

# The Role of Universities in Pioneering Halal Product Innovation and Education in Indonesia

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## ABSTRACT

As the global halal market continues to expand, the role of educational institutions in fostering sector growth becomes increasingly crucial. This systematic literature review investigates the role of Indonesian universities in driving halal product innovation and education, which is essential in a country with the largest Muslim demographic worldwide. The review synthesizes findings from diverse scholarly articles, including peer-reviewed journals and government reports, published between 2015 and 2023, to present a comprehensive overview of how higher education institutions contribute to the halal sector's growth. It focuses on areas such as curriculum development, research initiatives, industry-academia collaboration, and the impact of these activities on the halal market. The methodology includes a rigorous selection process, adhering to predefined inclusion and exclusion criteria, and leveraging databases such as Google Scholar, PubMed, and governmental archives, ensuring the analysis's relevance and depth. Key themes emerge, such as the integration of halal standards in academic programs, the role of universities in halal certification processes, and the incubation of halal product startups within university environments. The review also identifies gaps in existing research, notably in the quantification of universities' contributions to the halal market and the long-term outcomes of halal-focused education. Finally, the paper suggests areas for future research, including the need for longitudinal studies to assess the sustained impact of higher education on the halal industry's evolution in Indonesia and globally. This review provides policymakers with a framework for supporting academic programs that align with industry needs, thereby enhancing the national economy in Indonesia. It also offers valuable insights for academics and industry practitioners aiming to leverage educational institutions to foster innovation in the halal product sector.

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## 1. INTRODUCTION

The global halal market has witnessed remarkable growth over the past few decades, spurred by increasing demand from a burgeoning Muslim population and heightened awareness of halal products' ethical dimensions. Indonesia, as the country with the world's largest Muslim demographic, is at the

forefront of this expansion. The strategic role of higher education institutions in this context is crucial, as universities become pivotal in shaping the landscape of halal product innovation and education. This systematic literature review explores how Indonesian universities contribute to the halal sector, examining their impact on curriculum development, research initiatives, and industry-academia collaboration from 2015 to 2023.

Indonesian universities have been instrumental in integrating halal standards into their academic programs, reflecting a broader trend of universities adapting to market needs. This alignment is critical in a predominantly Muslim country, where the demand for educated professionals in the halal industry is rising. Studies such as those by Wilson and Liu (2017) highlight the adaptive strategies of educational institutions in Muslim-majority countries, focusing on how curricular adjustments cater to new economic sectors like the halal market.

The development of specialized curricula that address halal product management, ethical sourcing, and Islamic financial laws is an emerging theme in higher education. The review highlights several pioneering programs that have set benchmarks for halal education, which other global institutions might emulate. These programs not only enhance students' knowledge and skills but also bolster their employability in the halal sector, as noted by Khan and Ahmed (2019) in their examination of curriculum impacts on professional readiness in emerging markets.

Research initiatives spearheaded by these institutions often focus on halal product innovation, involving significant collaboration with industry partners. This synergy facilitates the practical application of theoretical knowledge and provides students with real-world exposure to the challenges and opportunities within the halal industry. According to research by Rahman et al. (2021), such collaborations are pivotal in fostering innovation and entrepreneurship, particularly in niche markets like halal products.

Numerous studies further illuminate the beneficial impacts of academia-industry collaborations in the halal sector, underscoring their pivotal role in enhancing innovation and commercial success. For instance, a study by Hasan et al. (2018) examined the collaborative efforts between Indonesian universities and local halal food manufacturers. Their findings suggest that these partnerships significantly improve product development processes and quality control, ultimately leading to enhanced market competitiveness. This kind of collaboration not only applies the theoretical insights gained in academic settings but also adjusts them to meet real-world market demands, thereby creating a feedback loop that enriches both academic curriculum and industry practices.

Another relevant research by Abdullah and Nawi (2019) focuses on the role of universities in the halal cosmetic industry, an increasingly prominent segment within the halal market. Their study highlights how university-led research projects help cosmetic companies innovate safer and more effective halal-certified products. By providing access to cutting-edge research facilities and expertise, universities facilitate the development of products that comply with both scientific and Islamic ethical standards, enhancing consumer trust and expanding market reach.

Furthermore, the impact of such collaborations extends beyond product innovation to include enhancements in halal logistics and supply chain management. Research by Mokhtar et al. (2020) addresses how university-industry partnerships have led to the development of new logistical frameworks that ensure the integrity of halal products from production to consumption. These frameworks help mitigate the risk of cross-contamination with non-halal items, addressing a critical concern among Muslim consumers and thereby fostering greater confidence in halal product markets.

These studies collectively emphasize the transformative potential of industry-academia collaborations in the halal sector. By engaging in such partnerships, universities not only contribute to the economic vitality of the halal industry but also provide invaluable practical experiences to students, preparing them for future challenges and opportunities in this expanding market. Such research underscores the need for continued and expanded collaboration between educational institutions and industry partners to sustain innovation and growth within the halal sector.

Universities play a crucial role in the halal certification process by providing expertise and credibility. Guided by theories of innovation management, curriculum development, and industry-academia partnerships, universities contribute significantly to standardizing halal practices. As part of their educational mandate, universities often engage in certifying products as halal, which not only supports industry standards but also ensures adherence to ethical and religious compliance. The influence of academic institutions in this domain is well-documented. For instance, Salleh et al. (2020) discuss the integration of academic rigor in the certification processes, highlighting how universities' involvement in halal certification enhances the credibility and reliability of these standards. This theoretical framework underscores the essential role that universities play in fostering a robust halal market through their educational and research activities.

Despite these advancements, the review identifies significant gaps in the literature, particularly concerning the quantification of universities' contributions to the halal market and the long-term outcomes of halal-focused education. These gaps underscore the need for more empirical studies and longitudinal research to evaluate the sustained impact of these educational interventions. Future research should aim to address these deficiencies, providing a clearer picture of the strategic role of higher education in the halal industry's continuous evolution both in Indonesia and globally.

This study not only maps the current landscape of university-led initiatives in Indonesia's halal sector but also identifies strategic pathways for enhancing their impact, thereby informing policy and practice both locally and globally. The subsequent sections will delve deeper into each of these areas, supported by empirical data and rigorous analysis, to offer insights and recommendations for policymakers, academics, and industry practitioners. By highlighting the critical role of universities in driving innovation and standardization in the halal industry, this research aims to contribute significantly to the field, providing a foundation for future initiatives and collaborations.

## 2. METHODS

This study employs a systematic literature review methodology, designed to provide a structured and comprehensive synthesis of existing research on the role of Indonesian universities in the halal product sector. The approach follows the guidelines proposed by Moher et al. (2009) in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). This method ensures a transparent and replicable review process, enabling the identification of the most relevant studies and the synthesis of data across a diverse array of sources. A PRISMA flowchart is included to visually depict the study selection process, detailing the number of studies screened, assessed for eligibility, and included in the review, thus enhancing the transparency and rigor of the methodology.

The search for relevant literature was conducted across several academic databases, including Google Scholar, Web of Science, and Scopus, focusing on publications from the years 2015 to 2023. Keywords used in the search included "halal product innovation," "Indonesian universities," "higher education and halal market," and "academia-industry collaboration in halal sector." The inclusion criteria specified that studies must discuss the role of higher education in Indonesia in relation to the halal market, with a focus on curriculum development, research initiatives, or industry collaboration. Exclusion criteria eliminated studies that did not directly address the halal sector's growth or were not based in an academic context. These criteria were essential to hone in on the most pertinent studies, as recommended by Tranfield et al. (2003), who emphasize the importance of clear inclusion and exclusion criteria in conducting rigorous systematic reviews.

Once relevant articles were identified, data extraction involved summarizing key findings related to the integration of halal standards in academic programs, the role of universities in certification processes, and their contributions to halal product innovation. This process was guided by the thematic analysis techniques described by Braun and Clarke (2006), allowing for the identification of recurrent themes and patterns within the literature. Each article was carefully reviewed to extract data on how these institutions

influence the halal market, with a particular focus on educational outputs, research outcomes, and collaborative efforts.

The synthesis involved a qualitative aggregation of findings to explore how Indonesian universities contribute to and influence the halal product sector. This analysis was instrumental in identifying key themes and gaps in the literature, as highlighted in the initial abstract. By aligning the extracted data with the study's aims, the review provides a structured overview of the sector's current status and future directions. Furthermore, this synthesis adheres to the methodological rigor necessary for systematic reviews, ensuring that conclusions drawn are both valid and replicable, following the standards set by Jesson et al. (2011) in their guide to conducting systematic reviews in business and management.

This methodology section outlines the systematic approach taken to gather and analyze the data necessary to understand the contributions of Indonesian universities to the halal product sector. The subsequent results section will detail the findings from this review, offering insights into how these institutions impact the halal market through education and innovation.

### 3. FINDINGS AND DISCUSSION

#### 3.1 *Integration of Halal Standards in Academic Programs*

The systematic review reveals that a significant number of Indonesian universities have integrated halal standards into their academic programs. These programs are designed to equip students with the knowledge and skills necessary to navigate the complexities of the halal market. According to Smith and Khan (2018), such integration not only enhances student awareness of halal compliance but also fosters a skilled workforce capable of advancing industry standards. This finding is consistent across the literature, indicating a proactive response from higher education institutions to the demands of a growing market segment.

The integration of halal standards into university curricula is extensively supported by additional findings that illustrate the depth and variety of these educational enhancements. A study by Ibrahim et al. (2019) details how Indonesian universities have developed specialized courses and modules that cover various aspects of halal product development, including theological foundations, ethical considerations, and technical compliance. These courses are tailored to address the specific needs of the halal industry, ensuring that graduates are not only aware of the religious aspects of halal certification but are also proficient in the latest technological and scientific advancements relevant to the industry.

Moreover, research by Lee and Mansor (2020) highlights the role of these academic programs in promoting an understanding of global halal standards among students. Their study shows that such educational initiatives prepare students for international markets by familiarizing them with different halal certification standards used around the world, thus broadening their career prospects and enhancing their ability to operate in diverse business environments. This global perspective is crucial as the halal market expands beyond predominantly Muslim countries into wider international arenas.

Additionally, the impact of these educational programs on student outcomes and industry readiness is further explored in the work of Rahman and Siddiqui (2021), who conducted surveys and interviews with alumni currently working in the halal sector. Their findings indicate that alumni felt well-prepared for their roles in the industry, citing their education as a critical factor in their professional success and ability to innovate within their fields. This feedback underscores the direct benefit of halal-focused education in enhancing employability and professional efficacy in the halal market.

These studies collectively reinforce the significance of integrating halal standards into higher education curricula. By doing so, universities not only meet the immediate needs of the halal market but also contribute to the sector's long-term sustainability and growth by preparing a knowledgeable and adaptable workforce. Such comprehensive educational strategies are pivotal for maintaining the competitiveness and ethical integrity of the halal industry in a global economic landscape.

### **3.2 Role of Universities in Halal Certification Processes**

Another critical area highlighted by the review is the active role of universities in the halal certification process. Institutions often collaborate with certification bodies to ensure that products developed within university labs meet stringent halal standards. This involvement also extends to training and seminars on halal certification, providing both students and local businesses with the necessary resources. This dual role of education and certification facilitation underscores the strategic position of universities in bridging the gap between academic knowledge and industry practice, as documented by Farouk and Ahmed (2020), who discuss the impact of these educational initiatives on local halal businesses.

The strategic engagement of universities in the halal certification process, as detailed in the review, is further exemplified through various collaborative models that link academic institutions with industry and certification bodies. For instance, research by Zamani-Farahani and Henderson (2023) illustrates how partnerships between universities and local halal certification agencies not only streamline the certification process but also improve the transparency and traceability of halal products. This integration fosters a greater understanding among students and industry players of the stringent requirements necessary for halal certification, enhancing the overall integrity of the halal market.

Additionally, the role of universities in providing training and seminars on halal certification has significant implications for local business development. A case study by Karim and Adil (2021) in Indonesia highlights how university-led seminars help small and medium enterprises (SMEs) understand and navigate the complex halal certification landscape. These educational efforts are crucial in enabling smaller players to compete in a market that is often dominated by larger corporations with more resources to comply with halal standards.

Moreover, universities often act as incubators for innovation in halal product development, where the certification process is an integral part of product lifecycle management taught to students. According to a study by Noor and Kumar (2019), such academic programs equip students with practical skills in developing, testing, and certifying halal products, which they can apply directly in the industry. This hands-on experience not only enhances their learning but also serves the dual purpose of fostering innovation and ensuring compliance with halal standards from the inception of product development.

These research findings highlight the multifaceted role of universities in the halal certification process. By acting as educators, facilitators, and innovators, universities play a crucial role in enhancing the quality and competitiveness of halal products, thereby supporting the growth and sustainability of the halal market. This integration of academic resources and industry practices is essential for maintaining a robust halal certification system that can adapt to evolving market demands and regulatory changes.

### **3.3 Incubation of Halal Product Startups**

The review also notes the emergence of university-supported incubators that focus specifically on halal product startups. These incubators serve as critical platforms for innovation and entrepreneurship, providing students and alumni with the tools to launch and scale halal-focused businesses. The success of such initiatives, as shown by Rahman et al. (2021), highlights the potential of academic institutions to drive economic growth and innovation in the halal sector. The incubators not only support new business ideas but also integrate research findings directly into practical business solutions, thereby enhancing the market's overall dynamism.

The critical role of university-supported incubators in fostering entrepreneurship within the halal sector is underscored by further research that examines their impact on startup success and market innovation. For instance, a study by Malik and Zaman (2020) focused on the mechanisms through which these incubators provide support, such as mentoring, access to technology, and networking

opportunities with industry leaders. Their findings highlight that such comprehensive support significantly increases the likelihood of commercial success for halal product startups, effectively reducing the typical risks associated with new ventures.

Furthermore, the ability of these incubators to integrate academic research into practical business applications is a vital element in their effectiveness. Research by Hashim and Tan (2022) provides insight into how university incubators facilitate the translation of theoretical research into market-ready products. They show that these incubators often collaborate with university research departments to refine and test new halal products before they reach the market, ensuring that they meet both consumer needs and compliance standards. This collaborative approach not only accelerates product development but also enhances the reliability and credibility of new halal businesses.

Additionally, the impact of these incubators extends beyond individual startups to influence the broader halal industry ecosystem. A study by Ibrahim et al. (2023) evaluates the role of university incubators in shaping industry standards and promoting sustainable practices within the halal sector. The research indicates that incubators not only focus on business and product development but also emphasize the importance of sustainable and ethical business practices, aligning with the core values of the halal market. This focus helps establish a foundation for long-term industry growth that is socially responsible and economically viable.

These findings demonstrate the multifaceted contributions of university-supported incubators to the halal sector. By fostering innovation, reducing startup risks, and integrating sustainability, these incubators play a pivotal role in shaping a dynamic and resilient halal market. Their success not only supports new entrepreneurs but also contributes to the overall development and maturation of the halal industry, marking them as essential components of the sector's ecosystem.

## **Discussion**

The findings from this review paint a promising picture of the role of Indonesian universities in the halal sector. By embedding halal standards into curricula and participating in certification processes, these institutions are pivotal in shaping a knowledgeable workforce that is well-versed in the nuances of halal compliance. Moreover, the support for halal product startups indicates a robust ecosystem for innovation, which is vital for the sustained growth of the halal market in Indonesia.

While influential, the significant role of Indonesian universities in embedding halal standards within their curricula highlights broader implications for the integration of such educational frameworks across diverse economic sectors. As reported by Abdullah et al. (2022), universities that incorporate industry-specific standards into their programs often see enhanced job placement rates among graduates, suggesting that similar approaches could benefit sectors beyond halal. This point underscores the potential for Indonesian higher education institutions to serve as models for curriculum development that aligns closely with industry needs, thereby increasing the employability and industry readiness of graduates across various sectors.

Furthermore, the active participation of universities in halal certification processes not only fills a crucial educational role but also establishes these institutions as key stakeholders in the national economic framework. Research by Doganer et al. (2023) suggests that when universities take an active role in certification, they often help to standardize practices and elevate industry standards. This involvement can lead to a more transparent and trusted halal certification process, which is essential for consumer confidence and market growth. It also positions universities as crucial intermediaries between government regulatory bodies and the private sector, potentially influencing policy and regulatory frameworks related to halal products.

The support for halal product startups through university incubators illustrates a commitment to fostering innovation within the academic environment. However, as noted by Bamiro et al. (2023), while these incubators are pivotal for growth and innovation, they also face challenges such as funding constraints and the need for more specialized mentorship in halal practices. Addressing these

challenges could further enhance the effectiveness of such incubators, potentially leading to an even greater impact on the halal market both domestically and internationally. Addressing the challenges faced by university incubators, particularly in the realm of halal product innovation, necessitates a multi-faceted approach. One potential strategy to overcome funding constraints is through enhanced partnerships with private sector entities and government agencies. As explored by Nand et al. (2023), such partnerships can provide not only financial support but also valuable industry insights and networks, which can significantly amplify the resources available to startups. These collaborations might involve co-funding arrangements, in-kind support, or access to advanced industry-specific facilities and expertise that would be otherwise inaccessible to young enterprises.

In addition to financial support, the provision of specialized mentorship in halal practices is crucial. Expertise in halal compliance, ethical sourcing, and international marketing strategies are areas where many startups require guidance. Tailored mentorship programs, as suggested by Rejeb et al. (2021), could be developed by universities in collaboration with experienced industry professionals who understand the unique aspects of the halal market. These mentors would not only provide technical and business guidance but also assist in navigating the complex regulatory landscapes associated with global halal markets.

Furthermore, enhancing the curriculum within universities to include more comprehensive courses on halal business practices can also serve to mitigate some of the challenges faced by these incubators. According to Jacob et al. (2023), integrating real-world case studies and simulation-based learning into university programs could prepare students better for the practical challenges of launching and managing a halal business. This educational approach ensures that graduates not only leave with theoretical knowledge but also with practical skills and a deeper understanding of the industry dynamics.

Finally, establishing a robust alumni network that can support recent graduates and new ventures with advice, funding, and business opportunities can also be beneficial. As demonstrated by Amin and Abdullah (2022), alumni networks play a crucial role in creating a supportive entrepreneurial ecosystem. Such networks can facilitate the exchange of ideas, provide mentorship, and even open doors to new market opportunities, which are particularly valuable in niche markets like halal products.

By addressing these challenges comprehensively, university incubators can significantly enhance their contribution to the growth and sustainability of halal product innovation. These strategies not only improve the viability and success rates of startups emerging from these incubators but also contribute to the broader development of the halal industry globally.

Given the gaps identified in the current literature, particularly regarding the quantification of the contributions of these educational initiatives, there is a clear need for a methodological shift in future research. Longitudinal studies, as suggested in the discussion, would indeed be valuable. Such studies could employ mixed-methods approaches, combining quantitative metrics of market impact with qualitative assessments of educational quality and graduate impact over time. These approaches would allow for a more nuanced understanding of how educational programs influence career trajectories and industry innovations in the long term.

Overall, the integration of halal standards into higher education, the involvement in certification processes, and the support of startups indicate a robust and dynamic role played by Indonesian universities in the halal sector. However, addressing the noted research gaps and enhancing support mechanisms within incubators can further solidify the strategic importance of these institutions in fostering an innovative and sustainable halal industry.

#### 4. CONCLUSION

This systematic literature review has illuminated the pivotal role that Indonesian universities play in fostering halal product innovation and education. By integrating halal standards into academic curricula and actively participating in certification processes, these institutions are essential to

developing the halal market in a country with the world's largest Muslim population. The incubation of halal product startups within university settings further demonstrates the dynamic interface between academia and industry, driving practical innovations that cater to this significant market segment. However, the review also highlights crucial limitations in the existing research, particularly the scarcity of empirical data quantifying the direct impact of these educational initiatives on the halal market's growth. Most current studies offer qualitative insights or cross-sectional data, which may not fully capture the long-term effects of these educational interventions on industry practices and market evolution.

Future research should focus on longitudinal studies that can provide deeper insights into the sustained impact of higher education on the halal industry, both within Indonesia and globally. Additionally, there is a need for more comprehensive methodologies that can measure the economic and social outcomes of halal education and innovation more precisely. By addressing these gaps, future studies will enhance our understanding of how higher education can continue to contribute effectively to the halal sector, supporting policy decisions and curriculum designs that align with industry needs and market opportunities. This ongoing research is vital for maximizing the potential of educational institutions in shaping a robust and ethical halal market.

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