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Bridging Practice and Policy: A Meta-Synthesis of Nine Qualitative Studies on Indonesian Sea Transportation Management

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ABSTRACT

Indonesian sea transportation management research has grown rapidly, yet each study typically stands alone, leaving unclear whether recurring practical concerns — gaps between policy and practice, or between different professional ranks — reflect a genuine structural condition or a coincidence of overlapping topics. This study conducts a meta-synthesis of nine qualitative studies completed in 2026 under a single coordinated Indonesian maritime research programme, spanning seafarer route knowledge, domestic-international safety culture, sustainability competency, autonomous navigation governance, shipboard leadership, occupational conflict, service quality, blue economy awareness, and workforce social sustainability. Following a meta-ethnographic translation-and-synthesis procedure, reported themes from all nine studies were extracted, compared, and integrated into cross-cutting categories, cross-checked across three distinct methodological sub-designs represented in the corpus. Two robust cross-cutting themes emerged, each supported by five of the nine studies: a persistent divergence between formally documented management structures and lived operational practice, and a separate asymmetry in how different professional ranks and roles experience that practice. Two additional, more narrowly evidenced themes concern practitioner agency and an aspiration-implementation gap in sustainability commitments. The synthesis offers Indonesian maritime institutions a prioritised, corpus-triangulated evidence base for reform beyond what any single constituent study could provide.

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1. INTRODUCTION

Indonesia's sea transportation sector sits at an uncomfortable intersection: a nation whose economic and social cohesion depends entirely on inter-island shipping, yet whose maritime education and shipping management literature has historically been produced as a series of disconnected single-issue studies rather than as a cumulative body of evidence. Government reporting on the Tol Laut subsidised shipping programme confirms measurable connectivity gains to Indonesia's outermost regions [1], while independent logistics research continues to document persistent inefficiencies — chronic underutilisation of return cargo capacity chief among them — that quantitative

route-level data alone cannot fully explain [2]. This pattern, in which formally documented policy performance and operationally observed reality diverge without a clear account of why, recurs with striking consistency across seemingly unrelated corners of Indonesian maritime research: in safety compliance, in cadet competency development, in shipboard leadership, and in sustainability governance. The premise of this study is that this recurrence is not coincidental, and that a body of nine recently completed qualitative studies — each investigating a different facet of Indonesian sea transportation management, and each conducted independently — in fact converges on a small number of shared structural patterns that no single one of the nine studies was designed to reveal on its own.

Sea transportation management research generally, and in Indonesia specifically, has increasingly acknowledged that technical and managerial data alone cannot account for how transportation systems actually function. Vigar's account of transport planning knowledge hierarchies argues that planning processes systematically privilege technical and modelling knowledge over the embodied, experiential knowledge held by frontline operators and users [3], a pattern echoed in comparative research on archipelagic port network governance, which finds that operator-level feedback mechanisms distinguish higher-performing regional systems from lower-performing ones [4]. Within Indonesia, this operator-level knowledge gap has begun to be documented empirically: research on maritime logistics in eastern Indonesia shows that route-level economic outcomes depend on locally variable conditions that national programme statistics tend to average away [5], while community-focused work on remote island connectivity similarly argues that lived service adequacy cannot be inferred from scheduled-route data alone [6]. Ethnographic research on coastal communities adjacent to North Jakarta's port infrastructure extends this argument furthest, documenting a detailed, historically grounded body of community knowledge about state maritime infrastructure that formal planning processes have persistently treated as peripheral [7]. Taken together, this literature establishes that Indonesian sea transportation management is characterised by a structural knowledge asymmetry: relevant operational knowledge exists, held by practitioners and communities, but is not systematically captured by the institutions responsible for managing the system.

This same asymmetry has a cognitive and philosophical basis that extends well beyond the Indonesian context. Hutchins's ethnography of ship navigation demonstrates that navigational competence is distributed across a bridge team rather than held by any single individual [8], while Polanyi's foundational distinction between tacit and explicit knowledge explains why such distributed, practice-based knowledge resists the propositional articulation that formal records require [9]. Fricker's concept of epistemic injustice supplies the normative dimension: when an institution's channels for producing legitimate knowledge are not designed to solicit knowledge held in a particular form, the resulting exclusion is not merely an oversight but a structural injustice against the knowers concerned [10]. Parallel dynamics appear in the safety literature, where safety climate theory treats an organisation's true safety priorities as inferable only from what is actually tolerated or rewarded in practice, not from stated policy [11], and where organisational accident theory holds that persistent, unrecognised gaps between formal procedure and informal practice constitute a standing latent risk condition rather than a benign cultural quirk [12]. Even in Indonesia's blue economy policy discourse, awareness at the level of individual maritime professionals has been found to run consistently ahead of institutionalised mechanisms for translating that awareness into governance practice [13].

Despite this shared conceptual undercurrent, however, no attempt has yet been made to determine whether it is empirically present across Indonesia's own recent maritime research, rather than merely present in each study's individual literature review. Nine qualitative studies completed in 2026 under a single coordinated Indonesian maritime research programme — spanning seafarer route knowledge, domestic-international safety culture, sustainability competency, autonomous navigation governance, shipboard leadership, occupational conflict, service quality, blue economy awareness, and workforce social sustainability [14], [15], [16], [17], [18], [19], [20], [21], [22] — offer an unusually well-suited corpus for testing this proposition directly, since each was designed, conducted, and analysed independently, using different participant groups, different vessels or institutions, and different thematic frameworks. If a small number of structural patterns nonetheless recur across this diverse corpus, that recurrence constitutes considerably stronger evidence for a genuine underlying phenomenon than any single study, however rigorous, could provide on its own. Meta-synthesis — a qualitative secondary-analysis method explicitly designed to treat the findings of multiple related qualitative studies as data in their own right [23], and to move beyond simple aggregation toward genuinely new interpretive insight [24] — is the method purpose-built for this task, applying the same interpretive rigour associated with primary thematic analysis [25] to a corpus of completed studies rather than to raw transcripts.

This study therefore aims to conduct a meta-synthesis of the nine 2026 Indonesian sea transportation

management studies, addressing three objectives: first, to identify the substantive themes reported within each of the nine studies; second, to determine which of these themes recur across studies addressing otherwise unrelated operational domains; and third, to interpret what this cross-study recurrence reveals about the structure of Indonesian sea transportation management as a whole, beyond what any individual study's own discussion section addresses. In doing so, the study offers three contributions. Theoretically, it tests whether the knowledge-asymmetry and hierarchy-based frameworks already established in the maritime and transport-planning literature [3], [8], [9], [10], [11], [12] manifest as an empirically recoverable pattern across an actual body of national research, rather than remaining a set of independently plausible theoretical claims. Empirically, it produces the first cross-study synthesis of this particular Indonesian research programme, offering a level of interpretive resolution that the programme's institutional leadership could not obtain from reading the nine studies individually. Practically, it gives Indonesian maritime education and policy stakeholders a single, prioritised account of which structural issues are most strongly evidenced across the sector, rather than nine separate lists of study-specific recommendations competing for institutional attention.

2. LITERATURE OR THEORETICAL REVIEW

Meta-synthesis occupies a specific methodological niche between literature review and primary qualitative analysis. Where a conventional literature review summarises what a set of studies separately found, meta-synthesis treats the findings of those studies as the primary data of a new, higher-order analysis, with the explicit goal of producing an interpretation that none of the original studies individually intended or could have produced [23]. Noblit and Hare's meta-ethnography framework operationalises this through a specific sequence of interpretive moves: studies are read closely enough to identify their key concepts, these concepts are then "translated" into one another to determine where they are directly comparable, refutational, or only partially overlapping, and the translations are finally synthesised into a line-of-argument synthesis that exceeds the sum of the individual studies [26]. Walsh and Downe's methodological review of meta-synthesis practice confirms that this translation step, rather than simple thematic counting, is what distinguishes rigorous meta-synthesis from superficial aggregation, and that the credibility of a meta-synthesis rests on the transparency with which each translation decision is documented and traceable back to the original studies [24].

The nine studies constituting the present corpus are drawn from a single coordinated 2026 Indonesian maritime research programme and share several corpus-level properties relevant to meta-synthesis suitability. Three studies — on seafarer route knowledge [14], domestic-international safety culture [15], and cross-major sustainability competency [16] — were conducted as qualitative interview and focus-group studies with nautical, marine engineering, and port-management cadets and active seafarers. Three further studies employ single-vessel qualitative case designs, examining autonomous navigation technology governance aboard MV Stanford Tyne [17], master's leadership and shipboard discipline aboard KMP Bambit [18], and workplace conflict and occupational stress aboard KM Labobar [19]. The remaining three studies draw on an overlapping 71-respondent multi-stakeholder sample to examine service quality [20], blue economy awareness [21], and social sustainability [22] within Indonesian maritime higher education. This corpus therefore combines genuine methodological diversity (interview/FGD, single-case, and multi-stakeholder survey-interview designs) with a shared institutional and national context, which is precisely the combination meta-synthesis methodologists identify as most productive: sufficient diversity to make convergence analytically meaningful, and sufficient contextual coherence to make convergence interpretable [23].

The theoretical grounds for expecting such convergence are well established individually but have not previously been tested against one another as a set. Transport-planning scholarship documents a persistent hierarchy in which technical and managerial knowledge is treated as authoritative while frontline, embodied knowledge is treated as anecdotal [3], a pattern with a direct cognitive basis in the distributed, situated nature of operational maritime competence [8] and a direct epistemological consequence in the systematic under-recognition of certain knowers' testimony, termed epistemic injustice [10]. Safety science offers a structurally parallel account at the organisational level: safety climate is defined by what is actually tolerated in practice rather than by stated policy [11], and organisational accident theory holds that undetected gaps between formal procedure and informal practice function as latent risk conditions regardless of the domain in which they occur [12]. If these frameworks describe a genuine structural feature of Indonesian maritime management rather than a set of independently plausible but domain-specific observations, their signature — a recurring divergence between formal design and lived practice, and a recurring asymmetry in whose knowledge and experience is institutionally credited — should be recoverable as a cross-cutting pattern within the nine-study corpus, independent of each study's own specific topic.

No published study has yet attempted this cross-study synthesis. Each of the nine studies situates itself

within its own topic-specific literature — safety climate theory for the safety culture study [15], the ironies-of-automation literature for the autonomous navigation study [17], job demands-resources theory for the occupational stress study [19] — and none references the other eight as part of a shared analytic corpus. This is a methodological gap as much as an empirical one: the programme that produced these nine studies possesses, collectively, a resource for institutional insight that no single commissioning body, reviewer, or reader has yet been positioned to extract, because doing so requires the specific interpretive apparatus of meta-synthesis rather than a simple reading of nine independent abstracts. The present study addresses this gap directly, applying Noblit and Hare's translation-and-synthesis procedure [26], informed by the knowledge-asymmetry and safety-culture theoretical frameworks reviewed above [3], [8], [10], [11], [12], to determine whether a shared structural account of Indonesian sea transportation management can be recovered from across, rather than within, the nine constituent studies.

3. METHOD

This study applies meta-synthesis, following Noblit and Hare's meta-ethnographic procedure [26] as methodologically elaborated by Sandelowski and Barroso [23] and Walsh and Downe [24], to a purposively bounded corpus of nine qualitative studies completed in 2026 under a single coordinated Indonesian maritime research programme [14], [15], [16], [17], [18], [19], [20], [21], [22]. The corpus was not sampled from the wider literature but was defined by institutional completeness: all nine studies produced by the programme within its 2026 publication cycle were included, spanning three publication venues (a Scopus-indexed conference proceedings series and two Sinta-accredited national journals) and three methodological sub-designs (cadet/seafarer interview-and-focus-group studies, single-vessel case studies, and multi-stakeholder survey-interview studies). This bounded, complete-corpus approach is appropriate for a first meta-synthesis of a specific research programme, where the analytic interest lies in what a defined, coherent body of institutional research collectively reveals, rather than in achieving thematic saturation across the wider international literature.

The primary data for this synthesis consist of the reported themes, findings statements, and interpretive claims contained in each of the nine studies' abstracts and reported results, rather than raw interview transcripts, consistent with meta-synthesis's treatment of published or completed findings as the unit of analysis [23]. For each study, the reported themes were extracted verbatim and organised into a study-by-theme matrix, recording the specific practitioner group, vessel or institutional context, and analytic method associated with each theme. Following the meta-ethnographic translation procedure [26], each theme was then compared against every other study's themes to identify direct conceptual correspondence, partial overlap, and study-specific themes with no clear parallel elsewhere in the corpus.

Analysis proceeded in three stages. First, thematic analysis was applied to the extracted theme matrix, using an inductive coding approach consistent with established thematic analysis procedure [25], to generate candidate cross-cutting categories grounded in the language of the original nine studies rather than imposed from outside theory. Second, cross-group comparison was conducted across the three methodological sub-corpora to determine whether candidate cross-cutting themes held across methodologically distinct study types, on the premise that a pattern recurring across different methods constitutes stronger evidence than one confined to a single design. Third, narrative synthesis integrated the resulting cross-cutting themes into a coherent interpretive account, explicitly documenting, for each theme, which studies contributed supporting evidence and how each study's original language was translated into the shared category. This traceability requirement follows directly from meta-synthesis's core credibility standard: that every synthesised claim must be defensible by tracing it back to specific, identifiable statements in the original corpus [24].

4. RESULTS AND ANALYSIS

Table I presents the study-by-theme matrix produced through the translation procedure described in Section 3, mapping each of the nine studies in the corpus against the four cross-cutting themes that emerged from cross-study comparison of their reported findings.

Table I. Study-by-Theme Matrix

Study (Reference)	Theme I: Formal-Operational Divergence	Theme II: Rank/Role Perception Asymmetry	Theme III: Marginalisation of Frontline/Transitional Agency	Theme IV: Aspiration-Implementation Gap
A1. Route Knowledge and Coastal Realities [14]	✓		✓	

A2. Safety Culture Gaps [15]	✓	✓		✓
A3. Sustainable Maritime Competency Readiness [16]	✓			✓
B1. Autonomous Navigation Technologies [17]	✓		✓	
B2. Master's Leadership and Shipboard Management [18]		✓		
B3. Workplace Conflict and Occupational Stress [19]		✓		
C1. Sustainable Service Quality [20]	✓	✓		
C2. Blue Economy Awareness [21]				✓
C3. Social Sustainability of the Maritime Workforce [22]		✓	✓	
Studies supporting theme (of 9)	5	5	3	3

The corpus divides, per Table I, into two robustly evidenced themes and two more narrowly evidenced themes, summarised in Figure 1.

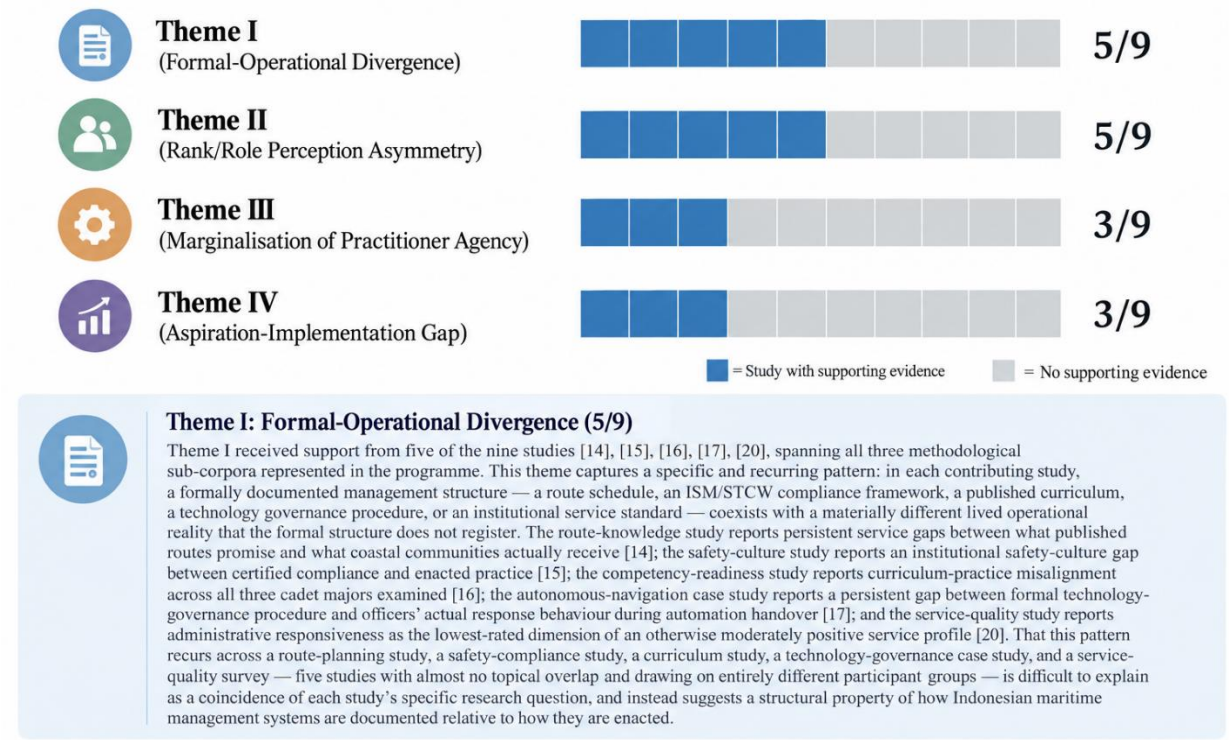


Figure 1. Cross-Cutting Theme Support Across the Nine-Study Corpus (studies out of 9)

Theme I, Formal-Operational Divergence, received support from five of the nine studies [14], [15], [16], [17], [20], spanning all three methodological sub-corpora represented in the programme. This theme captures a specific and recurring pattern: in each contributing study, a formally documented management structure — a route schedule, an ISM/STCW compliance framework, a published curriculum, a technology governance procedure, or an institutional service standard — coexists with a materially different lived operational reality that the formal structure does not register. The route-knowledge

study reports persistent service gaps between what published routes promise and what coastal communities actually receive [14]; the safety-culture study reports an institutional safety-culture gap between certified compliance and enacted practice [15]; the competency-readiness study reports curriculum-practice misalignment across all three cadet majors examined [16]; the autonomous-navigation case study reports a persistent gap between formal technology-governance procedure and officers' actual response behaviour during automation handover [17]; and the service-quality study reports administrative responsiveness as the lowest-rated dimension of an otherwise moderately positive service profile [20]. That this pattern recurs across a route-planning study, a safety-compliance study, a curriculum study, a technology-governance case study, and a service-quality survey — five studies with almost no topical overlap and drawing on entirely different participant groups — is difficult to explain as a coincidence of each study's specific research question, and instead suggests a structural property of how Indonesian maritime management systems are documented relative to how they are enacted.

Theme II, Rank- and Role-Based Perception Asymmetry, likewise received support from five studies [15], [18], [19], [20], [22], but describes a materially different pattern: rather than a gap between formal design and practice, this theme captures a recurring divergence in perception or experience between different positions within the same organisational or institutional hierarchy. The shipboard leadership case study reports a persistent gap between officers' and ratings' perception of safety climate aboard the same vessel [18]; the occupational stress case study reports rank-differentiated stress exposure, with ratings reporting substantially higher demand-resource imbalance than senior officers [19]; the service-quality study reports a perception gap between industry practitioners and cadets [20]; the social sustainability study reports that veteran officers and seafarer-lecturers consistently report lower institutional satisfaction than other stakeholder groups [22]; and the safety-culture study reports compliance-culture variability that maps partly onto rank and context [15]. Considered alongside Theme I, this suggests that Indonesian maritime institutions face not one but two distinct forms of measurement blindness: formal systems miss the gap between design and practice (Theme I), and they additionally miss the fact that different positions within the same hierarchy experience that practice in systematically different ways (Theme II) — a distinction with direct implications for what kind of institutional response each theme requires.

Themes III and IV were each supported by three studies and are reported with correspondingly more caution regarding their generalisability across the full corpus. Theme III, Marginalisation of Frontline and Transitional Professional Agency, draws on the route-knowledge study's explicit finding of a "practitioner agency deficit" [14], the autonomous-navigation study's finding of unclear accountability during human-automation handover [17], and the social sustainability study's explicit finding of systemic gaps in recognising transitional maritime professionals, specifically veteran officers and former seafarer-lecturers [22]. Theme IV, an Aspiration-Implementation Gap in Sustainability and Professional Competency, draws on the safety-culture study's finding of "aspirational safety professionalism" coexisting with compliance minimalism [15], the competency-readiness study's finding of sustainability awareness without corresponding application [16], and the blue-economy study's finding of moderate awareness accompanied by specific deficits in governance and community-development knowledge [21].

Read together, the four themes suggest a layered rather than a flat account of Indonesian sea transportation management's structural condition. Themes I and II, each evidenced by more than half the corpus and each cutting across all three methodological sub-designs, represent the most robust findings of this synthesis: Indonesian maritime management systems consistently under-register the gap between formal design and enacted practice, and separately under-register the fact that different positions within their own hierarchies experience that practice unequally. Themes III and IV, while less broadly evidenced, are not thereby less significant; both align closely with theoretical predictions from the knowledge-asymmetry and epistemic-injustice literature reviewed in Section 2 [3], [8], [10], which would predict precisely this pattern — specific, identifiable groups whose relevant knowledge or agency is present but institutionally under-credited. The corpus-wide recurrence of Theme I in particular is consistent with organisational accident theory's claim that undetected formal-practice gaps function as latent risk conditions regardless of the specific domain in which they occur [12], suggesting that the pattern identified here may carry safety-relevant, not merely administrative, significance even in studies — such as the route-knowledge and service-quality studies — that were not framed around safety at all.

5. DISCUSSION

The central finding of this meta-synthesis — that a small number of structural patterns recur across nine independently designed studies spanning route planning, safety culture, competency development, technology governance, leadership, occupational wellbeing, service quality, blue economy awareness, and workforce sustainability — directly answers the study's guiding objective of determining whether Indonesian sea transportation management exhibits a genuine cross-

domain structural condition rather than nine unrelated sets of domain-specific findings. The answer is affirmative for at least two of the four themes identified: Formal-Operational Divergence and Rank-Based Perception Asymmetry each command support from more than half the corpus and cut across every methodological sub-design represented, a form of triangulation that individual studies, however well executed, cannot achieve on their own [24], [26].

This finding both confirms and sharpens existing theory. Vigar's account of technical knowledge being institutionally privileged over embodied, frontline knowledge [3] and Fricker's account of epistemic injustice as a structural rather than incidental exclusion [10] both predict something resembling Theme I and Theme III, but neither framework, developed in non-Indonesian and non-maritime contexts respectively, specifies how such exclusion would manifest across an actual national maritime research programme. The present synthesis supplies that specification: the exclusion manifests not as a single missing feedback channel but as a recurring, measurable gap between what formal systems document and what practitioners across the hierarchy actually experience, present in curriculum design, safety compliance, route planning, and technology governance alike. This is consistent with, but more granular than, organisational accident theory's general claim that undetected formal-informal gaps constitute latent risk [12]; the present corpus suggests that in the Indonesian maritime context, this latency is not confined to safety-critical domains but appears to be a general property of how the sector's institutions relate to their own frontline operations.

The synthesis also reveals a finding not fully anticipated by any single theoretical framework reviewed in Section 2: that Theme I and Theme II are analytically distinct rather than the same phenomenon viewed twice. Safety climate theory situates both within a single construct — enacted versus stated priority [11] — but the corpus evidence here suggests that Indonesian maritime institutions may fail at two separable tasks: registering that stated policy diverges from practice at all, and, independently, registering that this divergence is not experienced uniformly across rank and role. An institution that closed the first gap without addressing the second — for instance, by tightening formal compliance monitoring without altering how ratings' or cadets' perspectives are solicited relative to officers' or lecturers' — would, on this account, leave Theme II entirely unaddressed. This distinction, visible only because nine studies were read together rather than separately, constitutes the study's clearest original contribution.

The study's principal strength is also its principal limitation: working from the reported findings of nine already-completed studies, rather than their full raw datasets, allowed a genuinely cross-domain synthesis to be conducted efficiently and transparently — a threat to depth partially mitigated by the traceability requirement built into the coding procedure [25] — but at the cost of being unable to independently verify or re-code the primary data underlying each study's reported themes [23]. Themes III and IV, supported by only three studies each, should accordingly be read as plausible and theoretically consistent rather than as strongly corroborated corpus-wide patterns; a fuller meta-synthesis conducted once full manuscripts, rather than reported findings, are available for all nine studies may either strengthen or qualify these two themes further.

For institutional practice, the clearest implication is that interventions targeting Theme I and Theme II separately are likely to be necessary: closing formal-practice gaps through improved monitoring or feedback mechanisms, and separately ensuring that rank- and role-differentiated experience is actively solicited rather than assumed to be uniform. For scholarship, the study demonstrates that a coordinated institutional research programme, even one not originally designed with meta-synthesis in mind, can yield synthesis-level insight when its constituent studies are subsequently read as a corpus; future Indonesian maritime research programmes might productively build this possibility into their design from the outset, for instance by adopting partially shared thematic coding categories across otherwise independent studies to facilitate later synthesis.

6. CONCLUSION

This meta-synthesis of nine independently conducted 2026 studies on Indonesian sea transportation management identifies two robust, corpus-wide structural patterns — a persistent divergence between formally documented management structures and lived operational practice, and a separate, recurring asymmetry in how different ranks and roles experience that practice — alongside two more narrowly evidenced patterns concerning practitioner agency and the aspiration-implementation gap in sustainability commitments. By treating nine topically diverse studies as a single analytic corpus rather than as separate contributions, this synthesis recovers a structural account of the sector that no individual study was positioned to provide, distinguishing formal-practice divergence from rank-based perception divergence as two separable institutional failures requiring distinct remedies. The findings offer Indonesian maritime education and policy stakeholders a prioritised, evidence-triangulated basis for institutional reform, and demonstrate the broader value of designing coordinated research programmes with eventual cross-study synthesis in mind.

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