

Islamic entrepreneurship opportunities in Lamongan Regency: Integrating local economic potential, business-enabling conditions, and business performance

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Abstract

The agricultural, fisheries, trade, and manufacturing sectors make Lamongan Regency a relevant setting for examining Islamic entrepreneurship opportunities. This study aims to map these opportunities by connecting the regional economic structure, business-enabling conditions, and evidence of practices related to Sharia principles. It employs descriptive analysis of secondary statistics and an integrative literature review. The findings show that Lamongan's gross regional domestic product (GRDP) reached approximately IDR 56.11 trillion in 2025, with real growth of 5.40%, while agriculture, trade, and manufacturing accounted for 62.45% of the regional economy. The literature indicates that entrepreneurial marketing, financing, halal certification, skills, and leadership are associated with different dimensions of business performance. This study contributes an analytical framework that distinguishes productive capacity, business-enabling conditions, and business outcomes and sustainability. The framework helps identify economic opportunities while emphasizing that sectoral potential alone does not establish firm-level profitability, sustainability, or Sharia compliance.

Keywords: Islamic entrepreneurship; Agro-maritime economy; Lamongan Regency; *Pesantren* entrepreneurship; Local batik.

Abstrak

Potensi ekonomi berbasis pertanian, perikanan, perdagangan, dan industri pengolahan menjadikan Kabupaten Lamongan relevan untuk mengkaji peluang kewirausahaan Islam. Penelitian ini bertujuan memetakan peluang tersebut dengan menghubungkan struktur ekonomi daerah, kondisi pendukung usaha, dan bukti praktik yang berkaitan dengan prinsip syariah. Penelitian ini menggunakan analisis deskriptif statistik sekunder dan tinjauan literatur integratif. Hasil penelitian menunjukkan bahwa produk domestik regional bruto (PDRB) Lamongan pada 2025 mencapai sekitar Rp56,11 triliun dengan pertumbuhan riil sebesar 5,40%, sementara pertanian, perdagangan, dan industri pengolahan menyumbang 62,45% terhadap perekonomian daerah. Literatur menunjukkan bahwa pemasaran kewirausahaan, pembiayaan, sertifikasi halal, keterampilan, dan kepemimpinan berkaitan dengan berbagai dimensi kinerja usaha. Penelitian ini berkontribusi melalui kerangka analisis yang membedakan kapasitas produktif, kondisi pendukung usaha, serta hasil dan keberlanjutan usaha. Kerangka tersebut membantu mengidentifikasi peluang ekonomi sekaligus menegaskan bahwa potensi sektoral belum membuktikan profitabilitas, keberlanjutan, atau kepatuhan syariah pada tingkat perusahaan.

Kata Kunci: Kewirausahaan Islam; Ekonomi agro-maritim; Kabupaten Lamongan; Kewirausahaan pesantren; Batik lokal.

Introduction

Islamic entrepreneurship encompasses economic activity as well as ethical and religious responsibilities. Gümüşay (2015) identifies three pillars of Islamic entrepreneurship: entrepreneurial activity, socioeconomic responsibility and ethics, and religious-spiritual values. In Indonesia, the implementation of halal product assurance is regulated by Government Regulation No. 42 of 2024 concerning the Implementation of Halal Product Assurance. This conceptual framework and regulatory context provide a basis for understanding the relationship between economic activity and responsibility in business operations. Salindal's (2019) findings illustrate the relevance of this relationship. In a survey of 211 food companies in the Philippines, comprising 141 halal-certified companies and 70 non-certified companies, halal certification was found to have a significant effect on innovation performance. Improved innovation performance was subsequently associated with better market performance and mediated the relationship between certification and market performance. However, halal certification does not, in itself, demonstrate compliance across all aspects of a company's operations. Therefore, Islamic entrepreneurship opportunities need to be assessed using economic indicators and relevant evidence of business practices.

Business opportunities are determined not only by the availability of resources but also by the conditions that enable those resources to be transformed into productive activities. Queissner, Stolz, and Weiss (2025) synthesized 257 quantitative regional studies comprising a total of 2,241,813 observations. Their meta-analysis identified market demand, talent, and financing as important elements of entrepreneurial ecosystems, although their relevance varied according to the type of activity examined. At the firm level, Qurniawati and Nurohman (2021) used partial least squares structural equation modeling (PLS-SEM) with 100 respondents from halal food micro, small, and medium-sized enterprises (MSMEs) in Surakarta. Their findings indicated that financial literacy and financial technology played roles in business performance and sustainability. Meanwhile, Ardiantono et al. (2024) applied the Analytic Network Process to assessments provided by nine informants from government, academia, and industry in Indonesia. They identified seven categories of barriers to halal supply chain implementation, with the high cost of implementing blockchain identified as the most significant barrier for MSMEs.

Lamongan Regency has an economic base that offers opportunities for business development in agriculture, fisheries, trade, and manufacturing. Statistics Indonesia (BPS) of Lamongan Regency (2026b) reported that the regency's gross regional domestic product (GRDP) at current prices reached approximately IDR 56.11 trillion in 2025. Real economic growth in the same year reached 5.40% (BPS of Lamongan Regency, 2026a). Agriculture, forestry, and fisheries accounted for 30.18% of GRDP,

wholesale and retail trade and vehicle repair contributed 19.43%, and manufacturing accounted for 12.84%. Together, these three sectors represented 62.45% of the regional economy. According to the GRDP publication, manufacturing grew by 9.25%, while agriculture, forestry, and fisheries grew by 4.81% (BPS of Lamongan Regency, 2026b). In the batik sector, Poernomo et al. (2025) analyzed 80 business owners in East Java and found that entrepreneurial and learning orientations strengthened competitive advantage, while market orientation improved business performance. These findings provide an empirical point of comparison but do not directly represent the conditions of all batik businesses in Lamongan.

Previous studies indicate that business performance is influenced by marketing strategies, halal certification, and the capacity to manage resources. Based on 384 questionnaires collected from halal food MSMEs in Iran, Hendijani Fard and Seyyed Amiri (2018) found that entrepreneurial marketing positively affected market and innovation performance but had no statistically significant effect on production performance. Salindal (2019), in a study of 211 food companies in the Philippines, found that halal certification was associated with innovation and market performance, with innovation playing a mediating role in this relationship. Qurniawati and Nurohman (2021) examined 100 halal food MSMEs in Surakarta and highlighted the role of financial literacy and financial technology in business performance and sustainability. At the supply chain level, Ardiantono et al. (2024), based on assessments from nine informants, identified the cost of implementing blockchain as one of the major barriers to halal supply chain implementation.

Beyond strategy and governance, business development also depends on entrepreneurial capabilities, institutional structures, and local resources. Anggadwita et al. (2021) discussed the empowerment of Islamic boarding schools in Indonesia through a humane entrepreneurship approach, while Santosa (2024) highlighted the development of work ethics and entrepreneurial skills in Islamic boarding school settings. In the batik sector, Poernomo et al. (2025), based on 80 business owners in East Java, found that entrepreneurial and learning orientations strengthened competitive advantage, whereas market orientation improved business performance. Suprayitno et al. (2025), through a survey of 155 batik MSME owners and managers in the Solo Raya region, found that entrepreneurial leadership and social capital positively affected business performance, while leadership and performance positively affected business sustainability. These findings indicate that business performance is associated with business strategies as well as institutional and social contexts.

Although previous studies have explained various factors associated with business performance, an analytical framework is still needed to connect regional economic capacity with the conditions for entrepreneurial development and evidence of

business outcomes in a local context. Regional statistics for Lamongan Regency demonstrate the substantial contributions of agriculture, fisheries, trade, and manufacturing to the local economy but do not directly explain firm-level profitability, business sustainability, or the compliance of business practices with Sharia principles. Conversely, studies of halal businesses, Islamic boarding schools, and batik provide insights into business development mechanisms, but their findings cannot directly represent the overall state of entrepreneurship in Lamongan. To address this gap, this study examines Islamic entrepreneurship opportunities in Lamongan Regency through descriptive analysis of secondary statistics and an integrative literature review. The analysis covers the region's productive capacity, the conditions supporting business development, and business outcomes and evidence of practices related to Sharia principles. Through this approach, the study seeks to map opportunities based on the available evidence while distinguishing economic potential from business success and Sharia compliance, which require verification at the firm level.

Method

This study employs descriptive analysis of publicly available secondary statistics and an integrative literature review to examine Islamic entrepreneurship opportunities in Lamongan Regency. Official statistics are used to describe the region's productive capacity, while institutional and cultural studies are used to understand the resources and enabling conditions for entrepreneurship. Document appraisal considers the origin, context, purpose, and limitations of each source, as outlined by Bowen (2009). The literature review follows Snyder's (2019) integrative review approach rather than a systematic review protocol. This study does not involve comprehensive database exports, screening based on a systematic protocol, or quantitative effect synthesis. Academic literature was searched selectively using topics related to Islamic entrepreneurship, halal certification, supply chain governance, entrepreneurship development in Islamic boarding schools, and local wisdom. Sources were retained based on their relevance and bibliographic traceability.

The primary geographical unit of analysis is Lamongan Regency, although the literature also includes institutional studies and research conducted in other regions. Regional economic data cover the period from 2021 to 2025. In the April 2026 GRDP publication, data for 2024 are classified as provisional, while data for 2025 are classified as highly provisional. Sectoral shares are calculated using GRDP at current prices, whereas economic growth is measured at constant 2010 prices (Statistics Indonesia of Lamongan Regency, 2026a, 2026b). Rice statistics are drawn from the December 2025 publication, while fisheries indicators cover production and processing activities reported for 2025. Studies of Islamic boarding schools and batik retain their respective institutional or cultural units of analysis. Table 1 presents the data sources, periods,

reported measures, and interpretive limitations to ensure that regency-level statistics, case studies, and business research from other regions are not treated as equivalent forms of evidence.

Table 1. Secondary data sources, units of observation, and interpretive limitations

Source	Period	Reported measures	Interpretive limitations
GRDP by industry, Statistics Indonesia (BPS)	2021–2025	Sectoral shares at current prices and real growth at constant 2010 prices	Does not indicate the proportion of firms that apply Sharia principles
Rice statistics, BPS	2025	Harvested dry paddy, milled dry paddy, and rice	Different measures of the same commodity that cannot be added together
Lamongan Regency Fisheries Office	2025	Capture fisheries, aquaculture, processing units, and processed output	Does not directly indicate certification status or profitability
Falach et al.	2023	Case study of one Islamic boarding school	Does not represent all Islamic boarding schools in Lamongan
Halal business studies	2019–2025	Findings from business studies conducted in other regions	Cannot be treated as estimates specific to Lamongan Regency
Government and batik studies	2021–2026	Batik motifs, craft traditions, and local identity	Does not directly establish income levels or Sharia compliance

Source: Compiled by the authors based on official statistics and the cited studies. The original geographical settings and units of observation of each source are retained.

The analysis involved descriptive calculations and a comparative synthesis of the collected evidence. The share of each industry (i) in year (t) was calculated using the following equations.

Equation (1). Industry Share of Gross Regional Domestic Product (GRDP) (1)

$$S_{i,t} = \frac{Y_{i,t}}{Y_t} \times 100\%$$

Equation (2). Change in Industry Share (2)

$$\Delta S_i = S_{i,2025} - S_{i,2021}$$

Equation (2) indicates increases or decreases in sectoral shares over the observation period. A positive value indicates an increase in a sector's share, whereas a negative value indicates a decrease. These calculations are descriptive and do not identify causal relationships. The sources were then analyzed using three categories: (I) productive capacity, (II) business-enabling conditions, and (III) business outcomes and sustainability. Each claim was assessed in terms of geographical coverage, period, unit

of observation, research design, and reported measures. Findings from other regions were used for comparison rather than as direct evidence of conditions in Lamongan. When comparable business outcome data were unavailable, conclusions were limited to identifying opportunities and evidence gaps rather than asserting verified business success or Sharia compliance.

Results and Discussion

Regional economic structure and agro-maritime entrepreneurship opportunities

Lamongan Regency has an economic structure that creates opportunities for entrepreneurship in agriculture, fisheries, trade, and manufacturing. In 2025, Lamongan's gross regional domestic product (GRDP) at current prices reached approximately IDR 56.11 trillion, while real economic growth stood at 5.40% (Statistics Indonesia of Lamongan Regency, 2026a). These figures indicate continued regional economic activity but do not explain how its benefits are distributed among business actors. To identify sectors relevant to agro-maritime entrepreneurship, the regional economic structure must be examined in terms of sectoral contributions and changes over several years. This analysis can reveal sectors with strong production or trading bases. However, GRDP is a regional economic indicator, not a direct measure of the number of businesses, entrepreneurs' profits, or business compliance with Sharia principles. It therefore provides a starting point for identifying business opportunities.

In 2025, agriculture, forestry, and fisheries accounted for 30.18% of Lamongan's GRDP at current prices. Wholesale and retail trade, including vehicle repair, contributed 19.43%, while manufacturing accounted for 12.84%. Together, these three sectors represented 62.45% of the regional GRDP (Statistics Indonesia of Lamongan Regency, 2026b). Table 2 shows that these sectors remained major components of Lamongan's economy throughout 2021–2025, although their respective shares changed over time. In 2025, agriculture, forestry, and fisheries continued to make the largest contribution, while manufacturing ranked third. This composition is relevant for identifying potential linkages between primary production, processing, and marketing. Nevertheless, a sector's substantial share does not, by itself, indicate how many small businesses participate in it or how much added value they capture. Sectoral data must therefore be supplemented with firm-level evidence.

Table 2. Shares of the three leading sectors in Lamongan's GRDP at current prices, 2021–2025 (%)

Economic sector	2021	2022	2023	2024*	2025**
Agriculture, forestry, and fisheries	33.00	32.84	31.53	30.10	30.18
Trade and vehicle repair	18.94	19.40	19.71	19.80	19.43
Manufacturing	11.28	11.38	11.74	12.23	12.84
Total for the three sectors	63.22	63.62	62.98	62.13	62.45

Source: Statistics Indonesia of Lamongan Regency (2026b, Table 3.1, p. 45). Data for 2024 are provisional, while data for 2025 are highly provisional. Totals were calculated by the authors.

Comparison of the figures in Table 2 reveals different trends across sectors. The share of agriculture, forestry, and fisheries declined from 33.00% in 2021 to 30.18% in 2025, whereas the share of trade increased from 18.94% to 19.43%. By contrast, manufacturing rose from 11.28% to 12.84%, an increase of 1.56 percentage points. Figure 1 visually presents these changes, making it easier to compare the direction of each sector's trend. The differences between the table values and the lines in the figure do not represent separate findings; rather, they present the same data for different purposes. The table provides detailed figures, while the figure emphasizes changes over time. The graph helps readers identify general trends without replacing the numerical information in the table. It should be noted that the 2024 data remain provisional and the 2025 data are highly provisional; therefore, the latest comparisons should be interpreted cautiously.

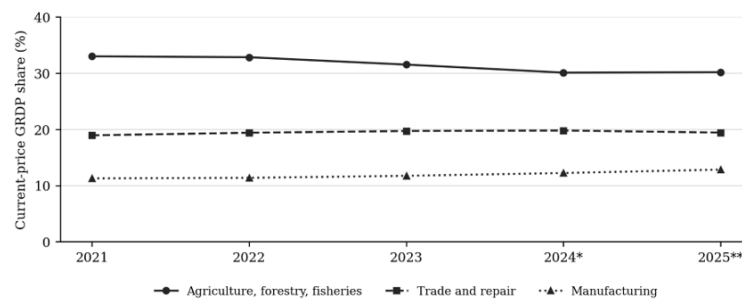


Figure 1. Shares of the three leading sectors in Lamongan's GRDP at current prices, 2021–2025

Source: Statistics Indonesia of Lamongan Regency (2026b, Table 3.1, p. 45). Data for 2024 are provisional, while data for 2025 are highly provisional.

Figure 1 further illustrates that manufacturing's share increased consistently throughout the observation period, whereas the share of agriculture, forestry, and fisheries tended to decline. Real growth figures provide additional context: manufacturing grew by 9.25% in 2025, compared with 4.81% for agriculture, forestry, and fisheries (Statistics Indonesia of Lamongan Regency, 2026b). Manufacturing therefore recorded faster real growth in that year. However, these two indicators do not establish that local manufacturing absorbed more agricultural or fisheries output from Lamongan. Growth may have originated from various manufacturing activities, and GRDP shares are also influenced by relative changes across sectors. Establishing that local downstream processing has occurred requires data on the origin of raw materials, the types of products processed, purchases from local producers, and transactions between sectors. Interpretation must therefore distinguish real growth from changes in sectoral shares.

Rice production data provide a more concrete indication of the scale of Lamongan's agricultural base. In a statistical release published in December 2025, Statistics

Indonesia of Lamongan Regency estimated harvested dry paddy production at 1,088.03 thousand tonnes, equivalent to 904.93 thousand tonnes of milled dry paddy and 522.52 thousand tonnes of rice for domestic consumption. Estimated milled dry paddy production increased by 16.57% compared with 2024 (Statistics Indonesia of Lamongan Regency, 2025). These three figures represent the same commodity at different stages or under different measurement standards and should not be added together as separate categories of production. The data demonstrate the substantial scale of local rice production. However, production figures do not indicate the volume sold through local rice mills, the extent of post-harvest losses, or the economic value received by farmers. Such information is necessary before these opportunities can be translated into measurable business recommendations.

The substantial volume of rice production creates opportunities to develop rice milling, storage, packaging, quality control, and distribution businesses. These activities could generate additional economic value if they maintain product quality, reduce post-harvest losses, and connect farmers with markets efficiently. Within the framework of Islamic entrepreneurship, such opportunities could be pursued through transparent transactions, clear information about product quality and prices, and supply chain management that prioritizes product safety and traceability. Nevertheless, these opportunities do not establish that such businesses are profitable or that market demand in Lamongan remains unmet. Feasibility assessments require data on milling capacity, storage costs, selling prices, distribution networks, and the proportion of locally sourced raw materials. Without firm-level information, the scale of rice production indicates the availability of a raw material base rather than providing an estimate of profitability or entrepreneurial success. Market evidence remains necessary to determine investment priorities.

The fisheries sector also provides a productive base relevant to agro-maritime entrepreneurship. In 2025, marine capture fisheries production in Lamongan Regency reached 79,685.22 tonnes, inland open-water capture fisheries production amounted to 3,163.57 tonnes, and aquaculture production reached 46,941.85 tonnes. In the same year, the sector comprised 1,330 fish-processing businesses, employed 6,052 workers, and produced 93,732.05 tonnes of processed fish products. Table 3 summarizes these indicators to illustrate the scale of fisheries activities in Lamongan, from primary production to processing. The data indicate that fisheries-related economic activity extends beyond capture and aquaculture to include processing activities that employ workers. Nevertheless, these aggregate figures do not reveal the scale of individual businesses, labor productivity, or how added value is distributed among fishers, aquaculture producers, processors, and traders.

Table 3. Fisheries production and processing activities in Lamongan Regency, 2025

Indicator	Value
Marine capture fisheries production	79,685.22 tonnes
Inland open-water capture fisheries production	3,163.57 tonnes
Aquaculture production	46,941.85 tonnes
Fish-processing businesses	1,330 units
Workers in fish processing	6,052 people
Processed fisheries output	93,732.05 tonnes

Source: Lamongan Regency Fisheries Office, official profile reporting data for 2025.

The data in Table 3 show that fisheries activities in Lamongan encompass capture fisheries, aquaculture, and processing. The presence of 1,330 fish-processing businesses and 6,052 workers indicates an established business base and employment generation at the downstream stage. However, processed output of 93,732.05 tonnes cannot automatically be interpreted as the volume of locally caught fish processed, because the available data do not specify the origin of all raw materials. Similarly, the number of processing businesses does not indicate how many hold halal certification. Thus, the data are sufficient to describe the scale of fisheries activities but cannot establish halal compliance, business profitability, or the amount of added value retained by local business actors. Further assessment requires firm-level data, including raw material sources, processing costs, marketing channels, and certification status.

The substantial production and processing base creates opportunities to develop food and fisheries businesses managed in accordance with Islamic principles. However, economic opportunities must be distinguished from evidence of halal standard implementation and business success. Jannah and Al-Banna (2021), in a survey of 176 consumers and 95 entrepreneurs, found that consumer halal awareness influenced purchase intention, while entrepreneurs' halal awareness influenced product traceability. However, traceability was not found to moderate the relationship between consumer halal awareness and purchase intention. Meanwhile, Indarti et al. (2021), in a review of 87 halal supply chain articles published between 2009 and 2019, identified quality control, production and distribution processes, and operational support as important themes. These findings can inform the development of evaluation indicators for fisheries businesses in Lamongan, but they do not demonstrate that these practices have been implemented by local firms. Evaluation must therefore directly examine costs, sales, raw material traceability, halal certification, contracts, and sources of financing.

Pesantren business capacity and the economic potential of Sendang Duwur batik in Lamongan

Islamic boarding schools (*pesantren*) and local wisdom are two resources that can support entrepreneurship development in Lamongan through different mechanisms. Pesantren possess institutional capacities in business unit management, skills development, and social networking, while local wisdom provides production knowledge, cultural identity, and values that can be developed into economic products. The potential of both resources depends not only on their availability but also on the ability to transform them into productive and sustainable business activities. In the context of pesantren, Falach et al. (2023) demonstrated that *santripreneur* development at Sunan Drajat Islamic Boarding School in Lamongan proceeds through four stages: business initiation, stabilization, growth and development, and business synergy. This model connects the values of *tawhīd*, ethics, work discipline, training, and alumni involvement with the development of economic activities.

The findings of Falach et al. (2023) indicate that pesantren entrepreneurship cannot be developed solely by instilling business motivation; it also requires learning processes and institutional support. Students' skills need to be developed gradually, while business units provide opportunities to apply knowledge and gain work experience. Ahwarumi and Munir (2026), who also examined Sunan Drajat Islamic Boarding School, highlighted the development of technical, managerial, and digital skills through business units in services, industry, retail, and technology. Because both studies focus on the same institution, their findings are better understood as providing a deeper examination of a single institutional context rather than evidence from two different pesantren. Analytically, both studies demonstrate the importance of integrating education, business experience, and organizational management. However, the existence of entrepreneurship programs does not necessarily indicate that all business units have achieved profitability or financial sustainability.

The importance of these learning processes is also evident in Ghafar's (2023) study of Darul Amien Islamic Boarding School in Banyuwangi. Based on in-depth interviews, non-participant observation, and documentation, the study identified three stages of entrepreneurship education: instilling responsibility, independence, and a sense of family; introducing students to pesantren business units and providing internship experience through on-the-job training; and mentoring students with individuals who possess business expertise. These findings clarify that entrepreneurial capacity develops through a combination of values, practical experience, and mentoring. Meanwhile, Hakim et al. (2025), in a qualitative study of three pesantren in Java, found that these institutions developed small-scale agribusinesses, cooperatives, and student entrepreneurship incubators. However, most business activities lacked formal

business structures, and the incubation programs remained informal. Together, these studies indicate that entrepreneurship education needs to be accompanied by stronger governance so that students' skills can develop into more organized business ventures.

The economic and social dimensions of pesantren business management are evident in the qualitative study by Firmansyah et al. (2025) at Karangasem Muhammadiyah Islamic Boarding School in Paciran, Lamongan. The study found that profits from plantation and livestock business units were used to finance pesantren operations and scholarships for underprivileged students. These business activities also supported job creation and skills training, although livestock waste management and the use of environmental resources remained suboptimal. At a broader level, Nashrullah et al. (2026) examined five pesantren in East Java that operated business units through in-depth interviews, participant observation, and document analysis. Their findings showed that social entrepreneurship was institutionalized through the integration of Islamic values, local wisdom, and business practices, with leadership, stakeholder collaboration, social-commercial strategies, and organizational learning serving as supporting factors. These findings position social benefits as an integral part of business management rather than merely a by-product of economic activity.

Whereas pesantren offer organizational and learning capacities, Sendang Duwur batik provides an entrepreneurial resource rooted in production skills and cultural identity. The Lamongan Regency Community and Village Empowerment Office (2025) documented the distinctive characteristics of hand-drawn batik from Sendang Duwur, Paciran District, particularly its use of local motifs and traditional techniques involving a *canting* and *malam* (wax). Through a literature review and content analysis, Evanti et al. (2024) identified eight motifs: Bandeng Lele, Gapuro Tanjung Kodok, Kepiting, Singo Mengkok, Gedangan, Mondang Liris, Mondag Sungut, and Patinan. These motifs were associated with 18 character education values, while batik products were used for purposes including official uniforms, *sarung* (traditional tubular garments), *jarik* (traditional cloth), and decoration. These findings suggest that the economic value of batik is linked to both material craftsmanship and symbolic meaning. Nevertheless, the richness of its motifs and cultural values cannot directly measure artisans' income, consumer demand, or product competitiveness.

The relationship between culture and economic activity becomes clearer when batik is understood as a product of its social environment rather than merely as a product with distinctive motifs. Using an anthropological-historical approach, Ramadhan et al. (2026) interviewed ten informants: two village heads, three artisans, three business owners, and two batik traders. Their study explained the development of Sendang Lamongan batik through three interrelated elements: ecological-material conditions, social structures, and cultural and ideological values. This means that the sustainability of batik businesses depends not only on design but also on the

availability of materials and skills, relationships among actors, and the cultural meanings maintained by the community. Rahayu and Abidin (2021) are also cited in the literature on Sendang Duwur batik, but their specific findings need to be verified against the original source before they can support particular claims. Accordingly, the available cultural evidence is more useful for explaining product characteristics and production contexts than for drawing conclusions about the economic performance of batik businesses.

Studies from other regions help explain mechanisms through which local wisdom may be linked to business performance, although their findings cannot be directly applied to Lamongan. Elistia et al. (2022), in a survey of 30 songket weaving business owners in Sumber Harapan Village, Sambas Regency, found that social capital and innovation capabilities had significant positive effects on business performance, whereas entrepreneurial orientation did not have a significant positive effect. Meanwhile, Gunawan et al. (2023), in a qualitative study of 12 MSMEs in Badung Regency, Bali, explained how local wisdom was incorporated into social responsibility toward customers, workers, the environment, and the community. These studies indicate that local resources do not automatically improve business performance; their benefits depend on how business actors manage social relationships, innovate, and translate values into business practices. For Sendang Duwur batik, these relationships still need to be examined using data on production costs, prices, quality, marketing, sales, and the continuity of artisans' businesses.

In the context of the halal product market, Marwini et al. (2025) provide an additional perspective on the relationship between economic activity and consumption. The study used secondary data from seven cities in East Java covering 2003–2022 and analyzed the data using static panel regression. The findings showed that operating revenue in the halal meat manufacturing industry had a significant effect on halal meat consumption, whereas the number of workers and seasonal income among halal meat MSMEs did not have statistically significant partial effects. These findings indicate that economic activity and employment do not necessarily have the same relationship with market demand. However, the study examined halal meat consumption rather than batik or pesantren entrepreneurship in Lamongan. Its findings therefore cannot serve as direct evidence of demand for local products. Instead, they provide a comparative perspective that highlights the importance of examining relationships between productive capacity, business revenue, and consumption using data appropriate to the sector and geographical area under investigation.

Overall, pesantren and Sendang Duwur batik can be understood as two complementary foundations for entrepreneurship development in Lamongan. Pesantren can potentially provide organizational capacity, training, networks, and social support, while batik offers production skills, cultural identity, and product

differentiation. Both can support Sharia-compliant entrepreneurship when religious and cultural values are translated into concrete business practices, such as fair transactions, responsible management, financing arrangements that comply with the relevant contractual principles, and protection for workers and consumers. However, these opportunities must be distinguished from demonstrated outcomes. Existing batik studies are insufficient to establish increases in profits or market share, while the available pesantren studies focus on specific institutional cases. Further assessment therefore requires local data on financing sources and contractual arrangements, turnover, costs, profits, employment, business continuity, and the halal certification status of relevant products.

Assessing Islamic entrepreneurship: Business performance, Sharia compliance, and evidence gaps

Economic potential cannot be equated directly with the success of Islamic entrepreneurship because productive resources, business performance, and Sharia compliance represent distinct dimensions. This distinction is evident in studies examining halal certification among micro, small, and medium-sized enterprises (MSMEs). Giyanti and Indriastiningsih (2019), in a survey of 85 food MSMEs in Surakarta, found no statistically significant differences in profit margins before and after certification or between certified and non-certified businesses. However, they identified significant differences in operational performance measures based on respondents' assessments. These findings suggest that the benefits of certification should not be evaluated solely in terms of profit. Changes in production capacity, product quality, sales, customer loyalty, and market reach are also relevant, although these indicators do not automatically demonstrate increased profitability.

Differences across previous studies indicate that the relationship between halal certification and business performance depends on the indicators used and the context of the businesses examined. Hidayat and Witta (2024), through a systematic review of literature published between 2019 and 2024 and retrieved from Google Scholar, identified the potential of halal certification to support operations, product sustainability, competitiveness, and market expansion, while also highlighting the constraints MSMEs face in obtaining certification. Meanwhile, Azizah et al. (2025) analyzed 925 MSMEs across 32 provinces in Indonesia using partial least squares structural equation modeling (PLS-SEM) and found a positive relationship between halal certification and operational and financial performance; operational performance also mediated this relationship. Kristanto and Kurniawati (2025) found positive relationships between certification and supply chain resilience, competitive advantage, and financial performance among halal-certified frozen food MSMEs. These findings support the potential benefits of certification but do not guarantee uniform outcomes across all businesses.

To assess Islamic entrepreneurship in Lamongan, these findings need to be situated within a business ecosystem framework rather than treated as direct evidence of local conditions. Stam (2015) emphasizes the importance of entrepreneurial ecosystem quality, while Spigel (2017) explains that ecosystems emerge from interactions among cultural, social, and material attributes. This framework helps explain why agricultural and fisheries resources, pesantren institutions, artisans' skills, marketing networks, and access to financing should be examined as interconnected elements. However, the presence of these elements does not establish that businesses are profitable, generate sustained employment, or follow all business practices in accordance with Sharia principles. Evidence of entrepreneurship in Lamongan must therefore be distinguished according to what is actually measured: productive capacity, business-enabling conditions, or verifiable business outcomes.

Table 4. Framework for assessing evidence of Islamic entrepreneurship in Lamongan

Assessment level	Dimensions examined	Evidence available in this study	Additional evidence required
I. Productive capacity	GRDP structure, agricultural and fisheries production, and number of processing units	Statistics Indonesia (BPS) statistics and Fisheries Office data	Raw material origins, subsector details, and product flows
II. Business-enabling conditions	Skills, networks, institutions, halal certification, and financing	Pesantren case studies, batik studies, and related literature	Identifiable business-level data, certification status, and evidence of financing actually used
III. Business outcomes and sustainability	Sales, profits, productivity, employment, business continuity, and Sharia-compliant practices	Findings from previous studies in diverse contexts; comparable regency-level data are not available in the evidence reviewed	Repeated business-level data, financial records, employment data, transaction records, and verification of Sharia-compliant practices

Source: Authors' synthesis based on the data and literature reviewed. These three levels constitute a framework for organizing evidence rather than empirically tested causal stages.

The framework in Table 4 emphasizes that sectoral statistics and case studies serve different purposes. Production data indicate the scale of economic activity, whereas studies of pesantren and batik help explain institutional capacity, skills, and cultural resources. Both are important, but neither is sufficient to establish the performance of all businesses in Lamongan. For example, substantial fisheries production does not necessarily indicate how much added value local business actors retain, just as the existence of entrepreneurship programs in pesantren does not automatically demonstrate the success of the businesses they support. A stronger assessment requires linking production data with business identities, transactions, costs, revenue,

employment, and business continuity. Accordingly, an evidence gap does not mean that Islamic entrepreneurship is not developing; rather, its extent cannot yet be assessed comprehensively using the available data.

The need for more measurable evidence is also related to the concept of Islamic entrepreneurship itself. Rafiki et al. (2023), in a systematic review of 274 Scopus-indexed documents published since 1990, mapped developments and themes in Islamic entrepreneurship research, but their review did not measure business performance in Lamongan. Tarip (2024) subsequently reviewed six Islamic entrepreneurship models and identified inconsistencies in their objectives, core components, and levels of analysis. The synthesis situated financial sustainability within the broader scope of *maqāṣid al-sharī'ah* (the objectives of Islamic law). This framework highlights that business success involves not only profit but also the objectives pursued and the practices adopted. Nevertheless, these normative concepts must be translated into verifiable indicators. For example, a product's halal certificate does not, by itself, demonstrate compliance across all financing contracts, transaction practices, employment relationships, and corporate environmental responsibilities.

Table 5. Entrepreneurship claims and the evidence needed to test them

Potential claim	Alternative explanations to examine	Evidence required
An increase in manufacturing's share indicates stronger local businesses	Changes in sectoral composition or relative prices may affect sectoral shares without increasing the use of local inputs	Input origins, value added, and product flows
Halal certification increases profits	Business outcomes may also be influenced by firm size, age, management, and marketing channels	Performance data before and after certification and a comparison group
Pesantren programs produce successful businesses	Business units may primarily serve the institution's internal needs	External sales, profits, employment, and business continuity
Local wisdom increases the selling price of batik	Distinctive motifs do not necessarily generate higher margins	Prices, production costs, sales volume, and marketing channels
High processed fish output reflects local fish catches	Raw materials may originate outside the region, and statistical definitions may differ	Records of raw material origins, processing volumes, and product distribution

Source: Authors' synthesis. The alternative explanations listed are possibilities to be tested, not findings establishing that these conditions necessarily occur in Lamongan.

Table 5 clarifies why the relationship between potential and business outcomes must be tested rather than assumed. Each claim has alternative explanations that may change how the evidence is interpreted. Consequently, aggregate figures and

examples of successful businesses should not be used to represent all business actors. A more robust assessment requires business-level data, including raw material sources, costs, turnover, profits, certification status, financing, employment, and business longevity. For *pesantren* businesses, these data could be supplemented with information about sales destinations, beneficiaries, and the contribution of profits to the institution's social activities. For Sendang Duwur batik, records of prices, production costs, sales volumes, and distribution channels could help determine whether cultural distinctiveness generates additional economic value. Such data would enable a more measurable analysis while reducing the risk of drawing broad conclusions from limited evidence.

Given these limitations, the next step is to develop a business database linking regional economic potential with business outcomes and Sharia-compliant practices. Data collection could begin with agro-maritime enterprises, *pesantren* business units, and batik artisans, recording business characteristics, products, markets, employment, certification, financing, and financial performance at regular intervals. Surveys of certified and non-certified businesses could also compare performance while accounting for differences in firm size, age, and marketing channels. A more comprehensive assessment of Islamic entrepreneurship would additionally require examining financing contracts, transaction transparency, the fulfillment of workers' rights, and social and environmental responsibilities. These measures constitute an agenda for future data collection and testing rather than empirical findings established by the present study. In this way, claims about the success of Islamic entrepreneurship in Lamongan can be developed incrementally, transparently, and in proportion to the strength of the available evidence.

Conclusion

This study demonstrates that Islamic entrepreneurship opportunities in Lamongan Regency are rooted in the interplay between agro-maritime economic capacity, the institutional resources of Islamic boarding schools (*pesantren*), and the local wisdom embodied in Sendang Duwur batik. However, substantial sectoral potential does not automatically indicate business success or comprehensive adherence to Sharia principles. This distinction is important because productive resources provide only the foundation for entrepreneurial activities, while economic value creation depends on business actors' ability to process raw materials, establish market networks, develop skills, and sustain their operations. Similarly, halal certification can support operational performance and competitiveness, but its relationship with profitability is not uniform. Therefore, assessing Islamic entrepreneurship requires linking productive capacity, business-enabling conditions, and business outcomes to measurable indicators, while also examining whether financing arrangements,

transactions, employment practices, and social responsibilities comply with Sharia principles.

This study contributes a three-level assessment framework that distinguishes productive capacity, business-enabling conditions, and business outcomes and sustainability. The framework helps prevent economic potential, commercial success, and Sharia compliance from being treated as equivalent, while providing a basis for designing data collection on Islamic entrepreneurship in Lamongan. Nevertheless, this study has limitations because it relies on aggregate statistics, case studies, and literature from diverse geographical contexts and business sectors. The available evidence is insufficient to measure the performance of all businesses or establish causal relationships at the regency level. Future research should collect business-level data periodically on turnover, costs, profits, employment, raw material origins, certification status, access to financing, and business continuity. Comparisons between certified and non-certified businesses, combined with assessments of business practices relevant to Sharia principles, are also needed to examine the conditions under which agro-maritime potential, pesantren institutions, and local wisdom can generate sustainable and responsible economic benefits.

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