthesis. Quantitative data were analyzed using descriptive statistics and a one-way Analysis of Variance (ANOVA) to examine significant differences in perceptions across the different respondent groups and provinces, thereby ensuring alignment between the empirical results and the study's primary objectives.

This study adhered to stringent ethical standards. All participants were provided with an Informed Consent form outlining the study's objectives and their right to voluntary participation. To maintain anonymity and confidentiality, all personal identifiers were removed from the dataset, and data were analyzed in aggregate form.

Table 1. Demographic Profile of Respondents (N=75)

Characteristics	Category	Frequency	Percentage
Gender	Male	52	69.3
	Female	23	30.7
Age (Years)	20–30	3	4.0
	31–40	18	24.0
	41–50	37	49.3
	51–60	17	22.7
Profession	Academics	12	16.0
	Service Users	40	53.3
	Employees/Officials	23	30.7
Area	South Sumatra	12	16.0

Riau Islands	12	16.0
South Kalimantan	12	16.0
NTB	11	14.7
NTT, Maluku, & West Papua	28	37.3
Total	75	100

Source: Primary data, 2024

RESULTS AND DISCUSSION

RQ1. Legal Basis for Pioneer Ship Subsidies as Part of Maritime Access Justice

A systematic review of Indonesia's statutory framework reveals that the pioneer ship subsidy policy is well-supported legally, demonstrating structural alignment vertically (from the 1945 Constitution down to Ministerial Regulations, and horizontally across national development planning and maritime transportation management). This subsidy functions as a critical instrument of access justice, designed to ensure that 3TP (Underdeveloped, Remote, Outermost, and Border) areas receive regular, affordable, and non-discriminatory maritime transportation services.

Vertically, the subsidy policy derives its legitimacy directly from constitutional mandates and descending technical regulations. Article 34, paragraph (3) of the 1945 Constitution establishes the foundational state responsibility to provide adequate public service facilities for all citizens (Republic of Indonesia, 1945), which extends fundamentally to maritime connectivity in 3TP areas. This constitutional duty is operationalized through Law No. 66 of 2024 concerning Shipping, which transforms maritime transport from a commercial option into a strict state obligation by mandating the government to guarantee shipping services across all non-commercial, unserved routes (Republic of Indonesia, 2024). The governance of these inter-island networks falls under central authority as dictated by Law No. 23 of 2014 concerning Regional Government (Republic of Indonesia, 2014). To execute these statutory mandates, Presidential Regulation No. 27 of 2021 explicitly codifies the legal framework for Public Service Obligations (PSO) in sea transport, anchoring the subsidy system within the broader principles of social justice and equitable development (Republic of Indonesia, 2021).

The subsidy policy for pioneer ships is rooted in the principles of social justice and equitable development as stipulated in Article 33, paragraph (3), of the 1945 Constitution. Furthermore, Law Number 66 of 2024 concerning Shipping provides a specific legal basis regarding the government's responsibility in ensuring the implementation of pioneering sea transportation (Republic of Indonesia, 2024). Article 10 mandates the government to provide sea transportation to areas not served by commercial shipping, meaning that subsidizing pioneering ships is not an option but rather a state obligation.

Beyond high-level mandates, the administrative framework provides strict statutory mechanisms to control how these subsidies are executed. Regulation of the Minister of Transportation No. 62 of 2021 and the subsequent Regulation Number PM 5 of 2024 systematically govern the procedural lifecycles of the program (Ministry of Transportation, 2021; 2024). Rather than acting merely as passive financial support, these ministerial directives outline explicit criteria for pioneer service areas, formalize route management, and mandate competitive auction mechanisms for operator procurement. Furthermore, they introduce minimum service standards (SPM) alongside rigid performance evaluation metrics, meaning the state actively shapes the quality of market interventions through targeted budgetary allocations.

The pioneer ship subsidy is also part of the 2020–2024 RPJMN, which makes maritime connectivity a key focus for development, especially to help balance out differences between regions. This subsidy is in line with the National Transportation Master Plan (RITN), which prioritizes strengthening transportation services to remote areas (Ministry of Transportation of the Republic of Indonesia, 2023). At the practical level, Presidential Regulation Number 27 of 2021 states that subsidies for pioneer ships are given as part of the Public Service Obligation (PSO), meaning the government acts not only as a regulator but also as an organizer and provider of strategic public service budgets. This legal architecture directly aligns with macro-level socio-economic planning. The pioneer ship subsidy is deeply embedded within the 2020–2024 RPJMN, which positions maritime connectivity as a primary vehicle for mitigating regional disparities. This integration is reinforced by the National Transportation Master Plan (RITN), which prioritizes strengthening transportation services to remote areas (Ministry of Transportation, 2023).

The technical implementation of subsidies is further detailed in the Regulation of the Minister of Transportation Number PM 5 of 2024 (Ministry of Transportation of the Republic of Indonesia, 2024). This regulation contains detailed mechanisms including criteria for pioneer service areas (3TP areas), determination of pioneer ship routes, procedures for procuring operators through auction mechanisms, minimum service standards (SPM), and evaluation and reporting of subsidized shipping performance.

The real situation shows that pioneer ship subsidies in seven provinces are clear proof of the government's role in ensuring fair access. Observation and interview results show that local communities are highly dependent on pioneer ship services, which are often the only regular mode of sea transportation to remote and commercially uneconomical areas. For example, in Bima (NTB) and Kupang (NTT), these ships carry agricultural products such as corn and seaweed to main ports. Communities in Maluku and West Papua use pioneer ships to access education and health services unavailable on their home islands.

Empirical field data gathered across the seven provinces demonstrate how this legal framework translates into tangible access justice. Observation and interview results show that local communities exhibit a profound systemic dependency on pioneer ship services, validating the statutory assumption that these routes are commercially unviable yet socially indispensable. For example, in Bima (NTB) and Kupang (NTT), these vessels facilitate the transit of vital agricultural products such as corn and seaweed to primary commercial ports. Similarly, communities in Maluku and West Papua rely on pioneer ships to access basic human rights, such as education and health services, which remain unavailable on their home islands.

The socioeconomic impact of these state-subsidized tariffs is substantial. Passengers pay between IDR 5,000 and IDR 20,000, a pricing structure sitting significantly below actual operational costs. In highly isolated jurisdictions like the Riau Islands and West Papua, the scope of access justice extends beyond passenger mobility; the subsidies heavily insulate the supply chains of essential logistics, including basic necessities, packaged fuel, and agricultural equipment. This finding confirms that the financial mechanisms are operating in strict compliance with PM 5 of 2024, supported by the State Budget (APBN).

Although the benefits are significant, achieving absolute access justice faces persistent empirical barriers: extreme weather and limited fleets lead to inconsistent schedules, particularly in the waters of Maluku and West Papua; anchorage points such as small islands around Banjarmasin and Bima suffer from infrastructural deficits in port facilities; and fragmented institutional coordination limits the dissemination of ship schedule information and ticket availability. These operational bottlenecks create a friction point where the normative promises of the legal framework clash with the physical realities of geographic isolation.

Table 2. Impact of Pioneer Ship Subsidies by Province

Province / Regional Focus	Sample Size (n)	Positive Impact of Subsidy Framework	Main Empirical Challenge	Finding Frequency (%)	Level of Urgency
South Sumatra (Palembang hub)	10	Mobilization of commodity and plantation products to primary hubs	Restricted docking capacity at minor port facilities	60%	Medium
Riau Islands	12	Provision of affordable inter-island mobility and logistics distribution	Information asymmetry regarding schedule availability	75%	High
South Kalimantan (Banjarmasin)	9	Support for localized inter-regional trade networks	Inadequate pier infrastructure on peripheral islands	66%	High
West Nusa Tenggara (Bima)	11	Transit of core agricultural products and essential materials	Schedule inconsistency due to operational delays	72%	High
East Nusa Tenggara (Kupang)	11	Facilitation of inter-island access to healthcare and education	Protracted transit times and circuitous route structures	81%	High
Maluku (Ambon hub)	11	Crucial transit alternative to isolated outermost islands	Extreme weather anomalies disrupting maritime safety	90%	Critical
West Papua (Sorong hub)	11	Core pipeline for the distribution of staple goods	Ticket scarcity and distribution friction during peak seasons	85%	Critical

Source: Field observation and interviews, 2024

Based on data from various provinces, pioneer ship subsidies have shown a significant positive impact on community mobility and logistics distribution in island and remote areas. In South Sumatra, pioneer ships facilitate the mobilization of plantation products, although constrained by limited small ports. In the Riau Islands, pioneer ships provide cheap access between islands, though the lack of schedule information is often an obstacle. South Kalimantan utilizes pioneer ships to support local trade between regions, although docks on small islands are inadequate. In eastern Indonesia, the benefits of pioneer ships are increasingly felt but are also accompanied by specific challenges related to weather, infrastructure, and logistics capacity. This finding is consistent with Kadarisman et al. (2016), which states that the subsidized transportation policy in border areas functions as a tool for the sustainability of national development, not just technical services.

As demonstrated in Table 1, the frequency of empirical challenges escalates drastically in the eastern archipelagic regions, such as Maluku (90%) and West Papua (85%). In these jurisdictions, the operational bottlenecks transition from *High* structural barriers to *Critical* systemic vulnerabilities. While the normative legal framework under PM 5 of 2024 mandates uniform service delivery standards, these high finding frequencies and critical urgency tiers indicate that geographic isolation and environmental hazards severely disrupt the equitable distribution of maritime access justice. Consequently, the quantitative variance highlighted in this matrix underscores the necessity of moving away from a "one-size-fits-all" administrative approach toward regionalized, adaptive maritime governance.

RQ2. Application of Public Governance Principles in Pioneer Ship Subsidy Policies

The implementation of pioneer ship subsidies as a public policy cannot only be assessed in terms of operational effectiveness but must also be viewed through the lens of good governance. Principles such as transparency, accountability, participation, effectiveness, and

responsiveness are important foundations in assessing the extent to which this program is well managed and provides equitable benefits to communities in the 3T region.

Table 3. Public Assessment of Pioneer Ship Subsidy Governance

Indicator	Mean (μ)	SD	95% CI	Category
Access Justice				
Improving transport access	4.42	0.52	[4.30, 4.54]	Very High
Reaching isolated 3TP areas	4.31	0.61	[4.17, 4.45]	High
Governance Principles				
Supervision of operators	4.24	0.59	[4.10, 4.38]	High
Information transparency	4.12	0.68	[3.96, 4.28]	High
Complaint mechanisms	3.91	0.85	[3.71, 4.11]	Moderate

Source: Survey data, 2024

Descriptive analysis indicates a generally positive public perception of the subsidy framework, with most indicators yielding a mean score above 4.0. The highest evaluation occurs within the Access Justice construct; “improving transport access” scored highest (mean = 4.42), demonstrating the perceived effectiveness of the policy in restoring regional connectivity. This is reinforced by the high score for “reaching isolated 3TP areas” (mean = 4.31), which validates the subsidy's role in advancing maritime inclusiveness across commercially unviable routes. Conversely, the “complaint mechanisms” indicator received the lowest evaluation (mean = 3.91), falling into the moderate category and signaling an empirical deficit in operational accountability.

This finding is in line with previous research by Susanto et al. (2021), which stated that pioneer ships play an important role in connecting underdeveloped areas and expanding logistics distribution. Likewise, Salamah (2021) emphasized that maritime transportation subsidies strengthen national cohesion and reduce the cost of living of the 3T community. This study strengthens the argument that pioneer ship subsidies are a form of real implementation of the principles of good governance: effectiveness, inclusiveness, justice, and responsiveness.

To determine if these evaluations differed significantly across the sampled cohorts, a one-way Analysis of Variance (ANOVA) was performed across the three respondent groups: Service Users (n = 35), Academics (n = 15), and Logistics Employees (n = 25). The ANOVA yielded statistically significant differences for both “Information transparency” ($F(2, 72) = 4.86, p = 0.011$) and “Complaint mechanisms” ($F(2, 72) = 7.12, p = 0.001$).

To isolate where these perceptual differences occurred, a pairwise post-hoc Tukey HSD test was conducted. The results are summarized below:

Table 4. Post-Hoc Analysis of Group Differences Across Indicators

Dependent Variable (Indicator)	Group Comparison (I vs. J)	Mean Diff. (I – J)	Std. Error	Significance (p)
Information transparency	Service Users vs. Logistics Employees	−0.42	0.15	0.018*
	Service Users vs. Academics	−0.21	0.18	0.472
	Logistics Employees vs. Academics	0.21	0.19	0.511
Complaint mechanisms	Service Users vs. Logistics Employees	−0.68	0.18	0.001*
	Service Users vs. Academics	−0.52	0.21	0.041*
	Logistics Employees vs. Academics	0.16	0.22	0.748

Note: The mean difference is significant at the 0.05 level.

The post-hoc Tukey HSD test highlights a critical perception gap between downstream service users and upstream sector professionals. For “Complaint mechanisms,” Service Users scored the indicator significantly lower than both Logistics Employees ($M_{diff} = -0.68$, $p = 0.001$) and Academics ($M_{diff} = -0.52$, $p = 0.041$). There was no statistically significant difference between Logistics Employees and Academics ($p = 0.748$). Similarly, for “Information transparency,” Service Users perceived significantly lower transparency levels compared to Logistics Employees ($M_{diff} = -0.42$, $p = 0.018$). This divergence indicates that while institutional operators and planners view the administrative governance frameworks as highly effective, the actual service users experience a high degree of friction and information asymmetry when interacting with those same channels on the ground.

This finding expands upon previous research by Susanto et al. (2021), which emphasized that pioneer shipping lines are structurally vital for linking underdeveloped zones and stabilizing logistics networks. Similarly, it aligns with Salamah (2021), who argued that maritime subsidies insulate marginalized populations from volatile costs while strengthening national cohesion. By mapping these localized discrepancies through post-hoc testing, this study refines the broader argument: while pioneer ship subsidies successfully achieve macro-level justice and spatial inclusiveness, their micro-level governance remains limited by uneven administrative responsiveness and a disconnect between institutional protocols and user realities.

RQ3. Pioneer Ship Subsidies and the Principle of Fairness in Maritime Service Access

The pioneer ship subsidy is a policy instrument designed to ensure the accessibility and connectivity of 3T (Disadvantaged, Frontier, and Outermost) regions in Indonesia through sea transportation services. This policy is oriented towards logistics efficiency and carries a social mission in addressing the inequality of access between regions. Therefore, it is important to assess whether the implementation of the subsidy has been carried out in accordance with the principle of justice, namely providing equal and proportional services to people in remote areas as enjoyed in other regions.

While the operational parameters of this policy focus on logistical efficiency, its foundational intent is driven by a profound social mission: mitigating deep-seated regional disparities. To evaluate the efficacy of this framework, its implementation must be analyzed beyond mere economic utility and examined through the specific dimensions of maritime access justice. This requires assessing whether state interventions provide equitable, proportional, and legally sound protections to isolated populations that mirror the civil liberties enjoyed in highly developed urban hubs.

Table 5. Public Perception of Governance in Pioneer Ship Subsidy Policy

Indicator	Mean (μ)	SD	95% CI	Governance Significance	Dimensions of Access Justice
Ship operator supervision	4.22	0.58	[4.08, 4.36]	Transparency & Responsiveness	Distributive / Spatial Justice
Subsidy information accessibility	4.14	0.64	[4.00, 4.28]	Transparency	Distributive Justice
Periodic program evaluation	4.11	0.69	[3.95, 4.27]	Accountability & Effectiveness	Spatial Justice
Community involvement	4.02	0.73	[3.85, 4.19]	Participation	Procedural Justice
Complaint channels availability	3.91	0.85	[3.71, 4.11]	Accountability	Procedural Justice

Source: Survey data, 2024

All governance indicators reflect a positive attitude from the community, indicating that the principle of good governance has begun to be implemented in the subsidy policy for pioneer ships. The highest score (4.2) on the “supervision of ship operators” indicator indicates a favorable perception of the government’s responsiveness and transparency in managing the implementing party of the subsidy. Transparency is also reflected in the score of 4.1 on the subsidy information access indicator. Meanwhile, a score of 4.0 on the participation indicator and 3.9 on the complaint space indicate opportunities for improvement in increasing more active community involvement and providing a more responsive complaint mechanism.

The quantitative metrics illustrated in Table 4 reveal that the operationalization of the pioneer ship subsidy addresses the dimensions of access justice with varying degrees of success. When these indicators are scrutinized through contemporary legal theory, they uncover distinct structural realities regarding how fairness is experienced across physical and administrative spaces.

1. Spatial and Distributive Justice: Material Allocation and Spatial Equilibrium

Distributive justice concerns the fairness of resource allocation, demanding that burdens and benefits be shared equitably among all members of society. In the context of maritime infrastructure, distributive justice intersects directly with *spatial justice*—the equitable distribution of socially valued resources across geographic space and the explicit right of geographically marginalized populations to be free from state-sanctioned isolation.

The high mean score calculated for “ship operator supervision” (Mean = 4.22) and “subsidy information accessibility” (Mean = 4.14) indicates that the state has made significant strides in securing distributive and spatial equilibrium. By actively regulating operators and maintaining transparent information flows under the mandates of PM 5 of 2024, the central government successfully treats maritime connectivity as a non-excludable public good. This state-backed intervention artificially alters market dynamics to ensure that citizens in remote areas (such as Maluku and West Papua) are granted the baseline material resources necessary to exercise their fundamental socio-economic rights. This spatial redistribution of wealth via the State Budget (APBN) directly serves to correct historical, geography-based exclusions.

2. Procedural Justice: Administrative Inclusiveness and Recourse

Conversely, the data reveal an evident vulnerability regarding *procedural justice*. While distributive and spatial justice focus on the *outcomes* of resource allocation, procedural justice demands fairness, transparency, and meaningful equity within the *processes* that drive those allocations. It requires that affected populations possess legitimate legal standing, active participatory channels, and responsive administrative mechanisms to contest institutional failures.

The lower mean scores for “community involvement” (Mean = 4.02) and “complaint channels availability” (Mean = 3.91) expose a clear procedural deficit in the governance of the subsidy framework. A score of 3.91 indicates that while the physical assets (the ships and the routes) are successfully distributed across space, the administrative systems remain top-down and closed off to local feedback. When service users lack accessible, rapid-response grievance mechanisms to address chronic schedule inconsistencies or ticket shortages, their procedural rights are compromised. This trend directly aligns with the post-hoc Tukey HSD findings from RQ2, which proved that downstream service users experience significantly higher friction and isolation within these administrative channels than upstream operators realize. Without active participation in route planning and schedule design, the policy risks executing an incomplete form of justice—one that provides material transit but denies citizens an authentic voice in their own regional governance.

These empirical insights expand upon the scholarship of Sugiono et al. (2024), who asserted that transparency and accountability are the definitive pillars governing public

service delivery within maritime domains. Similarly, these findings reinforce Kadarisman et al. (2016), who argued that incorporating local community insights into maritime route planning directly strengthens the institutional legitimacy and long-term viability of subsidy initiatives.

Consequently, to bridge the gap between normative mandates and empirical realities, the Indonesian government must transition from a purely distributive model of governance to a highly procedural one. This shift requires the state to formally integrate community participatory frameworks into route and schedule designs, establish decentralized, digitized grievance mechanisms that ease access for remote service users, and enforce transparent, localized audits to maximize the social returns of public expenditures.

CONCLUSION

The results of the study indicate that pioneer shipping subsidies have strong legal legitimacy as a form of state affirmative action, in accordance with the mandate of Article 34, paragraph (3), of the 1945 Constitution. Quantitatively, public perception of access effectiveness is in the very high category ($\mu=4.42$; $SD=0.52$), but there is a significant difference in perception between service user and academic groups, as indicated by the ANOVA ($p<0.05$). Although the indicator of remote area coverage is assessed positively ($\mu=4.31$; $SD=0.61$), the complaint mechanism is still at a moderate level ($\mu=3.91$; $SD=0.85$), indicating a gap in operational accountability. As a proxy for welfare, it was found that the presence of pioneer ships reduced the cost of basic food logistics by 15–20% in the West Papua and NTT regions, while also providing vital access for 65% of respondents to inter-island health and higher education services.

The study concluded that although access equity has been formally achieved, its effectiveness remains hampered by constraints on port infrastructure and responsive governance. As a recommendation, the government is advised to immediately digitize the ship schedule information system in the short term, implement third-party operator performance audits in the medium term, and integrate subsidies with the development of logistics distribution centers in 3T ports as a long-term agenda to achieve regional economic independence.

The study proves that while the subsidy framework successfully achieves spatial and distributive justice by physically expanding maritime access, it falls short of procedural justice due to rigid, top-down administrative governance and inadequate grievance channels. This creates a clear friction point where normative legal promises conflict with empirical operational realities. To resolve this imbalance, policy implications dictate a phased regulatory intervention. In the short term, the Ministry of Transportation must eliminate information asymmetry by digitizing ship schedule systems. In the medium term, the state must introduce mandatory, independent third-party performance audits of ship operators to enforce strict minimum service standards. Nationally, the long-term agenda requires integrating subsidy allocations directly with the development of localized logistics distribution hubs at 3T ports, transforming pioneer shipping from a temporary financial relief mechanism into a permanent foundation for regional economic independence.

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