

Research Article

SPS/TBT Halal Certification and SME Export Performance: Implications for Global Market Access

Moch. Ainol Kavil^{1*}, Nur Fadillah², Nur Kholis³, Siti Musfiqoh⁴

¹ Pascasarjana, Fakultas Ekonomi dan Bisnis Islam, Universitas Islam Negeri Sunan Ampel, Surabaya, Indonesia, 60239; email : mochainolkavil57@gmail.com

² Pascasarjana, Fakultas Ekonomi dan Bisnis Islam, Universitas Islam Negeri Sunan Ampel, Surabaya, Indonesia, 60239; email : lylanf13@gmail.com

³ Pascasarjana, Fakultas Ekonomi dan Bisnis Islam, Universitas Islam Negeri Sunan Ampel, Surabaya, Indonesia, 60239; email : nurkholis@uinsa.ac.id

⁴ Pascasarjana, Fakultas Ekonomi dan Bisnis Islam, Universitas Islam Negeri Sunan Ampel, Surabaya, Indonesia, 60239; email : sitimusfiqoh@uinsa.ac.id

* Corresponding Author: Moch. Ainol Kavil

Abstract: Indonesian SMEs face significant obstacles in penetrating the global market due to differences in halal certification standards across countries, which create high compliance burdens, both in terms of costs, process duration, and limited cross-jurisdictional recognition. These obstacles are not only administrative but also have a direct impact on export performance, particularly in terms of lead time, volume, and delivery reliability. This article aims to analyze halal certification within the framework of the WTO's Sanitary and Phytosanitary Measures (SPS) and Technical Barriers to Trade (TBT) as a dual factor, as it has the potential to act as both a barrier and an instrument for ensuring the quality of global trade. This research employs a qualitative method, utilizing a library research approach that draws on academic literature, international reports, and policy documents published between 2015 and 2025. Data were obtained from searches of reputable databases, including Scopus, Web of Science, ScienceDirect, and official documents from the WTO, BPJPH, and SMIIC/OKI. These data were then analyzed to develop a conceptual framework. The study results indicate that compliance with international halal certification significantly impacts the export performance of SMEs. The performance is primarily achieved through cost reduction mechanisms, process acceleration, cross-border recognition, and the implementation of digital traceability, thereby strengthening importer confidence. In conclusion, halal certification cannot be viewed as merely a technical issue, but rather a structural challenge that requires harmonization of standards, MRA diplomacy, and the adoption of technological innovation so that SMEs can increase their competitiveness in the global value chain.

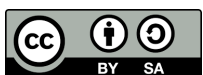
Keywords: Halal Certification; Non-Tariff Measures; SMEs; SMEs Export Performance; SPS/TBT.

1. Introduction

Indonesian small and medium enterprises (SMEs) continue to face structural barriers when attempting to penetrate global markets, particularly in Muslim-majority countries such as Malaysia, the United Arab Emirates, and Saudi Arabia. One of the most persistent obstacles lies in the fragmentation of halal certification standards across jurisdictions (Lutfi, 2025). Variations in certification authorities, process duration, cost structures, and technical requirements often create high compliance burdens that disproportionately affect SMEs with limited resources (Vasani & Abdulkareem, 2024). This divergence not only imposes administrative complexity but also directly undermines export performance by delaying shipments, increasing transaction costs, and reducing delivery reliability.

While halal certification is intended to assure product integrity, in practice, the absence of mutual recognition and harmonized standards renders it a de facto non-tariff barrier (NTB). Muslim-majority importing countries frequently adopt heterogeneous halal regimes, ranging from differences in slaughtering methods to laboratory testing protocols, with limited

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reciprocity in recognizing domestic certification bodies (Alanazi et al., 2024). Consequently, Indonesian exporters often face duplicative audits and recertification processes, further eroding competitiveness and market flexibility (Development Bank with contribution from UNESCAP, 2024).

Most of the existing literature has examined halal certification within national contexts, focusing on consumer preferences, domestic governance, and institutional arrangements (Husin et al., 2024). Although valuable, these studies have not systematically mapped how cross-border regulatory configurations under the WTO Sanitary and Phytosanitary Measures (SPS) and Technical Barriers to Trade (TBT) frameworks influence SME export performance. In particular, the dynamic interaction between certification costs, process duration, importer trust, and cross-border recognition has received limited scholarly attention (Fathoni et al., 2025). This gap creates a pressing need for an interdisciplinary approach that integrates perspectives from trade law, transaction cost economics, trust signaling, and global value chains.

This study aims to address that gap by situating halal certification explicitly within the SPS/TBT regime and analyzing its dual role as both a potential trade barrier and a quality assurance mechanism in global commerce. By synthesizing literature from 2015 to 2025, the article develops a conceptual framework that highlights four interrelated impact indicators: (i) certification process duration, (ii) compliance costs, (iii) cross-border recognition, and (iv) importer confidence. This framework not only clarifies the causal pathways through which halal certification shapes SME export performance but also provides a policy matrix for mitigating compliance barriers through harmonization, mutual recognition arrangements (MRAs), and digital traceability innovations (Yue, 2024).

Three central research questions guide the study. First, does the SPS/TBT regime for halal certification significantly impact the compliance cost structure and process duration of SMEs? Second, to what extent do cross-border recognition and traceability mechanisms influence importer confidence and market access? Third, which variables most strongly determine SME export performance in international markets?

By explicitly linking WTO frameworks to SME competitiveness in the halal industry, this research helps bridge the gap between regulatory theory and trade practice. The findings are expected to be relevant for policymakers, certification bodies, and SMEs alike, offering insights into how Indonesia can enhance its role in the global halal value chain through standard harmonization, technical diplomacy, and technology adoption.

2. Literature Review

WTO Framework: NTMs, SPS, and TBT

In the context of globalization, non-tariff measures (NTMs) have become increasingly influential in shaping the flow of international trade. NTMs encompass a diverse range of regulatory instruments, including technical standards, certification procedures, labeling requirements, and health and safety regulations, all of which directly or indirectly impact cross-border transactions (Karagulle et al., 2025; Timini & Conesa, 2019). Under the framework of the World Trade Organization (WTO), the two most significant categories of NTMs are the *Sanitary and Phytosanitary Measures* (SPS) and the *Technical Barriers to Trade* (TBT) (Ghodsi & Stehrer, 2022). SPS provisions focus on protecting human, animal, and plant health from biological risks, while TBT provisions encompass technical regulations and conformity assessments that fall outside SPS but shape international trade (WTO, 2020).

Halal certification occupies a unique position within this framework. From the perspective of food safety and health, including hygiene, slaughtering methods, and the validity of additives, halal tends to fall under the SPS domain. Conversely, when it concerns quality claims and labeling, such as the halal logo on packaging, it aligns more closely with TBT (Adiwibowo, 2020). Hence, halal certification plays a dual role: on the one hand, it operates as a consumer protection instrument requiring transparency and compliance with moral values; on the other, it functions as a pillar of fair trade in a global ethical economy (Nisa et al., 2025). Yet, differences in standards and institutions across jurisdictions, along with the absence of harmonization, frequently transform halal certification from a facilitator into a barrier to trade (Hamid et al., 2023; Kurniawan et al., 2025).

Transaction Cost Economics (TCE) and Compliance Costs

Oliver Williamson's Transaction Cost Economics (TCE) framework emphasizes that transaction costs determine organizational choices and competitiveness (Marneffe et al., 2019). In halal trade, compliance costs include third-party audits, laboratory testing, raw material traceability, and cross-jurisdictional administration (Mahama et al., 2020). Lengthy certification processes in destination markets create significant opportunity costs for businesses, particularly SMEs. Where domestic halal certification lacks recognition abroad, firms are often required to undergo recertification, creating a double compliance burden. This situation inflates cost structures, reduces price competitiveness, and lengthens lead times for fulfilling orders (UN ESCAP, 2023).

Beyond direct financial expenditures, transaction costs in halal certification also manifest in relational and coordination inefficiencies. SMEs often struggle with fragmented bureaucratic procedures, language barriers, and inconsistent documentation requirements across jurisdictions. These hidden costs, though less visible than laboratory fees or audit charges, can consume substantial managerial resources and divert attention from productive activities such as innovation and market development. Cassia & Magno (2022) and Fathoni et al. (2025) note that such frictions erode organizational flexibility, prompting SMEs to adopt short-term compliance strategies that undermine their long-term competitiveness. In this respect, halal certification under fragmented recognition regimes exemplifies Williamson's proposition that transaction costs extend beyond financial outlays to include governance and institutional frictions that fundamentally shape firm behavior in international trade.

Signaling Theory and Trust in Halal Labels

From the perspective of information economics, halal certification functions as a signal in markets characterized by information asymmetry. Importers and consumers cannot directly observe production processes or the integrity of inputs, which creates uncertainty regarding product quality. Certification issued by credible authorities reduces this uncertainty by offering a visible and verifiable assurance of compliance with religious and quality standards (Woolcott Oyague & Ramírez Gómez, 2024). In this way, halal certification is more than a religious symbol; it represents a market signal that communicates reliability, safety, and ethical adherence. Empirical studies confirm that when certification is recognized, it increases consumer confidence, facilitates trade flows, and strengthens the perceived value of products in international markets (Abbas et al., 2025; Shirono et al., 2022).

However, the effectiveness of certification as a signal depends largely on the credibility and recognition of the issuing authority. Suppose a certification body lacks an international reputation or is not recognized by importing countries. In that case, the signal loses strength and may even become a barrier, requiring exporters to undergo duplicative processes. Trust theory suggests that importer confidence is built not only through the presence of certification but also through the transparency, consistency, and institutional credibility of certifying agencies (Bondi & Poppi, 2025). In practice, this means that halal certification is relational, establishing trust between exporters and importers, but only when embedded in robust institutional frameworks and transparent governance. Without such credibility, the halal label risks being reduced to a formality, with limited power to expand market access or enhance competitiveness.

Global Value Chains (GVC) and Upgrading

Within the global value chain (GVC) paradigm, firms participate in segmented stages of production that are geographically dispersed across multiple countries (Shuabiu et al., 2021). In this context, halal certification functions as a compliance node, a checkpoint that determines whether a product can progress along the chain and reach specific market destinations. Meeting halal standards secures access to targeted consumer segments, particularly in Muslim-majority countries, while non-compliance effectively excludes firms from lucrative markets. Compliance can also stimulate process upgrading, as firms adopt more efficient production methods to meet stringent requirements, and functional upgrading, as they expand into higher-value activities such as branding, product design, and after-sales services (Chavez & Vicente, 2025). In this sense, halal certification is not merely restrictive but also an enabler of competitive repositioning within global production networks.

Technological innovation has amplified this role by embedding transparency into the supply chain. Digital traceability tools, including blockchain-based halal systems, QR-code verification, and IoT-enabled monitoring, enhance the auditability of compliance claims and

reduce the risk of fraud (Wahab et al., 2025). For SMEs, such systems offer a strategic advantage by demonstrating reliability to global buyers, thereby reducing the likelihood of border rejections and enhancing bargaining power in international markets (Epede & Wang, 2022). Conversely, the absence of traceability mechanisms undermines the credibility of certification, particularly in markets such as the EU, where regulators and consumers are increasingly demanding auditable digital records (Lam et al., 2025). The integration of halal standards into GVCs, therefore, illustrates a dual logic: while it imposes new obligations, it simultaneously opens pathways for SMEs to advance up the value chain by transforming compliance into a source of differentiation and trust.

Institutions, Accreditation, and Cross-Country MRAs

The absence of strong and reciprocal Mutual Recognition Arrangements (MRAs) is one of the most persistent barriers to the global recognition of national halal certificates (Johan & Schebesta, 2022). Without MRAs, Indonesian exporters are compelled to undergo recertification processes in destination markets, which undermines efficiency and reduces competitiveness. This duplicative burden not only increases costs but also weakens the predictability of export procedures, discouraging SMEs from pursuing international opportunities. Attempts at global harmonization have faced significant challenges, often complicated by divergences in jurisprudential schools, audit methodologies, and quality management systems (Akbar et al., 2023). These variations result in fragmented regimes that perpetuate trade frictions rather than reducing them.

In this context, institutional credibility becomes a decisive factor for achieving recognition. Countries with longstanding reputations for rigorous halal governance, such as Malaysia through JAKIM, have been able to secure wider acceptance of their certificates across multiple regions. By contrast, Indonesia's BPJPH, as a relatively new institution, is still in the process of consolidating its authority and international reputation. To address these disparities, technical diplomacy and the strengthening of foreign policy instruments are essential. Bilateral and multilateral engagement through the WTO-SPS/TBT committees, OIC/SMIIC standardization efforts, and regional economic partnerships represent key avenues for expanding recognition of Indonesian halal certification (Syahr et al., 2024). Such initiatives are not merely procedural but strategic, shaping how national institutions are embedded in global value chains and how SMEs are enabled or constrained in their access to international markets.

Research Gaps

Despite the rapid expansion of scholarship on halal certification, important gaps remain. Much of the literature focuses on domestic governance or consumer preferences, neglecting the cross-border regulatory dynamics under SPS/TBT and their direct impact on trade performance (Alanazi et al., 2024). There is still no systematic mapping that links compliance costs, certification duration, importer trust, and recognition to concrete export indicators such as lead times, rejection rates, and trade volumes. This condition underscores the necessity for an interdisciplinary approach that not only addresses halal certification as a regulatory instrument but also incorporates economic and managerial analysis (Rofiah et al., 2024).

The integration of international trade law, Transaction Cost Economics, trust theory, and GVC strategies is thus crucial to capture both the constraints and opportunities presented by halal certification (Johan & Schebesta, 2022). Through such an approach, analysis can move beyond normative considerations to explore empirically how costs, time, and cross-border recognition shape SME export performance. This study addresses that gap by systematically mapping halal certification within the SPS/TBT framework and developing a conceptual framework to demonstrate its impact on SME competitiveness in global markets.

3. Method

This research employs a qualitative approach, utilizing a library research method, which is suitable for synthesizing knowledge from diverse sources and constructing a conceptual framework, rather than testing hypotheses empirically. According to Snyder (2019), library research is particularly appropriate for studies that aim to build theoretical models by integrating insights from existing literature. In the context of international trade and halal certification, where cross-country empirical data are often fragmented and difficult to access,

literature-based inquiry provides a systematic approach to identifying structural linkages and conceptual pathways.

Data collection was carried out by reviewing scholarly articles, policy reports, books, and official documents published between 2015 and 2025. The primary sources included international academic databases such as Scopus, Web of Science, ScienceDirect, SpringerLink, and Wiley Online Library, complemented by institutional reports from the World Trade Organization (WTO), Indonesia's Halal Product Assurance Agency (BPJPH), and the Standards and Metrology Institute for Islamic Countries (SMIIC) under the Organization of Islamic Cooperation (OIC). Literature selection was guided by three criteria: relevance to the intersection of halal certification and international trade, credibility of the source, and contribution to the analytical framework (Webster & Watson, 2002).

The analysis was conducted through descriptive and analytical reading. Sources were classified according to thematic categories, including WTO non-tariff measures (SPS/TBT), transaction cost economics, signaling and trust theory, global value chains, and institutional frameworks such as MRAs. These categories were then interpreted to identify mechanisms by which halal certification influences SME export performance, especially in terms of compliance costs, process duration, cross-border recognition, and importer confidence. The findings were synthesized into a conceptual model that integrates these mechanisms into a causal pathway, linking halal certification with SME competitiveness in global markets (Wilson & Liu, 2010).

Although this method provides a structured foundation for theory building, it is not without limitations. The reliance on secondary data means that the conclusions remain conceptual and are not empirically tested through quantitative measurement or field-based qualitative data. Moreover, although the scope of the literature reviewed encompasses ASEAN, the Middle East, and the European Union, the findings may not fully capture regional variations in Africa or Latin America. Nevertheless, by systematically integrating trade law, economics, and management perspectives, this study offers a comprehensive conceptual framework that can serve as a basis for future empirical research.

4. Results and Discussion

Halal Certification as SPS/TBT Non-Tariff Measures

Halal certification operates within the broader domain of non-tariff measures, positioned at the intersection of the WTO's Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT) frameworks. SPS requirements generally concern food safety, animal health, and biological risks, while TBT provisions emphasize conformity with technical standards and labeling (Ghodsi & Stehrer, 2022). Halal regulations straddle these categories, reflecting their dual role as both a public health safeguard and an ethical quality standard (Adiwibowo, 2020; Nisa et al., 2025). In principle, such regulation should facilitate trust, consumer protection, and market stability.

In practice, however, fragmentation of halal regimes across jurisdictions creates inconsistencies that disproportionately affect SMEs. For instance, differences in slaughtering protocols between Malaysia's JAKIM and the UAE's ESMA exemplify how divergent standards complicate cross-border trade (Karagulle et al., 2025). WTO data further indicate that halal-related notifications in the SPS/TBT committees have risen steadily since 2017, highlighting the increasing sensitivity of member states to halal regulation (Hamid et al., 2023). This trend highlights that halal is no longer a marginal religious concern, but has become a mainstream element of global trade governance, shaping not only consumer markets but also the regulatory environment within which SMEs must operate.

Compliance Costs and SME Competitiveness

One of the most tangible impacts of fragmented halal regimes is the burden of compliance costs, which directly affects the competitiveness of SMEs in international markets. When domestic halal certificates are not recognized abroad, firms are often required to undergo duplicative certification, which inflates both financial and temporal costs. Empirical evidence indicates that SMEs with internationally recognized certificates can complete accreditation in an average of 21 days at a cost of around USD 650. In contrast, firms without recognition face procedures that average 45 days and nearly double the price, at approximately USD 1,200 (Mahama et al., 2020; UN ESCAP, 2023). These costs are not merely transactional; they delay export timelines, reduce delivery reliability, and weaken SMEs' ability to compete in markets where timeliness and cost efficiency are decisive. From

the perspective of Transaction Cost Economics (TCE), such inefficiencies confirm the theoretical proposition that high compliance burdens reduce organizational efficiency and undermine market competitiveness (Marneffe et al., 2019).

Beyond direct financial outlays, compliance costs also include less visible but equally significant opportunity costs. Prolonged certification diverts managerial attention from value-creating activities such as product innovation, marketing, or expansion into new markets, forcing SMEs to adopt short-term coping strategies. Studies by Cassia & Magno (2022) and Fathoni et al. (2025) note that these hidden costs accumulate in the form of administrative bottlenecks, coordination frictions, and delays in seizing market opportunities, potentially eroding up to 15 percent of export margins. In this sense, compliance with fragmented halal certification systems not only burdens SMEs with higher operational costs but also constrains their strategic flexibility. For resource-constrained firms in developing economies, such as Indonesia, this dual pressure makes halal certification a structural determinant of competitiveness, reinforcing the argument that reducing transaction costs is a precondition for sustainable participation in global markets.

Cross-Border Recognition and Institutional Credibility

A critical determinant of whether halal certification facilitates or obstructs trade lies in the extent of cross-border recognition. The absence of Mutual Recognition Arrangements (MRAs) between exporting and importing countries forces exporters, particularly SMEs, to repeat certification processes upon entry into new markets. This duplicative requirement not only increases costs but also undermines predictability and efficiency in supply chains (Akbar et al., 2023). Empirical studies show that without MRAs, exporters face longer approval times and heightened uncertainty, factors that directly translate into higher risk premiums and reduced competitiveness. By contrast, reciprocal MRAs streamline market entry, reducing both administrative burdens and costs, and thereby enhancing SMEs' ability to compete in global halal value chains (Syahr et al., 2024).

Institutional theory offers a valuable lens for interpreting these dynamics, emphasizing that the credibility and legitimacy of national certification bodies are crucial in determining the degree of recognition they receive abroad. Malaysia's JAKIM, for example, has successfully leveraged its longstanding reputation to secure recognition across multiple regions, allowing Malaysian exporters to benefit from smoother access to key markets. Indonesia's BPJPH, however, as a relatively new institution, continues to build its international credibility, which limits the immediate recognition of Indonesian certificates. This discrepancy highlights the strategic importance of institutional diplomacy, where governments must actively participate in bilateral and multilateral negotiations through WTO-SPS/TBT committees, OIC/SMIIC standards, and regional trade frameworks to integrate their certification regimes into global governance structures. For Indonesia, strengthening institutional credibility is not simply a matter of technical regulation, but a cornerstone of enhancing SMEs' competitiveness in international trade.

Digital Traceability and Importer Trust

Technological innovation has become an increasingly important dimension of halal certification, with digital traceability emerging as a key determinant of importer trust. Blockchain-based halal systems, QR code verification, and IoT-enabled monitoring tools enable the real-time tracking of inputs and production processes, thereby reducing opportunities for fraud and enhancing the credibility of halal claims (Ali et al., 2021; Wahab et al., 2025). In practice, these systems not only lower border inspection costs but also provide importing authorities with auditable data that strengthens confidence in supply chain integrity. Markets such as the European Union and the Gulf states have placed growing emphasis on traceability, positioning digital assurance mechanisms as complements rather than substitutes for certification. For SMEs, adopting these technologies can represent a decisive competitive edge, signaling transparency and reliability to foreign buyers.

From the perspective of signaling and trust theory, traceability enhances the quality of the halal label as a market signal by reducing information asymmetry. Without verifiable digital systems, even formally certified products may face skepticism or delays, especially in high-value markets where regulatory scrutiny is strong (Lam et al., 2025; Wang & Yi, 2025). Conversely, robust traceability mechanisms strengthen importer trust by demonstrating consistency, transparency, and accountability in production and distribution. For SMEs, this transformation means that halal certification is no longer limited to paper-based compliance

but extends into digitally auditable governance. Such systems, while requiring upfront investment, can reduce long-term transaction costs, facilitate access to premium markets, and secure enduring trade relationships. This suggests that importer trust in the halal economy is increasingly mediated not only by institutional recognition but also by the integration of advanced technological systems within global value chains.

Conceptual Pathways to Export Performance

Synthesizing the above dimensions, halal certification influences SME export performance through multiple interconnected mechanisms: reducing compliance costs, shortening certification duration, strengthening cross-border recognition, and enabling digital traceability. These mechanisms converge on importer trust as a central mediating factor. When an importer trust is established, SMEs benefit from improved delivery reliability, wider market access, greater opportunities for long-term contracts, and, in some cases, the ability to command premium prices. In this way, halal certification is not merely a procedural requirement but a structural determinant of competitiveness within international markets.

Figure 1 presents the proposed conceptual model, which integrates the four mechanisms of halal certification compliance within the SPS/TBT framework into a causal pathway that explains their impact on SME export performance. The model draws upon Transaction Cost Economics (TCE) to highlight how reducing costs and shortening certification time enhance efficiency. Institutional Theory clarifies how MRAs and international accreditation reduce duplicative burdens and improve institutional credibility. From a Global Value Chains (GVC) perspective, digital traceability technologies such as blockchain and IoT systems play a critical role in ensuring transparency and strengthening global buyer confidence. These three perspectives converge on Signaling and Trust Theory, where importer trust mediates the link between compliance and performance outcomes. Ultimately, enhanced importer trust translates into measurable gains in export performance, including greater access to high-value markets, consistent delivery, and stronger bargaining power in international trade relationships.

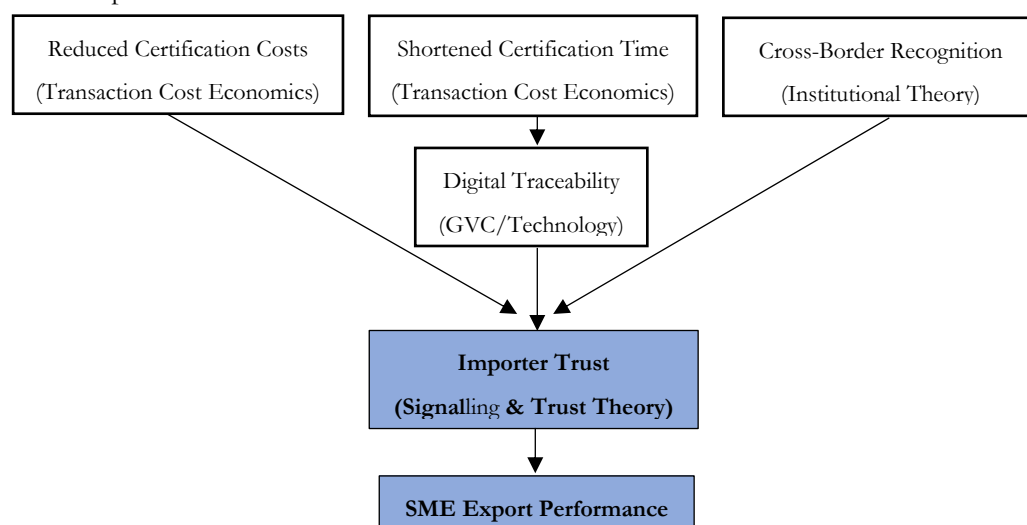


Figure 1. Conceptual Model of Halal Certification and SME Export Performance under SPS/TBT

Implications

The findings of this study generate several important implications that extend across theoretical, practical, and managerial domains. From a theoretical perspective, integrating the SPS/TBT framework with transaction cost economics, trust theory, and global value chain perspectives offers a fresh contribution to the existing literature on non-tariff measures and halal certification. Previous studies have generally treated halal certification as a domestic governance issue or as a matter of consumer preference. By contrast, this study situates halal within the architecture of international trade law and economic regulation, providing a more comprehensive understanding of its dual role as both a barrier and a facilitator of SME competitiveness. This theoretical framing contributes to bridging the gap between regulatory economics and Islamic economic practices, while also expanding the analytical toolkit available for future empirical research.

In practical terms, the findings offer actionable insights for SMEs looking to expand into international markets. The evidence underscores that halal certification should not be viewed merely as an administrative requirement but as a strategic asset. If managed effectively, it can reduce transaction costs, accelerate market entry, and enhance the trust of importers. SMEs are encouraged to adopt affordable digital traceability technologies such as blockchain and QR-code systems, not only to meet regulatory expectations but also to signal credibility in highly competitive markets. Furthermore, selecting certification bodies with recognized reputations and aligning business operations with internationally harmonized standards can substantially reduce the risks of rejection and delays. These practices position halal not as a compliance burden, but as a lever for market differentiation and value-added upgrading.

From a managerial and policy standpoint, the implications extend to governments, certification authorities, and trade regulators. The absence of reciprocal Mutual Recognition Arrangements has been identified as a significant barrier for Indonesian SMEs, suggesting that diplomatic engagement and technical cooperation should be prioritized to enhance cross-border recognition. Policymakers are advised to invest in developing a single-window halal certification platform that integrates BPJPH, customs, and export agencies, thereby simplifying procedures and reducing compliance time. Certification institutions, meanwhile, must enhance transparency and consistency to reinforce their credibility in the eyes of foreign markets. More broadly, strengthening Indonesia's institutional reputation in halal governance is essential if the country is to position itself as a global halal hub.

Together, these implications affirm that halal certification cannot be reduced to a narrow technical process. Instead, it is a multidimensional instrument whose effectiveness depends on the alignment of theory, practice, and policy. By situating halal within global trade frameworks and emphasizing its role in fostering trust and competitiveness, this study lays the groundwork for both academic advancement and the development of strategies that enable SMEs to thrive in the increasingly integrated halal economy.

5. Comparison

The findings of this study align with, but also extend beyond, the existing literature on halal certification and trade. Similar to Mahama et al. (2020) and UN ESCAP (2023), this study confirms that the lack of cross-border recognition leads to duplicative certification processes that increase costs, prolong lead times, and reduce the competitiveness of SMEs. These results also support earlier arguments by Ghodsi & Stehrer (2022) that halal certification, depending on context, can operate simultaneously as a facilitator of trust and a non-tariff barrier under the SPS/TBT regime.

At the same time, the present study diverges from much of the earlier literature, which has often emphasized domestic consumer preferences or governance arrangements (Aprianoro et al., 2024; Husin et al., 2024). By situating halal certification explicitly within the WTO's SPS/TBT framework, this study introduces an international regulatory perspective that is often absent in previous analyses. This comparative angle demonstrates that halal certification should not be viewed in isolation as a religious or consumer-driven requirement, but rather as a structural component of international trade law and global economic governance.

Regionally, the comparison highlights differences in institutional credibility and strategic positioning. Malaysia's JAKIM has successfully negotiated recognition agreements and enjoys a stronger international reputation, whereas Indonesia's BPJPH is still consolidating its standing in the global market. As a result, Indonesian SMEs face greater difficulties in achieving acceptance of their halal certificates abroad. In contrast, Gulf Cooperation Council (GCC) states, supported by ESMA in the UAE, have tightly embedded halal requirements within their national trade policies, making certification both a prerequisite and a competitive advantage. Meanwhile, the European Union has increasingly emphasized the importance of traceability and digital assurance systems, positioning technology as a complement to certification in securing consumer trust.

The conceptual model developed in this study also extends prior theoretical work by integrating transaction cost economics, signaling and trust theory, and global value chain analysis. While earlier studies have tended to analyze halal certification through a single lens, such as cost analysis, consumer perception, or institutional arrangements, this study provides a more holistic framework that captures the interconnections between cost, time, recognition, traceability, and importer trust. The comparison thus underscores that halal certification cannot be reduced to a technical process, but must be understood as a strategic determinant

of SME export performance embedded within both institutional diplomacy and global production networks.

6. Conclusion

This study examined halal certification within the framework of the WTO's Sanitary and Phytosanitary Measures (SPS) and Technical Barriers to Trade (TBT), focusing on its implications for the export performance of small and medium enterprises (SMEs). The synthesis of recent literature confirms that halal certification is not merely a technical requirement, but a structural element of international trade that directly affects compliance costs, process duration, cross-border recognition, and the trust of importers. These factors converge on trust as the mediating mechanism that determines whether halal certification functions as a barrier or as an enabler of global market access.

The conceptual model developed in this study highlights four pathways through which halal certification influences SME competitiveness: reducing certification costs, shortening process duration, strengthening cross-border recognition, and adopting digital traceability systems. Collectively, these mechanisms foster trust among importers, which translates into enhanced market access, improved delivery reliability, long-term contractual stability, and opportunities for premium pricing. In this respect, halal certification emerges as both a regulatory challenge and a strategic opportunity for SMEs navigating global value chains.

The findings contribute theoretically by integrating perspectives from trade law, transaction cost economics, trust signaling, and global value chain analysis, offering a more holistic understanding of halal certification as part of non-tariff measures. Practically, they suggest that SMEs should treat halal certification as a strategic asset, investing in technology and aligning with recognized standards to enhance their credibility. From a policy and managerial standpoint, the study underscores the urgency of strengthening institutional credibility, negotiating Mutual Recognition Arrangements, and developing integrated certification systems to enhance efficiency and recognition in global markets.

Nevertheless, this study remains limited by its reliance on secondary sources and by its regional focus on ASEAN, the Middle East, and the European Union. Future research should therefore extend the analysis to regions such as Africa and Latin America, incorporate primary data through surveys or interviews with SMEs and certification bodies, and empirically test the proposed conceptual model through comparative or quantitative approaches. Such studies would provide deeper insights into the causal mechanisms linking halal certification and export performance, while also offering evidence-based strategies for SMEs and policymakers seeking to strengthen participation in the global halal economy.

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