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Regulatory Fragmentation and Uneven ESG Awareness in Halal Port Logistics: Qualitative Evidence from Selected Malaysian Ports

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Abstract
Malaysian ports serve as the gateways for the country's halal trade. Yet port terminals remain outside a dedicated halal certification scheme and are not covered by an integrated halal-Environmental, Social and Governance (ESG) governance instrument. This paper examines two issues. The first concerns the regulatory and institutional gaps that hinder ESG integration in halal port logistics. The second concerns on how ESG awareness and understanding vary among regulatory, port, halal logistics and operational stakeholders. Sixteen senior informants were interviewed across three federal ports. They represented regulatory bodies, port authorities, logistics providers and halal organisations. Interviews were combined with documentary analysis then analysed thematically. Three gaps emerged. Halal certification schemes stop short of port terminals. The relevant halal logistics standards are not legally mandatory for port terminal operations. ESG and halal requirements sit in separate instruments, without a formal link. ESG awareness is strong at the policy level yet limited at the operational level. Weak integration is a structural outcome rather than a failure of will. The paper proposes a formal mandate supported by capacity building.
Keywords: ESG, Halal Logistics, Port Governance, Regulatory Gaps, Institutional Theory, Malaysia

Introduction

Ports carry around 80% of world trade by volume (UNCTAD, 2024), and they face mounting pressure to operate sustainably. Cargo handling, vessel traffic and auxiliary power systems generate substantial volumes of greenhouse gases, with documented consequences for the health of nearby communities (Gibbs et al., 2014; Lee et al., 2020). Governments and investors now expect ports to embed Environmental, Social and Governance (ESG) principles into planning and daily operations (Butt et al., 2021; Schipper, 2019). ESG supplies a clear structure for that task: the environmental pillar addresses emissions, waste and energy use;

the social pillar concerns labour standards and community welfare; and the governance pillar covers transparency, accountability and compliance (Gu et al., 2023; Safuan et al., 2023).

Ports in Muslim-majority economies carry a second obligation. Although halal logistics encompasses multiple logistics nodes, including airports, this study focuses specifically on marine ports because maritime transport carries around half of the volume of international trade in goods, with an even higher proportion in many developing countries, making seaports critical gateways for maintaining the integrity of halal cargo across international supply chains (Abd Aziz et al., 2024; Asiaei et al., 2016). Airports remain relevant to halal logistics, particularly for time-sensitive and high-value products but are outside the scope of this study because the analysis focuses on maritime logistics and port governance. Halal logistics requires that goods certified as halal, meaning permissible under Islamic law, retain that status across the entire supply chain, which in practice demands separate storage, dedicated handling and strict documentary control to prevent contact between halal and non-halal cargo (Tieman, 2011; Zailani et al., 2017). The wider concept of *halalan-tayyiban* (see footnote) reaches further, requiring that halal goods remain pure, clean and wholesome from origin to consumption (Majid et al., 2023). Halal logistics is therefore more than a religious matter. It operates as a governance system, resting on traceability, accountability and ethical conduct, values it shares with ESG (Ghalih & Chang, 2024).

Malaysia offers a valuable vantage point on the meeting of these two systems. The country ranks among the leading maritime hubs and–one of the major participants in the global halal economy, while logistics constitutes an important component of its trade and industrial infrastructure. Halal exports reached RM61.79 billion (Malaysian ringgit) in 2024, a 15% increase from RM53.72 billion in 2023, and the sector is projected to contribute 10.8% of gross domestic product by 2030 (Malay Mail, 2025b). Federal ports such as Port Klang, Johor Port and Kuantan Port handle most of this trade. National policy, moreover, treats halal and sustainability as linked ambitions: the Halal Industry Master Plan 2030 places halal within the country's ESG agenda and calls for stronger halal integrity and regulatory coherence (Asmadi & Saimy, 2024).

A problem remains. Port terminal operations are not directly covered by a port-specific halal certification scheme or an integrated halal-ESG governance instrument. Malaysia's halal certification schemes cover transport, warehousing and retail but stop short of port terminals, while the principal industrial ESG framework, the National Industry ESG Framework (i-ESG) that the Ministry of Investment, Trade and Industry (MITI) introduced in 2023, applies only to manufacturing (MITI, 2023; Wong, 2024). Port operators that move halal cargo therefore work without a certification pathway, a binding standard or a coordinating authority. Research has largely overlooked this gap: most ESG scholarship on ports treats environmental performance in general terms (Dos Santos & Pereira, 2022), and most halal logistics research concentrates on transport and warehousing rather than terminals (Jaafar et al., 2021; Ustadi & Osman, 2022).

This paper examines the gap from the inside, drawing on the accounts of the people who govern and operate the system. It pursues two objectives. The first identifies the gaps in regulatory frameworks, documentation practices and institutional roles that affect ESG integration in halal logistics within Malaysian port contexts; the second explore how ESG awareness and understanding vary among regulatory, port, halal logistics and operational stakeholders. These objectives are analytically connected because regulatory arrangements shape institutional expectation and knowledge, while stakeholder understanding influences how such requirements are interpreted and implemented.

The paper offers three contributions. First, it extends existing halal-friendly port research by examining the regulatory and institutional conditions for formal ESG-halal integration across three Malaysian federal ports, using evidence from multiple governance levels. Second, it shows that ESG awareness is concentrated among policymakers and standards-related actors and is substantially weaker at the operational level, and it explains this pattern through institutional theory. Third, it identifies the *halalan-tayyiban* principle as a conceptual bridge between halal and ESG governance that has not yet been formally institutionalised, with practical implications for policymakers in Malaysia and other jurisdictions developing halal trade infrastructure.

The remainder of the paper reviews the literature on ESG in ports, halal logistics and governance, sets out the theoretical lens, describes the qualitative methodology, presents the findings for each objective in turn, and closes by discussing their implications for policy and research.

Literature Review

ESG and sustainable port operations

Scholarship on sustainable supply chain management has expanded steadily since Carter and Rogers (2008) defined a sustainable supply chain as one that integrates social, environmental and economic objectives across organisations. Ports hold a distinctive place in this literature: they act simultaneously as economic enablers, environmental actors and social institutions (Laxe et al., 2017; Sislian et al., 2016). Several authors have accordingly proposed multidimensional frameworks for port sustainability that combine economic viability, environmental protection, social integration and institutional governance (Lam & Li, 2019; Parola et al., 2017).

ESG has become the dominant language for this agenda. The framework traces back to the 2005 United Nations initiative Who Cares Wins, which argued that responsible investment and ethical governance create long-term value (Mulchandani et al., 2022). Recent studies credit ESG adoption in ports with stronger environmental performance (Chen et al., 2025; Platias et al., 2025), better social welfare outcomes (Gu et al., 2023; Safuan et al., 2023), and firmer financial performance and investor confidence (Niu et al., 2024). The port sector nevertheless trails other industries. Dos Santos and Pereira (2022) record a near absence of work introducing ESG concepts into port authorities and terminals, and implementation varies across regions, a pattern that points to fragmented application of ESG frameworks rather than systematic uptake (Safuan et al., 2023; Villabruna et al., 2024).

Halal logistics and the port context

Halal logistics forms a specialised branch of supply chain management whose task is to preserve the halal status of goods across procurement, handling, warehousing, transport and retail (Talib et al., 2015; Ziegler et al., 2022). Core requirements include physical segregation of halal and non-halal cargo, dedicated equipment, documented traceability and certification compliance (Tieman, 2011; Wan-Chik et al., 2023). The halalan-tayyiban principle anchors these requirements. It demands that goods remain pure and wholesome, not merely permissible, throughout the chain (Zailani et al., 2017; Majid et al., 2023).

These requirements carry costs. Segregated infrastructure, dedicated storage and special handling raise resource use and can produce operational inefficiency (Ab Talib et al., 2015; Ziegler et al., 2022), and the literature repeatedly records high implementation costs, limited awareness and weak institutional support as barriers (Haleem et al., 2018, 2020; Mahidin et al., 2017). An apparent tension therefore arises between halal compliance and environmental performance. Yet the same literature records deep common ground: halal and ESG alike stress ethical conduct, transparency, traceability and accountability (Ghalih & Chang, 2024). Whether this conceptual overlap has been converted into working governance arrangements remains the open question, and ports, the sites through which halal trade actually flows, provide the obvious test case. Previous studies have called for qualitative inquiry at specific port sites (Jaafar et al., 2021; Ustadi & Osman, 2022).

Governance and regulation in halal logistics
Governance sits at the centre of halal integrity. Preserving halal status across a multi-actor chain demands traceability systems, certification mechanisms and coordinated oversight (Hamdan et al., 2021; Tieman et al., 2019), and the structure of port governance, whether centralised, public-private or decentralised, shapes how well such requirements can be enforced (Brooks & Cullinane, 2006; Monios, 2019; Notteboom et al., 2022). Evidence from other countries shows that mixed public-private arrangements can leave enforcement gaps that threaten compliance (Iwuoha et al., 2022), while cost and complexity weigh on smaller firms, which apply halal rules less consistently than large ones (Limenta et al., 2018). The gap extends to the international level. Neither an International Maritime Organization classification for halal cargo nor a harmonised customs code exists. OIC/SMIIC 17 currently comprises standards covering transportation, warehousing and retailing. In October 2022, SMIIC Technical Committee (TC) 10 agreed to establish a working group to study the development of an internantional standard, Halal Supply Chain Management System – Part 4: Port – General Requirements. The proposed standard is currently listed in the SMIIC work programme as OIC/SMIIC DS 17-4 (SMIIC, 2026).

Several bodies share halal governance in Malaysia. The Department of Islamic Development Malaysia (JAKIM) issues halal certification, the Halal Development Corporation (HDC) leads industry development, the Department of Standards Malaysia (DSM) develops the Malaysian Standards, and MITI directs industrial ESG policy. Earlier studies report inconsistent standards, overlapping mandates and unresolved policy ambiguity across these bodies (Ab Talib & Hamid, 2014; Zailani et al., 2017). Such fragmentation weakens enforcement and complicates coordinated reform (Kadir et al., 2016).

Research gap and theoretical lens
Previous Malaysian research has established the relevance of halal-friendly port development and its relationship with sustainability. Jaafar et al. (2021), drawing on qualitative evidence from port stakeholders in southern Malaysia, developed a halal-friendly sustainable port concept and identified components supporting its implementation. More recently, Abd Aziz et al. (2024) examined halal-friendly port development as part of sustainable practice and

highlighted the role of ports in maintaining halal integrity across the supply chain. These studies provide an important foundation but primarily approach sustainability through halal-friendly port development and operational innovation. A more specific gap remains at the intersection of halal logistics, formal ESG governance and port regulation. Existing research has given limited empirical attention to how halal and ESG requirements interact within the institutional arrangements governing Malaysian port terminals, including whether certification schemes, standards and regulatory mandates provide a formal mechanism for their integration. Limited attention has also been given to how ESG is understood across different levels of this governance system. This study addresses that gap through a multi-site qualitative analysis of three Malaysian federal ports, combining interviews across regulatory, standards, port, operational and halal-industry actors with documentary analysis of relevant standards, legislation and policy instruments. Its contribution therefore lies in explaining how regulatory fragmentation and uneven ESG awareness shape the institutional conditions for ESG-halal integration at the port-terminal interface.

The Institutional theory that guides the analysis explains why organisations behave alike under shared rules and norms: organisations conform to the regulatory pressures and expectations around them, sometimes adopting structures for legitimacy rather than performance (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Galleli & Amaral, 2025). Where rules are absent, conformity to that absence becomes the predictable result.

Methodology

Research design

This study adopted an interpretivist qualitative design. The phenomena of interest, governance arrangements, regulatory gaps and stakeholder understanding, are embedded in institutions and negotiated among actors, and depth of context captures them better than breadth of measurement (Creswell & Poth, 2018; Yin, 2018). We chose multiple ports and treated three Malaysian federal ports as the study sites. Theory served as an interpretive lens rather than a deductive coding frame.

Sites and participants

Three ports were selected after a desktop review of port authority publications, industry assessments and government reports. Port Klang, Malaysia's largest federal port, handles about 13.8 million twenty-foot equivalent units a year and hosts the highest concentration of certified halal logistics providers. Johor Port operates as a multipurpose port and the world's largest palm oil terminal, with strong links to the halal industry through the Iskandar Malaysia corridor. Kuantan Port serves as the main gateway of the East Coast Economic Region and in 2024 became the first Malaysian port to pilot halal-compliant terminal procedures (Tieman, 2024). We excluded ports with limited halal logistics activity, including Penang Port and the East Malaysian ports, on evidential ground.

Sixteen senior stakeholders took part in semi-structured interviews. This study relied primarily on purposive sampling and supplemented it with snowball sampling through participants' professional networks (Naderifar et al., 2017; Palinkas et al., 2015). Participants spanned four categories, government and regulatory authorities, port operators and authorities, halal logistics providers, and halal and ESG-related organisations, and all held senior roles in port governance, logistics management, regulatory enforcement or halal industry development. We assigned each participant a code (P1 to P16) and refer to them only by these codes; Table 1 summarises the distribution. Sample adequacy was assessed based on thematic saturation.

The sixteen interviews conducted were empirically justified by the achievement of thematic saturation. Saturation was reached by the ninth interview, after which subsequent interviews generated little or no substantially new information. This assessment is consistent with the approach proposed by Guest et al. (2020), which evaluates saturation based on the base size, run length, and proportion of new information generated by subsequent interviews. Nevertheless, the study does not claim to have achieved meaning saturation, which concerns the depth, nuance, and interpretive richness of participants' accounts. This limitation is acknowledged in the conclusion.

Data collection concluded when subsequent interviews yielded limited additional information relevant to the principal regulatory themes. Given the heterogeneity of the stakeholder groups and institutional contexts represented in the study, the findings are therefore considered thematically adequate for addressing the principal research questions rather than saturated within every institutional category.

Table 1
Participant distribution by stakeholder category

Code	Institutional category	Stakeholder category
P1	Halal certification authority (JAKIM)	Government and regulatory authorities
P2-P6	Port authorities (Port Klang Authority (PKA); Johor Port Authority (JPA))	Port operators and authorities
P7-P8	Terminal operators and logistics providers (Northports Berhad and Kuantan Consortium Berhad)	Port operators and authorities
P9-P11	Regulatory and inspection agencies (MAQIS)	Government and regulatory authorities
P12-P13	Department of Standards Malaysia (DSM)	Government and regulatory authorities
P14-P15	Ministry of Investment, Trade and Industry (MITI)	Government and regulatory authorities
P16	Halal Development Corporation (HDC)	Halal and ESG-related organisations

Table 2
Participant Characteristics and Stakeholder Classification

Code	Stakeholder category	Organisation type	Port / geographical coverage	Years of experience	Relevance to halal port operations or ESG
P1	Government and regulatory authorities	JAKIM	National / multiple ports	>15 years	Halal certification and regulatory oversight
P2	Port operators and authorities	Port Klang Authority	Port Klang	11-15 years	Regulation and port planning
P3				5-10 years	Port administration and operations
P4				5-10 years	Port operations and governance
P5		Johor Port Authority	Johor	5-10 years	Port administration
P6				5-10 years	Port operations and planning
P7	Port operators and authorities	Northport Berhad	Port Klang	5-10 years	Cargo operations and logistics
P8	Port operators and authorities	Kuantan Consortium Berhad	Kuantan	>15 years	Cargo handling and logistics
P9	Government and regulatory authorities	MAQIS	Multiple ports	5-10 years	Regulatory and border inspection
P10				5-10 years	Border inspection and regulatory compliance
P11				5-10 years	Inspection and regulatory compliance
P12		DSM	National	5-10 years	Standards development and ESG/halal standards
P13			National	5-10 years	Standards development and regulatory framework
P14		MITI	National	11-15 years	Trade, industry and policy development
P15			National	5-10 years	Trade, industry and policy development
P16	Halal / ESG-related organisation	HDC	National / multiple ports	11-15 years	Halal industry development and ESG-related initiatives

Data collection

Three complementary data collection methods were employed. Semi-structured interviews were the primary source of empirical data. Separate interview guides were developed for each stakeholder category and reviewed by two subject-matter experts to establish content validity before data collection. Sixteen interviews were conducted, each lasting between 45 and 90 minutes, either face to face or online. With participants' written informed consent, all interviews were audio-recorded and transcribed within one week of each session. Field notes were maintained throughout the data collection process to capture contextual observations and supplement the interview data.

Documentary analysis provided an institutional evidence base and enabled triangulation of the interview findings (Bowen, 2009). The analysis covered JAKIM's *Manual Prosedur Pensijilan Halal Malaysia 2020* (Jabatan Kemajuan Islam Malaysia, 2020), MS 1500:2019 and the three parts of MS 2400:2019 (Department of Standards Malaysia, 2019a, 2019b, 2019c, 2019d), relevant Acts of Parliament (Malaysia, 1963, 1983, 1996, 2011), the National Industry ESG Framework (MITI, 2023), the Halal Industry Master Plan 2030 (Halal Development Corporation Berhad, 2023), the Green Technology Master Plan Malaysia 2017–2030 (Ministry of Energy, Green Technology and Water Malaysia, 2017), Bursa Malaysia's Sustainability Reporting Guide (Bursa Malaysia Securities Berhad, 2022), and port-specific sustainability documents, including the Johor Port Sustainability Framework and Roadmap (Johor Port Berhad, 2025), the Green Port Policy of Kuantan Port 2021–2030 (Kuantan Port Authority, 2021), and IJM Corporation Berhad's integrated annual reports (IJM Corporation Berhad, 2025, 2026).

Data analysis

The interview transcripts were analysed using codebook thematic analysis. The analysis followed six phases adapted from Braun and Clarke (2022, 2006): familiarisation with the data, generation of initial codes, development of candidate themes, review of themes, definition and naming of themes, and production of the findings. Initial coding was conducted inductively, allowing codes to emerge from participants' accounts, while institutional theory and stakeholder theory (Freeman, 2010) informed the subsequent interpretation of relationships among the themes.

Following the initial coding, a codebook was developed and refined iteratively to support consistency in coding. The codebook recorded the name and definition of each code, inclusion and exclusion criteria, and illustrative examples from the interview data (Guest et al., 2020). A second researcher independently reviewed and coded 20% of the transcripts. Differences in coding were discussed to clarify code definitions and refine the codebook. This process was used to enhance analytical consistency and reflexivity rather than to calculate a formal inter-coder reliability statistic.

NVivo was used to organise the transcripts, codes, analytical memos, and supporting quotations. A framework matrix was subsequently developed to compare themes across regulatory and policy stakeholders, port stakeholders, halal logistics stakeholders, and operational and enforcement stakeholders (Gale et al., 2013). The comparison examined stakeholders' familiarity with ESG, their understanding of its environmental, social, and governance dimensions, and their ability to relate ESG principles to halal logistics and port operations

Trustworthiness and ethics

Trustworthiness was established using the four criteria proposed by Lincoln and Guba (1985): credibility, transferability, dependability, and confirmability. Credibility was enhanced through triangulation of interviews, document analysis, together with member checking, whereby selected participants reviewed a summary of the findings. Transferability was supported through rich descriptions of the governance context across the multiple ports. Dependability was ensured by maintaining a comprehensive audit trail documenting coding decisions and analytical procedures, while confirmability was strengthened using a reflexive journal to minimise researcher bias. Ethical approval was obtained from the authors' institution prior to data collection. Written informed consent was obtained from all participants before the interviews, and all data were anonymised through a coding system to protect participants' identities.

Findings

Gaps in regulatory frameworks and institutional roles

The first objective identified the regulatory, documentation and institutional gaps that affect ESG integration in halal port logistics. We found three gaps, each confirmed by both interview and documentary evidence. Table 2 summarises them.

Table 3

Summary of regulatory framework gaps and supporting evidence

Gap	Documentary evidence	Important	Interview evidence
No port-specific halal certification	JAKIM (2020), *Manual Prosedur Pensijilan Halal Malaysia* (MPPHM 2020) - certification scope excludes ports and port authorities; Department of Standards Malaysia (2019b), MS 2400-1:2019 (Transportation) - applies to halal logistics providers, not ports.	Creates a regulatory blind spot where ports handle halal cargo but cannot be assessed or certified under a dedicated halal framework. This weakens end-to-end halal supply chain assurance and reduces international confidence in port integrity.	Confirmed by certification authority (P1)
Voluntary status of all standards	Malaysia (1996), Standards of Malaysia Act 1996 (Act 549) - Malaysian Standards are voluntary unless incorporated into legislation; Malaysia (1963), Port Authorities Act 1963; Malaysia (2011), Trade Descriptions Act 2011; Malaysia (1983), Food Act 1983 – none mandate halal logistics standards for ports.	Results in inconsistent adoption across ports because halal logistics standards depend on organisational commitment rather than statutory obligation, limiting regulatory enforceability.	Confirmed by standards officials (P12) and enforcement informants (P11)
No integrated ESG-halal instrument	Halal Development Corporation (2023), Halal Industry Master Plan 2030 - emphasises halal ecosystem development; KeTTHA (2017), Green Technology Master Plan 2017-2030 - promotes environmental sustainability without halal integration; Bursa	Produces fragmented governance where halal compliance and ESG objectives are implemented through parallel policy frameworks, preventing a unified sustainability model for port operations.	Confirmed by standards (P13) and trade ministry informants (P14)

	Malaysia (2022), Sustainability Reporting Guide - ESG disclosure framework operates separately from halal governance.	

No halal certification scheme covers port terminals

The most basic gap is the absence of any port-specific halal certification in Malaysia. JAKIM's logistics certification scheme covers three sub-sectors, transportation, warehousing and retailing, and port terminal operations appear in none of them. The certification authority confirmed this directly:

"If we are speaking directly about ports, I believe at this point we do not yet have certification for ports." (P1)

The documentary evidence matches the testimony. Full review of the MPPHM found no port-specific clauses, no guidance on coordinating halal logistics across multiple operators. The reviewed documents did not identify a port-terminal protocol specifically designed to preserve halal logistics integrity during container handling. MS 2400, the Malaysian Standard for halal supply chain management, shares the same boundary: its three parts cover general requirements, warehousing and transportation, and the scope clause of each confirms that terminals fall outside. The reason is largely historical. Halal certification developed as a product-based and premise-based system that grew around factories, restaurants and warehouses, and it never extended to the terminal environment, where many operators handle many cargo types. The consequence is simple but severe. A port operator that wishes to certify its halal handling cannot do so; there is no scheme to join, no standard to meet, and no benchmark against which to measure performance.

All relevant standards are voluntary

The second gap concerns legal force. No law compels halal logistics compliance at the port level. A standard official explained the legal architecture:

"By default, the use of a standard is voluntary. Only if the standard is cited in any act or regulation can it become a mandatory standard." (P12)

Documentary review supports this account. Under the Standards of Malaysia Act 1996, a Malaysian Standard binds only when sector legislation cites it, and no such citation exists for halal logistics. The Port Authorities Act 1963 governs port administration, safety and finance without reference to halal or ESG compliance; the Trade Descriptions Act 2011 addresses halal labelling, not logistics operations. The same voluntary architecture governs the ESG side. Bursa Malaysia's sustainability reporting rules bind listed companies only, and most port operators and halal logistics providers are not listed. Government support for ESG adoption likewise operates through incentives rather than mandates. The Domestic Investment Accelerator Fund for ESG Adoption (DIAF-ESG), introduced in 2024, offers matching grants of up to RM500,000 for ESG certification, disclosure and data systems; logistics services qualify as an eligible sector, yet port terminal operations are not a named category, and the exclusion of firms with more than 20% ownership by listed or government-linked companies removes most terminal operators from scope (MIDA, 2025). The instrument therefore encourages voluntary adoption at the firm level and creates no obligation at the port level. The i-ESG

Framework limits its first phase to manufacturing, and a senior trade ministry informant confirmed that ports fall outside it:
"Ports are not under manufacturing. They are not." (P14)
An enforcement-side informant identified the practical consequence. Without a legal duty, compliance rests on the commitment of each organisation's top management:
"Another issue is that it operates on a voluntary basis. There is no enforcement that compels anyone to enforce halal compliance." (P11)
The same informant proposed a legislative remedy: a standalone halal act, which would convert the voluntary default into a binding obligation.

No instrument links ESG and halal requirements
The third gap is the absence of an integrated standard. ESG compliance in Malaysia currently draws on separate management-system standards, such as ISO 14001 for environmental management and ISO 37001 for anti-bribery, alongside reporting rules for listed firms, and none of these instruments addresses halal logistics or the port context. A standards official put it plainly:
"On ESG itself there is no standard. The components probably exist. Environmental management systems relate to ESG... anti-bribery under governance could also be considered ESG." (P13)

Documentary analysis revealed the same pattern at the policy level. The Halal Industry Master Plan 2030 provides for halal logistics infrastructure yet contains no indicator for ESG-halal integration in ports; the Green Technology Master Plan addresses environmental sustainability without any connection to halal certification. The reviewed policy documents contain limited formal cross-referencing between halal logistics and ESG requirements.

How the three ports experience the gaps
Comparison across the three ports shows how differently the same vacuum plays out. At Port Klang, the terminal operator Northport has built halal and ESG activity on its own initiative, operating a JAKIM-certified halal warehouse and a formal ESG framework, yet the Port Klang Authority confirmed that halal logistics sits outside its organisational mandate, so progress there reflects internal commitment rather than governance. At Johor Port, a halal containerisation initiative reached an advanced stage, including a halal container code in the terminal operating system and a draft standard operating procedure, before stalling when the individual champion who drove it relocated; the institution has not revived it. Kuantan Port has gone furthest in formal engagement: it completed a domestic halal shipping trial in 2024, submitted a halal port-ecosystem framework to the Pahang state government, and presented a halal-friendly port proposal to a national joint committee in 2025. Even so, it operates without any certification scheme or regulatory mandate. Table 4 summarises these cross-port differences in halal-related initiatives, ESG activities, regulatory basis and the main institutional constraint observed at each port.

The pattern is consistent. Every port shows some initiative; none acts under a formal requirement. Variation between the ports reflects internal motivation, resources and network position rather than regulation, which renders progress fragile: it depends on individuals and market pressure, and both can vanish, as Johor Port illustrates.

At Johor Port, a halal containerisation initiative reached an advanced stage, including a halal container code in the terminal operating system and a draft standard operating procedure, before stalling when the individual champion who drove it relocated; the institution has not revived it. Alongside this, the port has established a Sustainability Framework and Roadmap and implemented several environmental initiatives (Johor Port Berhad, 2025).

Kuantan Port has gone furthest in formal engagement: it completed a domestic halal shipping trial in 2024, submitted a port halal-ecosystem framework to the Pahang state government, and presented a halal-friendly port proposal to a national joint committee in 2025. Its sustainability activities are also formalised through the Green Port Policy 2021-2030 and related corporate sustainability reporting (Kuantan Port Authority, 2021; IJM Corporation Berhad, 2025, 2026).

Table 4
Comparison of Ports Structure Analysis

Dimension	Port Klang	Johor Port	Kuantan Port
Halal-related initiative	• Certified warehouse for selected logistics operations (JAKIM-certified)	• Halal containerisation initiative in collaboration with industry partners (pilot phase)	• Halal shipping trial for halal cargo routes (pilot phase)
ESG activity	• Corporate ESG framework aligned with Bursa Malaysia guidelines	• Sustainability Framework & Roadmap; cleaner biodiesel; electrified internal mobility fleet; LED lighting; 2.1 MWp solar system	• Green Port 2030; Energy Management System; water reuse; recycling; biodiversity conservation
Regulatory basis	• Voluntary	• Voluntary	• Voluntary
Main constraint	• Mandate boundary	• Reliance on organisational initiatives rather than a formal halal-ESG regulatory mandate	• No dedicated port-specific halal certification pathway

Note: Information is derived from interview evidence and documentary analysis. ESG evidence for Johor Port is supported by Johor Port Berhad (2025), while Kuantan Port evidence is supported by Kuantan Port Authority (2021) and IJM Corporation Berhad (2025, 2026).

ESG awareness and understanding among stakeholders

The second objective assessed the level of ESG awareness and understanding among halal logistics providers and related port stakeholders. Four patterns emerged.

Awareness is concentrated at the policy level

ESG awareness varies sharply across the governance hierarchy. At the policy and standards level, it is high and precise, and the halal industry development agency has formally mapped the overlap between halal standards and ESG frameworks:

"We took a Venn diagram and mapped the United Nations principles, Global Compact principles, and ESG. The commonalities were more numerous than the differences." (P16)

Trade ministry informants independently endorsed this alignment, confirming their view that halal compliance implicitly satisfies ESG requirements across all three pillars. The certification authority identified the *tayyiban* principle as the bridge mechanism through which halal already incorporates environmental hygiene, animal welfare and waste management, and standards officials displayed detailed knowledge of the ESG standards landscape, including the transition to reporting standards aligned with international financial reporting frameworks.
Awareness falls sharply at the operational level. One officer holds responsibility for halal enforcement at port entry points. Asked about ESG, the officer responded:
"I rarely hear about ESG. Environment. What is the rest?" (P10)

The contrast is striking. The officials who design halal standards understand the ESG-halal alignment well; the officers who enforce halal compliance at the port gate do not know what ESG is. This matters for any future reform, because even a well-designed integration framework would be likely to fail at implementation without substantial capacity building at the operational level.

A narrow reading of ESG
Where awareness exists below the policy level, it is partial. Participants understood ESG mainly through its environmental pillar; several treated it as a synonym for green certification or carbon reporting, and few connected it to governance, meaning transparency, accountability and regulatory compliance. This is the reverse of what integration needs. The governance pillar maps most directly onto halal certification, yet operators understand it least. The narrow reading is unsurprising, since Malaysian ESG discourse has historically emphasised the environmental dimension, but its effect is serious: the strongest point of contact between the two systems remains largely invisible to the people who would have to use it.

The halalan-tayyiban bridge
The most important awareness finding concerns the conceptual convergence between *halalan-tayyiban* and ESG. Senior informants at the certification authority, the industry development agency and the standards body all recognised it clearly: the *tayyiban* element already carries requirements for waste management, hygiene and animal welfare, exercise described above found more commonality than difference between halal values and ESG criteria.

The recognition, however, exists only in institutional understanding; it has no documentary form. No Malaysian halal standard cross-references any ESG framework, and no ESG framework references any halal standard. Documentary analysis confirmed this in the text of the standards themselves: MS 1500:2019 contains *tayyiban* provisions on environmental cleanliness, waste management and ethical sourcing that map directly onto ESG environmental and social criteria, yet the standard makes no mention of ESG, and no ESG instrument mentions MS 1500. The bridge is visible to those who look for it. It has not been formally built. A recent policy signal suggests the moment may be favourable: at the 2025 Global Halal Summit, Malaysia positioned halal as a model for sustainable, inclusive and ethical growth (Business Today, 2025). The framing has reached the highest policy level. It has not yet reached the text of any standard.

The size gap

A final pattern concerns organisational scale. Interview evidence indicated that standards compliance and ESG familiarity were stronger among larger organisations than among smaller providers. Because the specific national percentages mentioned during the interviews could not be independently verified from a published source, they are not treated here as national statistics. The qualitative pattern nevertheless suggests that large firms are more exposed to international clients, parent-company ESG requirements and investor scrutiny and are more likely to maintain specialised compliance capacity. Smaller providers may face weaker external pressures and fewer resources for developing ESG-related knowledge. Awareness should therefore be understood not only as a knowledge issue but also as a question of institutional pressure and organisational capacity.

Discussion

The findings cohere into a single structural account. The first objective exposed a governance vacuum with three layers: certification schemes stop short of port terminals, sector legislation confers binding force on no standard at the port level, and nothing in the regulatory architecture connects halal with ESG requirements. The second objective revealed an awareness gradient that maps onto this vacuum; understanding is rich where ESG obligations already exist, at the policy level and in large firms, and thin where they do not, at the operational level and in small firms.

Institutional theory explains both why the vacuum persists and why it produces the awareness pattern we observed. Organisations conform to the institutional environment around them (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Galleli & Amaral, 2025); where no mandate requires halal or ESG compliance at the port level and no scheme rewards voluntary adoption, non-adoption becomes the institutional default, a predictable structural outcome rather than a failure of individual organisations. The evidence from the three ports strengthens this reading. The ports differ widely in initiative, yet all three operate without obligation, and the most advanced initiative collapsed when one champion left. Voluntary effort under an institutional vacuum is real but fragile.

This account carries a clear implication for policy. Treating the problem as one of awareness addresses a symptom; training and information campaigns are unlikely to suffice, because the structural conditions that generate awareness, regulatory requirements, institutional norms and client expectations, must exist first. Three steps follow from the findings. First, extend halal certification to ports terminal, whether through a new scheme or additional part of MS 2400. International standardisation provides a relevant reference point, as SMIIC is currently developing OIC/SMIIC DS 17-4, Halal Supply Chain Management System – Part 4: Port – General Requirements (SMIIC, 2026). A Malaysian port standard could therefore be developed with the attention to this emerging international standard while remaining responsive to the national regulatory and operational context. Second, give the standard legal force by citing it in sector legislation, the route informants themselves proposed. Third, build the *halalan-tayyiban* bridge formally through a governance instrument that cross-references the *tayyiban* provisions of the halal standards with ESG criteria. The documentary analysis shows that the substantive requirements already exist in the halal standards; what is missing is an authoritative mapping. A formal mapping could identify areas of overlap between halal certification and selected ESG criteria, reduce duplication in evidence collection and reveal which ESG requirements remain outside the scope of halal standards. It should complement rather than replace ESG assessment and reporting. Existing support instruments can also serve this agenda: the DIAF-ESG grant already funds ESG certification and data systems for small and mid-tier logistics firms (MIDA, 2025) and aligning such instruments with a port mandate would address the capacity gap identified in the Findings.

Recent developments in Malaysia's halal governance indicate growing institutional attention to the coordination gap identified in this study. In 2025 the Malaysian Cabinet agreed in principle to establish a Malaysian Halal Commission under the Prime Minister's Department, into which the Halal Development Corporation would be absorbed (Bernama, 2025; Malay Mail, 2025a); if enacted, such a body would hold precisely the horizontal coordination mandate whose absence this study documents. The framing at the 2025 Global Halal Summit, noted above, signals parallel movement in policy discourse. Neither development has yet produced enacted law. The vacuum described here therefore persists, but the mechanism to close it has entered formation.

From a service-management perspective, the regulatory gap creates inconsistency across interconnected service encounters. Halal integrity depends on coordinated performance by port authorities, terminal operators, warehouse providers, inspection agencies and transport firms. Where no common service standard defines responsibility at the terminal interface, assurance becomes dependent on individual organisations rather than the service system as a whole.

The institutional implications of these findings extend beyond the Malaysian context. Other jurisdictions demonstrate different approaches to institutionalising halal requirements within trade and logistics systems. European ports were among the earlier adopters of halal handling facilities, with initiatives reported in Rotterdam, Zeebrugge and Algeciras between 2007 and 2019, while Indonesia has moved towards a more mandatory approach by extending halal certification requirements to the food industry and associated logistics activities (Tieman, 2024). At the same time, port systems internationally continue to face fragmented mandates and reliance on voluntary sustainability standards (Iwuoha et al., 2022; Monios, 2019). The Malaysian case illustrates how two value-based governance systems with substantial conceptual overlap can remain institutionally separate in the absence of a connecting mechanism. More broadly, compatibility between halal and ESG does not itself produce integration; an institutional mechanism is required to assign responsibility, establish requirements and coordinate implementation.

Conclusion

This paper looked to identify the regulatory and institutional gaps affecting ESG integration in halal port logistics in Malaysia and to assess ESG awareness among the stakeholders involved. Drawing on sixteen interviews across three federal ports, supported by documentary analysis, the study identified a three-layer governance vacuum: no halal certification scheme currently covers port-terminal operations, no relevant halal standard has binding force at the port level, and no formal instrument connects halal and ESG requirements. ESG awareness mirrored this institutional structure, being strongest among policymakers and standards officials, weaker among operational and enforcement stakeholders, and uneven between large and small firms.

The study contributes to the service management and sustainability literature in three ways. First, it documents an institutional blind spot at the intersection of two major governance systems through evidence that combines stakeholder testimony and documentary analysis. Second, it explains variation in ESG awareness as a product of institutional structure rather than solely of individual or organisational knowledge. Third, it identifies the *halalan-tayyiban* principle as an existing conceptual bridge between halal governance and ESG that has yet to be formally institutionalised, providing a practical basis for their integration.

The findings also support five practical policy recommendations. DSM should coordinate a technical mapping of MS 2400 against relevant ESG criteria; JAKIM and HDC should determine an appropriate certification pathway for port terminals; MOT and port authorities should assess mechanisms for giving terminal-level requirements regulatory force through licences, concession agreements or port by-laws; MITI should strengthen sector-specific ESG guidance and support for logistics and port operators; and the resulting framework should be piloted at one port before wider adoption. Together, these measures could move halal port governance from fragmented voluntary initiatives towards a more coordinated institutional framework, while preserving the distinct functions of halal certification and ESG assessment. The study has several limitations. The sixteen interviews provided sufficient coverage of the principal themes identified across the stakeholder groups, but the sample does not represent all organisations involved in Malaysian port and halal governance. Several invited organisations could not be reached directly, although documentary analysis provided complementary evidence on their formal roles and regulatory positions. The findings are also confined to Malaysian federal ports; state ports and port systems in other jurisdictions may operate under different institutional arrangements. Future research should examine the proposed certification and cross-referencing mechanisms if relevant policy reforms are introduced, assess the institutional implications of the proposed Malaysian Halal Commission if it is established, and extend comparative analysis to other halal trading economies. Companion work from the wider study examines provider readiness for ESG implementation and the development of an integrated governance framework.

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Conflict of Interest Statement
The authors declare that they have no financial or non-financial conflicts of interest relevant to this study.

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