

The Development of the Halal Industry in Indonesia: An Analysis of Innovation and Export Potential

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ARTICLE INFO	ABSTRACT
Keywords: Halal Industry, Innovation, Export Potential, Indonesia, Industry Development	<i>This systematic literature review examines the development of Indonesia's halal industry, focusing on the role of innovation and its contribution to export potential. Through a comprehensive analysis of 17 recent studies (2019–2024), the research investigates key innovations driving industry development and their impact on enhancing Indonesia's position in the global halal market. The review identifies several significant innovations, including digital traceability systems, the Penta Helix collaboration model, specialized halal industrial zones, and simplified certification processes. These innovations have demonstrated substantial contributions to export growth through improved product quality, enhanced market access, and strengthened competitive advantages. The findings reveal that successful export expansion requires a comprehensive approach to innovation encompassing technological advancements, process improvements, and strategic market development. The study highlights the importance of stakeholder collaboration, regulatory framework development, and sustainability integration in driving industry growth. While challenges remain, particularly in standardization and regulatory compliance, the research suggests that continued innovation across all aspects of the halal industry is crucial for maintaining and expanding Indonesia's export potential in the increasingly competitive global halal market. The review contributes to the understanding of how innovation drives halal industry development and provides practical implications for stakeholders seeking to enhance Indonesia's position in the global halal trade.</i>

INTRODUCTION

The global halal industry has emerged as one of the fastest-growing consumer segments worldwide, with significant implications for international trade and economic development (Abbas et al., 2025; Abdullah, 2020; Azam & ABDULLAH, 2020; Yul Zamrudi & Il-Hyun, 2022). Indonesia, as the country with the largest Muslim population globally, holds a unique position in this rapidly expanding market. The convergence of technological advancement, changing consumer preferences, and increasing awareness of halal products has created new opportunities and challenges for Indonesia's halal industry development (Dilla & Fathurohman, 2021; Fauziyah et al., 2020; Hidayatuloh & Qisthani, 2020; Lestari et al., 2023; Syamsurizal et al., 2020; Wulandari et al., 2023).

The halal industry in Indonesia has expanded beyond its traditional focus on food and beverages to encompass a diverse range of sectors, including pharmaceuticals, cosmetics, personal care products, tourism, and financial services. This expansion reflects a broader global trend in which halal certification has become increasingly important for both Muslim and non-Muslim consumers who associate it with quality assurance and ethical production practices. The industry's growth is particularly significant given Indonesia's demographic

advantage and its potential to become a leading player in the global halal market (Hak, Susilawati, & Novriadi, 2024).

Innovation plays a crucial role in developing Indonesia's halal industry, particularly in addressing challenges related to certification, traceability, and market access. The integration of digital technologies, such as blockchain and IoT, has begun to transform how halal products are certified, tracked, and traded. These technological innovations are especially relevant for maintaining halal integrity throughout the supply chain, which is essential for building consumer trust and meeting international standards (Hidayah et al., 2024). Moreover, the adoption of these technologies has become increasingly important in the post-pandemic era, where digital solutions have become integral to business resilience and market competitiveness.

The regulatory framework supporting Indonesia's halal industry has also evolved significantly. The government has implemented various initiatives to strengthen the halal certification process and promote the country's position in the global halal market. These efforts include the development of comprehensive legal frameworks and the establishment of dedicated institutions such as BPJPH (Badan Penyelenggara Jaminan Produk Halal) (Halal Product Assurance Organizing Agency) to oversee halal certification processes. However, the industry still faces challenges in standardization and regulatory compliance, particularly for small and medium-sized enterprises (SMEs) that form a significant portion of the sector (Krisharyanto et al., 2019).

Export potential represents another critical dimension of Indonesia's halal industry development. The country's strategic position within ASEAN and its established trade relationships with Organization of Islamic Cooperation (OIC) member countries provide significant opportunities for market expansion. Recent studies indicate that Indonesia's halal exports could be substantially increased through improved certification processes, enhanced quality standards, and strategic market positioning (Bachtiar et al., 2024). However, realizing this potential requires addressing various challenges, including meeting international standards, overcoming non-tariff barriers, and developing efficient halal supply chain networks.

The intersection of innovation and export potential in Indonesia's halal industry presents a complex landscape that requires careful analysis. Technological advancements, particularly in areas such as blockchain-based traceability systems, have shown promise in enhancing the credibility and efficiency of halal certification processes. These innovations not only support domestic market development but also strengthen Indonesia's position in international halal trade (Hidayah et al., 2024). Furthermore, the development of halal-specific logistics and supply chain solutions has become increasingly important for maintaining product integrity and meeting export market requirements.

The financial sector has also played a crucial role in supporting the industry's development. Islamic finance mechanisms, including zakat and waqf, have emerged as important tools for funding halal industry initiatives and supporting SME development in the sector. These financial innovations have helped address one of the key challenges facing the industry: access to capital for expansion and technological upgrades (Hak, Susilawati, & Novriadi, 2024).

Market dynamics and consumer behavior have also influenced the industry's development trajectory. The growing awareness of halal products among both Muslim and non-Muslim consumers has created new opportunities for product innovation and market expansion. This trend is particularly evident in sectors such as halal tourism, where Indonesia has begun to develop specialized offerings that cater to the specific needs of Muslim travelers while maintaining broad appeal (Hariani & Hanafiah, 2024).

Given these developments and challenges, this systematic literature review aims to examine two critical aspects of Indonesia's halal industry development: innovation and export potential. Specifically, this research seeks to address two fundamental questions: First, what are the key innovations driving the development of the halal industry in Indonesia? This question encompasses technological, regulatory, and market innovations that are shaping the industry's evolution. Second, how do these innovations contribute to enhancing Indonesia's export potential in the global halal market? This question explores the relationship between innovation adoption and export performance in the context of Indonesia's halal industry.

Understanding these aspects is crucial for several reasons. First, it will provide insights into the effectiveness of current innovation strategies in the halal industry and identify areas for improvement (Mohd Yunus et al., 2025; Zafar et al., 2025). Second, it will help policymakers and industry stakeholders develop more targeted approaches to enhancing Indonesia's competitiveness in the global halal market. Finally, it will contribute to the broader academic discourse on the role of innovation in developing religious-based market segments and their integration into global trade networks.

This review is particularly timely given the rapid changes occurring in the global halal market and the increasing importance of digital technologies in maintaining supply chain integrity and market access. By examining recent literature (2019–2024), this study will provide up-to-date insights into the current state of Indonesia's halal industry and its future development potential. The findings will be valuable for policymakers, industry practitioners, and researchers working to enhance Indonesia's position in the global halal market through innovation and strategic export development.

METHOD

This study follows the PRISMA 2020 guidelines to ensure a systematic and transparent approach in identifying, screening, and including relevant literature for review. The methodology was carefully designed to capture a comprehensive understanding of the topic while adhering to rigorous academic standards (Snyder, 2019; Takona, 2024). The process includes four key phases: identification, screening, eligibility, and inclusion, as depicted in the PRISMA 2020 flow diagram (Fig. 1), which uses a template from Page et al. (2021). The search process began by constructing a search string to ensure the retrieval of relevant studies. The string used was: ("halal industry" OR "halal market" OR "halal development") AND ("innovation" OR "export" OR "muslim customer" OR "muslim friendly") AND ("economic growth" OR "economic impact" OR "market potential").

This search was conducted across seven academic databases, including IEEE, Taylor & Francis, ScienceDirect, ACM Digital Library, Scopus, Google Scholar, and Emerald, yielding a total of 7,784 documents. Specifically, the database breakdown is as follows: IEEE contributed 10 documents, Taylor & Francis 65 documents, ScienceDirect 355 documents, ACM Digital Library 4 documents, Scopus 20 documents, Google Scholar 7,330 documents, and Emerald 779 documents. These databases were chosen for their breadth and relevance to business, economics, and Islamic studies.

To refine the search results, duplicate records were first removed, reducing the total number of documents by 355. A timeline filter was then applied, restricting the search to studies published between 2019 and 2024, which resulted in an additional 2,090 records being excluded. This left 5,339 records to be screened based on their titles and abstracts. During the screening phase, a significant number of articles (5,200) were excluded as they did not meet the study's relevance criteria, leaving 139 articles for retrieval. Among these, 20 articles could not be accessed due to availability issues, leaving 119 articles for detailed eligibility assessment.

The eligibility phase involved a thorough examination of the remaining articles to ensure alignment with the study's inclusion and exclusion criteria (Kitchenham & Charters, 2023).

Articles that did not meet these criteria were excluded for reasons such as being non-final publications, non-English studies, or lacking relevance to the core focus of halal industry development, innovation, customer satisfaction, or economic impacts. Ultimately, 102 articles were excluded during this phase, leaving 17 articles that were deemed highly relevant and included in the review. These articles were all published between 2019 and 2024, aligning with the study's timeline and providing a comprehensive basis for analysis.

The flow diagram in Fig. 1 visually represents the systematic process undertaken in this study. It highlights the filtering stages and the rigorous criteria applied at each phase to ensure only the most relevant articles were included in the final analysis. By adhering to these methods, the study ensures reliability and validity in its selection process, providing a robust foundation for the systematic literature review on halal industry development and its impacts.

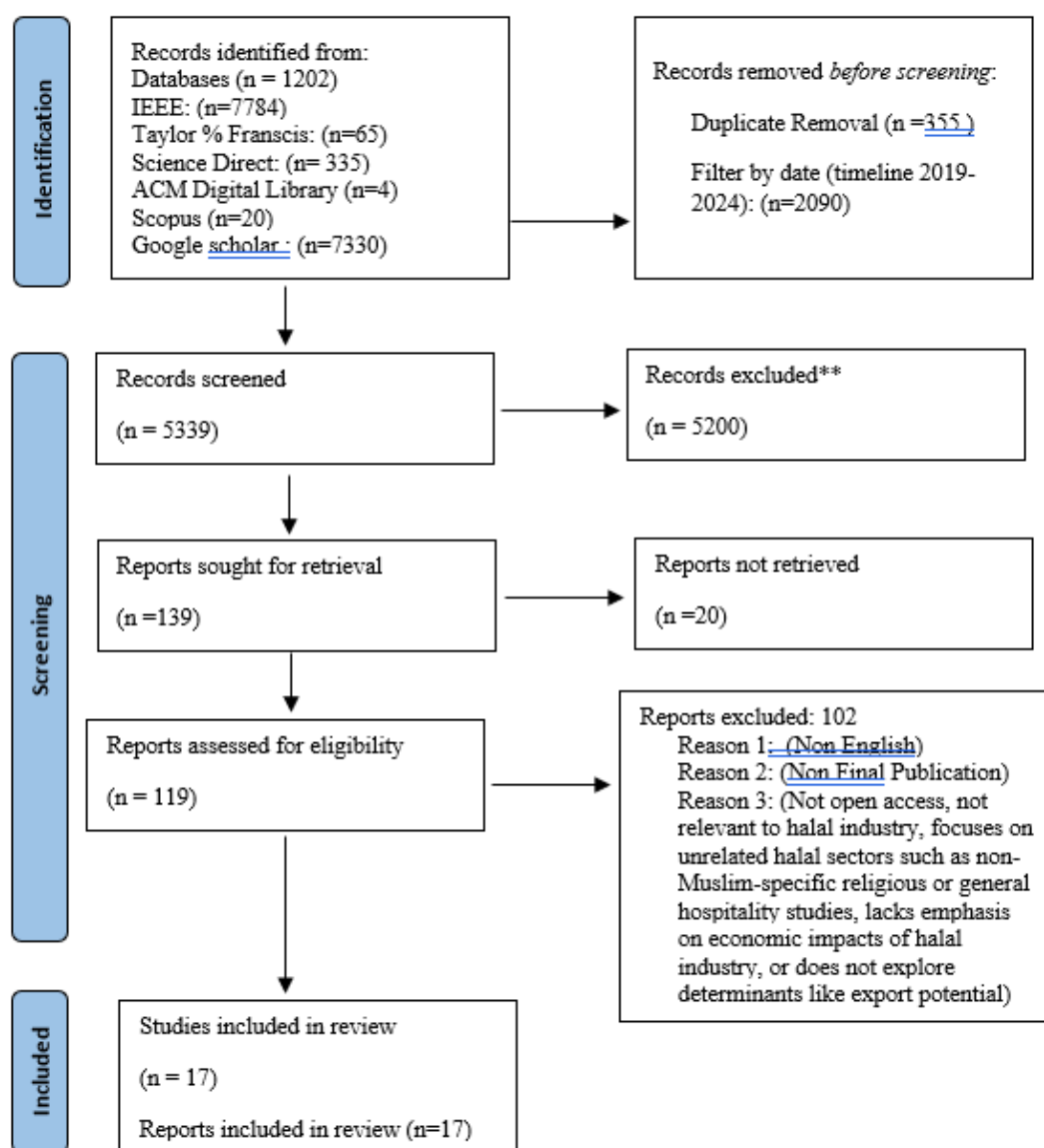


Figure 1. PRISMA 2020 Flow Diagram for Systematic Reviews

The flow diagram in Figure 1 illustrates the step-by-step filtering process of articles included in this systematic review. The identification phase involved extensive searches across major academic databases to ensure comprehensive coverage of relevant literature. Screening excluded articles based on predetermined criteria, such as language and document type. The eligibility phase further refined the selection by excluding articles that lacked full access or

relevance to the topic of halal industry development, innovation, and export potential. The 17 selected articles were determined to meet the study's inclusion criteria, focusing on determinants such as customer satisfaction, loyalty, innovation, and economic impacts within the scope of the halal industry.

To ensure a rigorous selection process and maintain the relevance of the articles included in this review, clear inclusion and exclusion criteria were established. These criteria served as the foundation for screening and evaluating the studies retrieved from the academic databases. The criteria, as outlined in Table 1, reflect the focus and scope of this research, ensuring that only high-quality and relevant literature was included.

Table 1. Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Timeline	2019-2024	< 2018
Document Type	Article and review	Conference papers, doctoral theses, books, book chapters
Stage of Publication	Final	Articles in progress, draft articles
Language	English	Non-English

Based on Table 1, the inclusion criteria were meticulously crafted to ensure alignment with the study's objectives by selecting only peer-reviewed journal articles and reviews published between 2019 and 2024. This timeframe reflects the latest advancements in the halal industry, while earlier publications, non-final works, and non-peer-reviewed documents such as conference papers or books were excluded to maintain academic rigor. Additionally, only finalized English-language publications were included to ensure reliability and consistency in the review process.

These criteria ensured a high-quality and relevant selection of 17 articles, forming a solid foundation for analyzing the development of the halal industry, innovation, and export potential. This study not only employed a systematic review using the PRISMA 2020 guidelines but also incorporated bibliometric analysis to validate the relevance and thematic alignment of the selected articles. Bibliometric tools like VOSviewer were utilized to visually represent the key themes and relationships within the field of halal industry research. This visualization ensured that the search string accurately captured the main topics and determinants relevant to this study.

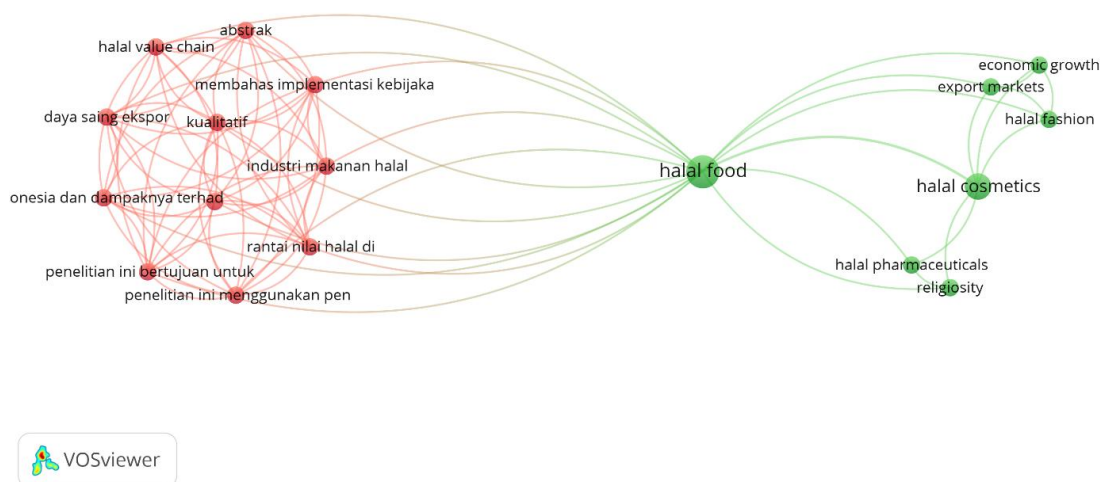


Figure 2. Network Visualization of Halal Industry Research Themes

The network visualization highlights the central and interconnected themes extracted from the 17 selected articles, validating the relevance of the search methodology used. The term "halal food" appears as a central node, connecting to various key sub-themes including "economic growth," "export markets," halal fashion, and halal cosmetics. These connections represent the most frequently co-occurring topics within the selected literature, confirming the thematic alignment with the study's objectives.

The interconnectedness of nodes reflects the holistic nature of halal industry development, showing how various aspects—from value chains to export competitiveness—are inherently linked. The presence of terms like "religiosity" and halal pharmaceuticals indicates the breadth of sectors covered in the literature, while the connections to "economic growth" and "export markets" emphasize the industry's significant economic potential. This network analysis confirms that the selected literature provides a comprehensive foundation for understanding both the operational and economic dimensions of Indonesia's halal industry development. This reinforces that the search string successfully captured diverse but relevant articles, providing a robust foundation for understanding the determinants and impacts of halal industry development. By using bibliometric analysis, this study ensures a methodologically sound approach that aligns the selected literature with the overarching research goals. The network visualization further supports the validity of the search process and strengthens the study's contribution to the field.

RESULTS AND DISCUSSION

This section presents the findings from the systematic literature review and provides a comprehensive discussion addressing the research objectives and questions. The results are organized to first highlight the characteristics of the included studies, followed by an in-depth analysis of the key innovations of the halal industry in Indonesia, as well as the contributions of halal export potential. Each section is structured to synthesize the findings while connecting them to broader implications in the context of halal industry development.

Characteristics of Included Studies

The systematic review identified 17 studies that met the inclusion criteria, representing a diverse range of topics and methodologies within the halal industry context. These studies, selected through the PRISMA process, provide a robust foundation for analyzing the factors influencing key innovations of the halal industry in Indonesia, as well as the contributions of halal export potential. The selected articles cover themes such as product innovation, export potential, customer loyalty, halal certification, and economic contributions of the halal industry. The details of these studies are summarized in Table 2.

Table 2. Characteristics and Key Determinants of Halal Industry Studies.

No	Author(s) & Year	Study Location	Study Objective/ Focus	Methodology	Key Findings	Relevance to Halal Industry	Key Determinants/ Themes
1	Bazin et al. (2024)	Lombok, Indonesia	Examining coherence of halal tourism model	Qualitative interviews with 85 officials	Local actors remain skeptical about involvement in developing new economic model	Demonstrates integration potential of halal tourism with other industries	Muslim-friendly tourism, religious economics
2	Sudarsono (2020)	Indonesia	Determining factors affecting halal consumption	Quantitative survey of 684 respondents	Religiosity, knowledge, and attitudes positively influence halal consumption	Shows consumer behavior patterns in halal product adoption	Religiosity, knowledge, attitude

No	Author(s) & Year	Study Location	Study Objective/ Focus	Methodology	Key Findings	Relevance to Halal Industry	Key Determinants/ Themes
3	Rizkitysha & Hananto (2020)	Indonesia	Examining factors affecting non-food halal products	Online survey with 264 respondents	Attitude toward halal-labeled detergent is affected by perceived usefulness	Expands understanding of halal certification beyond food products	Knowledge, religiosity, perceived usefulness
4	Izzuddin, M., & Adinugraha, H. H. (2022)	Indonesia	Exploring the potential, opportunities, and challenges of the Halal Industry in Indonesia.	Descriptive-qualitative method with a phenomenological approach	Indonesia has significant potential in various halal sectors but faces challenges like low awareness, weak competitiveness, and regulatory issues	Highlights Indonesia's potential to become a global player in the halal economy with improved strategies.	Halal food, halal tourism, halal fashion, halal pharmacy, halal cosmetics
5	Irfany, M. I., & Rusydiana, A. S. (2022)	Indonesia	Examining the opportunities and challenges in developing Indonesia's integrated Halal Industry	Descriptive-qualitative method using a phenomenological approach	Indonesia's halal industry has potential but struggles with low awareness, competitiveness, and regulatory implementation	Identifies key challenges that need to be addressed for sustainable growth in the halal sector	Integration, awareness, regulations, competitiveness, socialization.
6	Syamsiyah, N., & Ardana, Y. (2022)	Indonesia	Analyzing opportunities, challenges, and strategies for developing Indonesia's halal industry	Qualitative descriptive method using secondary data from literature and relevant documents	Indonesia faces both internal and external challenges but has vast opportunities in halal food, finance, tourism, and fashion sectors	Offers strategies to strengthen the halal industry for economic growth and competitiveness	Human resources, socialization, competitiveness, halal standards, global alignment
7	Susanto et al. (2024)	Indonesia	Investigating intellectual capital in halal batik industry	PLS analysis of questionnaire data	Intellectual capital mediates knowledge management impact	Shows importance of knowledge management in traditional industries	Intellectual capital, innovation
8	Fadhil Yazid, Tan Kamello, Yasir Nasution, & Edy Ikhsan (2020)	Indonesia	Assessing the prospects of halal industries in supporting Indonesia's Islamic economic development	Normative juridical method using secondary data. Normative juridical method using secondary data.	Halal markets in food, tourism, fashion, and medicine are key to Indonesia's Islamic economic growth	Emphasizes incorporating sustainable halal values into national economic planning.	Local wisdom, sustainability, halal certification, market opportunities, regulations.
9	Muyassaroh, N.,	Indonesia	Exploring the	Qualitative approach	Halal industrial	Advocates for	Halal industrial zones, resource

No	Author(s) & Year	Study Location	Study Objective/ Focus	Methodology	Key Findings	Relevance to Halal Industry	Key Determinants/ Themes
	Slamet, F., & Sakti, M. (2021)		potential of halal industrial areas to enhance Indonesia's national economic growth.		areas are essential for optimizing resources and increasing global competitiveness	centralized management to enhance the efficiency and growth of halal industries.	optimization, global competitiveness, centralized management.
10	Azwar & Nasir (2024)	Indonesia	Analyzing Muslim fashion industry factors	Mixed method with SWOT analysis	Large domestic market and increased awareness are key strengths	Identifies strategic opportunities in halal fashion	Fashion, SWOT analysis
11	Ahsan et al. (2021)	Indonesia	Investigating halal pharmaceutical consumption	SEM analysis of 225 respondents	Attitude and religiosity positively affect purchase intention	Expands understanding of halal pharmaceuticals market	Consumer behavior, planned behavior
12	Rum & Zuhriyah (2023)	Indonesia	Developing halal industry model	Qualitative and AHP analysis	Penta Helix collaboration is crucial for development	Emphasizes stakeholder collaboration importance	Development model, strategy
13	Fathorrazi et al. (2024)	Indonesia	Mapping halal certification potential	Qualitative phenomenological approach	Most MSMEs lack halal supervisors	Identifies certification challenges in food sector	Certification, self-declare
14	Nikmatul Masrurroh (2021)	Indonesia	Evaluating halal value chain policies and their impact on Indonesia's halal food export competitiveness	Qualitative phenomenological approach with interviews	The traceability principle in halal value chains boosts the competitiveness of Indonesian halal products globally	Suggests increasing literacy on halal certification to strengthen exports	Traceability, halal value chain, certification, export strategies, compliance.
15	Jailani (2024)	Indonesia	Exploring halal industry role in SDGs	Qualitative descriptive approach	Halal industry drives economic growth and community empowerment	Links halal industry to sustainable development	Economic, social, environment
16	Siswoyo (2021)	Indonesia	Analyzing halal industry competitiveness	Qualitative exploratory approach	Certification and brand image are key competitive indicators	Identifies strengthening factors for competition	Market opportunities, growth
17	Ardiansyah, M. R., Lubis, F. A., & Rahmani, N. A. B. (2023)	Indonesia	Examining the effect of the Halal Industry on Indonesia's economic growth and exports	Quantitative approach with multiple linear regression analysis	Halal sectors like food, fashion, and cosmetics significantly impact economic growth and exports	Demonstrates the economic importance of the halal sector as a driver of export growth.	Economic growth, exports, halal food, halal fashion, halal cosmetics, strategies.

Key Innovations in the Halal Industry

The analysis of recent studies reveals several significant innovations transforming Indonesia's halal industry landscape. These innovations span across technological implementation, organizational processes, certification mechanisms, and market development strategies. According to Rum & Zuhriyah (2023), the Penta Helix collaboration model represents a crucial innovation in industry development, emphasizing the importance of synergistic relationships between government, academia, business, community, and media stakeholders. This collaborative approach has proven particularly effective in addressing complex challenges in halal industry development and fostering sustainable growth.

A significant technological innovation highlighted in multiple studies is the implementation of digital traceability systems for halal products. Masruroh (2021) emphasizes how the integration of traceability principles in halal value chains has substantially enhanced the competitiveness of Indonesian halal products in global markets. This innovation has been particularly impactful in the food sector, where transparency and authenticity verification are crucial for maintaining consumer trust and meeting international standards. The implementation of digital traceability systems has not only improved product monitoring capabilities but has also streamlined the certification process and reduced operational inefficiencies.

Knowledge management innovations have emerged as another crucial factor in industry development. Susanto et al. (2024) demonstrate how intellectual capital mediates the impact of knowledge management in traditional industries like halal batik, suggesting that innovative approaches to managing and leveraging organizational knowledge can significantly enhance competitive advantage. This finding is particularly relevant for Indonesia's diverse halal sectors, where traditional practices must be effectively integrated with modern business approaches to meet contemporary market demands.

In the realm of certification, innovative self-declaration systems have been introduced to address the challenges faced by MSMEs. Fathorrazi et al. (2024) highlight how most MSMEs lack halal supervisors, leading to the development of simplified certification processes that maintain standards while reducing barriers to entry. This innovation in certification approaches has been crucial in enabling smaller businesses to participate in the halal market while ensuring compliance with religious and quality requirements.

The development of specialized halal industrial areas represents a spatial innovation that has transformed the industry's operational landscape. Muyassaroh et al. (2021) emphasize how these dedicated zones optimize resource utilization and enhance global competitiveness through centralized management approaches. This innovation in industrial organization has created efficient ecosystems that facilitate better coordination among industry players and improve access to specialized infrastructure and services.

Marketing and consumer engagement innovations have also played a significant role in industry development. Rizkitysha & Hananto (2020) reveal how innovations in product positioning and communication strategies, particularly for non-food halal products, have expanded market opportunities by effectively addressing consumer perceptions and needs. Their research demonstrates how innovative approaches to marketing halal-certified products can successfully reach both Muslim and non-Muslim consumers by emphasizing quality and ethical production practices.

Sustainability-focused innovations have become increasingly prominent in the halal industry. Jailani (2024) illustrates how the integration of sustainable development principles with halal practices has created new opportunities for industry growth while contributing to broader societal goals. This innovative approach to combining religious compliance with environmental and social responsibility has positioned Indonesia's halal industry to better meet evolving consumer expectations and international standards.

The fashion sector has demonstrated particular innovation in market development and product design. Azwar & Nasir (2024) identify how the Muslim fashion industry has innovatively leveraged Indonesia's large domestic market and increased awareness to create unique value propositions. These innovations in fashion design and marketing have helped establish Indonesia as a significant player in the global modest fashion market while addressing local consumer preferences and cultural requirements.

Innovations in halal pharmaceutical development and marketing have created new opportunities for industry growth. Ahsan et al. (2021) show how innovative approaches to understanding and addressing consumer behavior have helped expand the halal pharmaceutical market. These innovations in product development and marketing strategies have been crucial in building consumer trust and acceptance of halal pharmaceuticals.

The implementation of integrated development models represents another significant innovation in the sector. Syamsiyah & Ardana (2022) highlight how innovative approaches to human resource development, socialization strategies, and global alignment have strengthened Indonesia's competitive position in the international halal market. These organizational innovations have been particularly effective in addressing the complex challenges of building a comprehensive halal industry ecosystem.

Regulatory innovations have also played a crucial role in industry development. Irfany & Rusydiana (2022) discuss how innovative approaches to regulatory implementation and industry integration have helped address challenges related to awareness and competitiveness. These regulatory innovations have been essential in creating a more supportive environment for halal industry growth while ensuring compliance with religious and quality standards.

Looking at the broader economic impact, Ardiansyah et al. (2023) demonstrate how innovations across various halal sectors have significantly contributed to Indonesia's economic growth and export performance. Their analysis shows that innovative approaches to developing halal food, fashion, and cosmetics sectors have created new opportunities for economic development and international trade expansion.

The collective evidence from these studies suggests that innovation in Indonesia's halal industry is multifaceted and interconnected, with developments in one area often catalyzing improvements in others. These innovations have been crucial in addressing industry challenges while creating new opportunities for growth and development. The success of these innovations highlights the importance of continued investment in research and development, stakeholder collaboration, and adaptive strategies to maintain Indonesia's competitive position in the global halal market.

Contribution of Innovations to Export Potential

The systematic review of recent studies reveals significant relationships between innovations in Indonesia's halal industry and its export potential. Drawing from the analyzed research, innovations have demonstrated substantial contributions to enhancing Indonesia's position in the global halal market through various channels, including improved product quality, enhanced market access, and strengthened competitive advantages.

The implementation of innovative traceability systems has emerged as a crucial factor in boosting export potential. Masruroh (2021) demonstrates how the integration of traceability principles in halal value chains has significantly enhanced the competitiveness of Indonesian halal products in international markets. This innovation has particularly strengthened export capabilities by providing transparent product tracking mechanisms that meet international standards and build trust with foreign buyers. The study emphasizes how traceability innovations have helped Indonesian companies overcome non-tariff barriers in key export markets while ensuring compliance with varying international halal standards.

Ardiansyah et al. (2023) provide quantitative evidence of how innovations across multiple halal sectors have directly impacted export performance. Their analysis reveals significant contributions from innovations in halal food, fashion, and cosmetics sectors to Indonesia's export growth. The study particularly highlights how technological and process innovations have enabled Indonesian companies to meet international quality standards and adapt to diverse market requirements, thereby expanding their export opportunities.

The development of specialized halal industrial areas has played a vital role in enhancing export capabilities. According to Muyassaroh et al. (2021), these innovative industrial zones have optimized resource utilization and strengthened global competitiveness through centralized management approaches. Their research demonstrates how such spatial innovations have created efficient ecosystems that facilitate better coordination among export-oriented businesses and improve access to specialized infrastructure needed for international trade.

Innovations in certification processes have also contributed significantly to export potential. Fathorrazi et al. (2024) highlight how streamlined certification systems, while maintaining strict standards, have enabled more MSMEs to participate in export markets. This democratization of export opportunities through innovative certification approaches has expanded Indonesia's export base and enhanced its overall market presence in the global halal trade.

The fashion sector provides a compelling example of how innovations can drive export growth. Azwar & Nasir (2024) illustrate how innovative approaches to design, marketing, and market development in the Muslim fashion industry have successfully leveraged Indonesia's domestic market strengths to build export capabilities. Their SWOT analysis reveals how innovations in product development and market positioning have helped Indonesian fashion products gain recognition and market share in international markets.

Syamsiyah & Ardana (2022) emphasize the importance of innovative human resource development and global alignment strategies in strengthening Indonesia's export competitiveness. Their research shows how innovations in workforce development and international standard alignment have enhanced the country's ability to meet export market requirements and compete effectively in global markets.

The contribution of innovations to export potential is further evidenced in the pharmaceutical sector. Ahsan et al. (2021) demonstrate how innovations in product development and marketing strategies have helped build international credibility for Indonesian halal pharmaceuticals, creating new export opportunities in this high-value sector. Their findings suggest that innovative approaches to addressing consumer behavior and religious requirements have been crucial in developing export-ready pharmaceutical products.

The Penta Helix collaboration model, as described by Rum & Zuhriyah (2023), has shown significant potential in enhancing export capabilities through improved stakeholder coordination. This innovative approach to industry development has facilitated better alignment between producers, regulators, and market requirements, thereby strengthening Indonesia's export infrastructure and capabilities.

Sustainable development innovations have also contributed to export potential. Jailani (2024) illustrates how the integration of sustainable practices with halal requirements has created new export opportunities, particularly in markets where environmental and social responsibility are highly valued. This innovative approach has helped Indonesian products differentiate themselves in international markets while meeting evolving global standards.

Knowledge management innovations have proven crucial for export success. Susanto et al. (2024) show how intellectual capital and knowledge management innovations in traditional industries have enhanced their ability to meet international market requirements and compete effectively in export markets. Their research demonstrates the importance of innovative

approaches to preserving traditional knowledge while adapting to international market demands.

The implementation of innovative regulatory frameworks has also supported export growth. Irfany & Rusydiana (2022) discuss how regulatory innovations have helped address awareness and competitiveness challenges, creating a more conducive environment for export-oriented businesses. Their analysis shows how improved regulatory frameworks have facilitated better compliance with international standards and enhanced export readiness.

These findings collectively demonstrate that innovations across various aspects of the halal industry have made substantial contributions to Indonesia's export potential. The research indicates that successful export growth is not solely dependent on product innovations but requires a holistic approach encompassing technological, organizational, and regulatory innovations. The studies highlight how these various forms of innovation work together to enhance Indonesia's competitive position in the global halal market, create new export opportunities, and strengthen the country's ability to meet international market requirements.

Furthermore, the research suggests that continued innovation will be crucial for maintaining and expanding Indonesia's export potential in the increasingly competitive global halal market. The studies emphasize the importance of sustained investment in innovation across all aspects of the halal industry to ensure long-term export success and market leadership. This comprehensive approach to innovation has proven essential for building and maintaining Indonesia's position as a significant player in the global halal trade.

Synthesis and Insights

Addressing Research Objectives

The systematic review successfully addressed its primary objectives by analyzing key innovations driving Indonesia's halal industry development. The findings reveal a complex ecosystem of technological, organizational, and regulatory innovations transforming the sector. The implementation of digital traceability systems, as highlighted by Masrurroh (2021), has emerged as a fundamental innovation enhancing product authenticity and market trust. The development of specialized halal industrial areas, documented by Muyassaroh et al. (2021), demonstrates successful spatial innovation in optimizing resource utilization. The adoption of the Penta Helix collaboration model, identified by Rum & Zuhriyah (2023), showcases innovative approaches to stakeholder engagement. These innovations collectively demonstrate Indonesia's commitment to modernizing its halal industry infrastructure. The integration of sustainable practices with halal requirements, as noted by Jailani (2024), represents a significant evolution in industry standards.

The review identified significant innovations in certification processes and regulatory frameworks. The development of simplified certification mechanisms for MSMEs, as documented by Fathorrazi et al. (2024), has democratized access to halal certification. The implementation of knowledge management systems, studied by Susanto et al. (2024), has enhanced traditional industry competitiveness. The integration of digital technologies in certification processes has streamlined compliance procedures. Regulatory innovations have created more supportive environments for industry growth. These developments have particularly benefited smaller businesses entering the halal market. The standardization of certification processes has improved industry credibility and market access.

The analysis revealed substantial progress in market development and consumer engagement strategies. The fashion sector's innovative approaches to design and marketing, analyzed by Azwar & Nasir (2024), have successfully expanded market reach. The pharmaceutical sector has demonstrated innovation in product development and consumer trust-building, as shown by Ahsan et al. (2021). Marketing innovations have effectively addressed both Muslim and non-Muslim consumer needs. The development of new market

segments has created additional growth opportunities. These strategies have strengthened Indonesia's competitive position in global markets. The diversification of halal products has attracted broader consumer demographics.

Regarding export potential, the research identified clear connections between innovation and market expansion. Masruroh's (2021) study demonstrates how traceability innovations directly enhance export competitiveness. Ardiansyah et al. (2023) provide quantitative evidence linking sector innovations to export growth. The development of specialized industrial zones has improved export capabilities. International market access has expanded through improved certification processes. Export growth has been particularly strong in sectors with high innovation adoption. These findings confirm the crucial role of innovation in export success.

The research also highlighted the importance of human resource development and capacity building. Syamsiyah & Ardana (2022) emphasize the role of innovative training approaches in building industry expertise. The development of specialized skills has enhanced industry competitiveness. Knowledge transfer mechanisms have improved industry capabilities. Workforce development has supported export market expansion. Professional development programs have strengthened industry standards. These initiatives have created a more capable industry workforce.

Sustainability innovations have emerged as a crucial factor in industry development. Jailani's (2024) research demonstrates the integration of sustainable practices with halal requirements. Environmental considerations have become increasingly important in product development. Social responsibility initiatives have enhanced market appeal. Sustainable practices have created new market opportunities. These innovations have positioned Indonesia favorably in conscious consumer markets. The alignment of halal and sustainability principles has strengthened market positioning.

Comparison with Broader Literature

The findings align with broader literature on industry development and innovation, while highlighting unique aspects of the halal sector. The importance of stakeholder collaboration, emphasized in the Penta Helix model (Rum & Zuhriyah, 2023), reflects established theories of industry development. The role of technological innovation in enhancing competitiveness mirrors findings from other industries. However, the specific requirements of halal certification add unique complexity to innovation implementation.

The review's findings on certification processes and regulatory frameworks demonstrate both similarities and differences with other regulated industries. The challenges faced by MSMEs in obtaining certification, noted by Fathorrazi et al. (2024), mirror broader small business challenges. However, the religious aspects of halal certification create unique considerations. The development of simplified certification processes while maintaining religious compliance represents a distinctive challenge.

Market development strategies identified in the research show interesting parallels with general marketing literature. The success of the fashion sector in leveraging domestic market strength, as documented by Azwar & Nasir (2024), follows established market development principles. However, the need to balance religious requirements with market appeal creates unique challenges. The expansion into non-Muslim markets demonstrates successful adaptation of traditional marketing principles.

The findings regarding export potential align with broader international trade literature while highlighting halal-specific factors. The importance of traceability and certification in building export markets, emphasized by Masruroh (2021), reflects general export requirements. However, the need to maintain halal integrity throughout the supply chain adds complexity. The success in developing export markets demonstrates effective adaptation of international trade principles to halal requirements.

Practical Implications

The research findings have significant implications for industry stakeholders and policymakers. The success of the Penta Helix collaboration model suggests the importance of coordinated efforts among different stakeholder groups. The implementation of digital traceability systems requires substantial investment in technology infrastructure. The development of specialized industrial zones needs careful planning and resource allocation. The simplification of certification processes must balance accessibility with compliance requirements. These implications require strategic planning and resource commitment from various stakeholders.

The findings highlight the importance of innovation in enhancing export competitiveness. The success of traceability systems in building international market trust suggests the need for continued technological investment. The role of specialized industrial zones in supporting export growth indicates the importance of infrastructure development. The effectiveness of simplified certification processes suggests the need for continued regulatory innovation. These implications are particularly relevant for export-oriented businesses and policymakers.

The research demonstrates the importance of human resource development and capacity building. The need for specialized training programs to support industry growth is evident. The development of expertise in halal certification and compliance requires dedicated educational initiatives. The importance of knowledge management in traditional industries suggests the need for targeted support programs. These implications affect educational institutions and professional development organizations.

Sustainability considerations emerge as crucial factors for future industry development. The integration of sustainable practices with halal requirements necessitates new approaches to product development. The growing importance of environmental considerations requires adaptation of existing processes. The role of social responsibility in market development suggests the need for comprehensive sustainability strategies. These implications affect product development and marketing strategies.

Limitations and Future Research Directions

The review identified several limitations in current research coverage. Most studies focus on specific sectors or regions within Indonesia, limiting broader generalizability. The rapidly evolving nature of technology means some findings may become outdated quickly. The reliance on qualitative methodologies in many studies suggests the need for more quantitative research. These limitations provide opportunities for future research expansion.

Methodological limitations were noted across several studies. The predominance of case studies and qualitative approaches suggests the need for more diverse research methods. The limited use of longitudinal studies restricts understanding of long-term impacts. The focus on domestic market perspectives may limit international applicability. These limitations could be addressed through more comprehensive research designs.

Data availability and quality posed challenges for some research areas. The limited availability of export data for specific halal sectors restricts detailed analysis. The lack of standardized metrics for measuring innovation impact affects comparability. The difficulty in tracking informal sector activities limits understanding of total market size. These limitations suggest the need for improved data collection and analysis methods.

Future research opportunities include several promising directions. The need for more comprehensive studies of innovation impact across multiple sectors is evident. The potential for comparative studies with other halal-producing countries could provide valuable insights. The opportunity to examine long-term effects of current innovations deserves attention. These research directions could enhance understanding of the halal industry's development trajectory.

CONCLUSION

The systematic review demonstrates that Indonesia's halal industry development is significantly influenced by innovations across technological, organizational, and regulatory domains. The analysis reveals that successful implementation of digital traceability systems, specialized industrial zones, and simplified certification processes has enhanced export competitiveness and market access. The Penta Helix collaboration model has proven particularly effective in fostering stakeholder coordination and driving industry growth. These findings emphasize that sustainable development of Indonesia's halal industry requires continued investment in innovation while balancing religious compliance, market demands, and environmental considerations. Future development of Indonesia's halal industry should prioritize the implementation of integrated digital solutions for certification and traceability, expansion of specialized industrial zones, and strengthening of stakeholder collaboration through the Penta Helix model. Policymakers should focus on harmonizing regulations, supporting MSME participation, and promoting sustainable practices. Additionally, investment in human resource development, research and development infrastructure, and international market intelligence should be increased to enhance Indonesia's competitive position in the global halal market. Particular attention should be given to developing innovative solutions that address both religious compliance and sustainability requirements while meeting international market standards.

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