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Female Entrepreneurs Role in Enhancing Halal MSME Growth and Profitability

Haifa Zulfatul Ihsan ^a , Yunaita Rahmawati ^b

^a. Department of Sharia Accounting, Faculty of Economics and Islamic Business, Universitas Islam Negeri Kiai Ageng Muhammad Besari Ponorogo, Ponorogo, Jawa Timur, 63492, Indonesia

^b. Department of Sharia Accounting, Faculty of Islamic Economics and Business, State Islamic Institute of Ponorogo, Ponorogo, Jawa Timur, 63492, Indonesia

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Haifa Zulfatul Ihsan

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ABSTARCT



Objective: This paper investigates the underlying mechanisms by which entrepreneurial competence, networking, gender, and marketing capability influence business growth via innovation adoption.

Methods: This study was quantitative, and data collection used a structured questionnaire among small, medium microenterprises Halal certified. Hypothesized relationships were tested using regression and mediation analyses.

Results: Results show that marketing capability has the most powerful effect on business growth, and all four factors are statistically significant. Innovation adoption partially mediates these relationships: much of their impact on growth is accounted for by the ways in which they affect new processes, products, and business models. The research supports a complex view of resources and environments that are involved in the dynamic reformation between internal capability and external relationships through learning faster from innovation for competitive advantage and market enlargement.

Novelty: This study contributes to the theoretical development of a new integrated model, which places adoption of innovation as an intra-mechanism transforming entrepreneur resources into growth, and for the first time, developed within a dynamic, ethics-rooted Halal industry context. Insightful procedures for strategic organizing.

Research Implication: The outcomes contribute a validated model which policymakers and business developers can use to create integrated interventions that simultaneously reinforce core competences, strategic networks, and marketing capabilities aimed at stimulating an innovation culture in order to enhance sustainable business performance and sectoral resilience.

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1. Introduction

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The Halal global market has shifted from a traditional food-centred focus, evolving into a comprehensive ecosystem encompassing sectors like pharmaceuticals, cosmetics, fashion, and tourism (S. E. Hidayat et al., 2021; Muhammad & Junejo, 2025). This transformation positions it on a trajectory to achieve several trillions of dollars in revenue (Chowdhury et al., 2023; Wadud & Ali, 2023). Micro, small and medium-sized enterprises (MSMEs) are at the heart of this expansion, accounting for the largest proportion of halal business operators, particularly in developing countries (Darmalaksana, 2023; Y. Hidayat et al., 2024). Women entrepreneurs are increasingly recognised as key drivers of change in this field, promoting innovation and community oriented economic development (Ahmed et al., 2025; Yadav et al., 2025). The market potential is promising, but challenges for halal MSMEs mean they often fail to achieve sustainable growth and scalability. Instead, they remain informal, subsistence-based enterprises (Sari et al., 2024), as opposed to being formal and profitable. The underlying cause of this challenge is a quintessential research phenomenon: What are the specific factors that can encourage the growth and profitability of businesses that are led or managed by women and which follow Halal principles?

As the halal industry is constantly changing and growing, one significant yet challenging theme within the halal sector today is the interrelationship between the characteristics of entrepreneurship and the features of the market. The demand for halal products and services is on the rise, but MSMEs face stringent certification processes, fierce global competition and rapid digital transformation within their own organisations (Fauziah et al., 2025; Jaiyeoba et al., 2025). Additionally, gender disparities can hinder female entrepreneurs' progress by imposing unique challenges related to finance, technology and business networks (Jamali, 2009; Martins et al., 2024). Additionally, the post pandemic environment has accelerated the need for innovation, making digital marketing and e-commerce capabilities integral to survival and expansion rather than just desirable factors (Costa & Castro, 2021). This scenario provides fertile ground for research into how these variables interact to impact performance.

The study is based on an integrated theoretical framework. Gupta et al. (2018), Robins & Wiersema (1995), the Resource-Based View (RBV) is a way of looking at how important and unique certain skills, networking and marketing abilities are to a company. These can be seen as important and unique resources that can help a company beat its competitors (Barney, 2018; Gupta et al., 2018). Theory posits that relational capital provides access to vital resources and knowledge (Araujo & Easton, 1999). Diffusion of innovations theory Rogers et al. (2014) describes how new ideas and technologies are adopted within a social system, with the process of adoption becoming fundamental to growth. Including these theories provides a new perspective through which to examine the drivers of Halal MSME performance.

However, despite some research having been conducted, large uncertainties and gaps remain. While some studies have found a direct positive relationship between entrepreneurial competence and growth Mitchelmore (2010) Tehseen et al. (2019), others in developing contexts have not found this link to be significant, weak, or fully mediated by other variables such as access to market (Al Mamun et al., 2018; Amini Sedeh et al., 2022; Soomro et al., 2024). Similarly, the influence of gender remains debated, with previous studies suggesting that sectors led by women experience slower firm growth Dean et al. (2019), Tharenou (1999), though in a halal context, female led companies have been shown to be more resilient and to foster customer loyalty (Anwar, 2025; Anwar et al., 2025; Mohamed et al., 2020; Quoquab et al., 2019). Although the idea of innovation adoption as a mediating factor makes theoretical sense, there is no consistent empirical evidence to support this. Sok et al. (2017), Yuan et al. (2016), found no mediation, whereas Aboelmaged (2019) Voola et al. (2012), Zehir et al. (2015) found partial mediation when innovation fully mediated the marketing capability growth relationship. The fact that the literature on this subject is inconsistent indicates a clear research gap, and this is where the current investigation comes in. The aim of the current investigation is to resolve these inconsistencies by testing a unidimensional model. This model considers innovation adoption as the central mediating mechanism through which key entrepreneurial resources and gender dynamics can influence halal MSME growth. This is a subject that scholars rarely treat in prior literature.

The main aims of this study are twofold. The primary objective is to empirically evaluate the direct impact of entrepreneurial competence, networking, gender and marketing capability on innovation adoption. The secondary objective is to examine the growth of halal MSME. Most importantly, the study aims to ascertain the mediating effect of innovation adoption in the aforementioned relationships. The results will hopefully confirm an integrated Resource-Based View (RBV), Social Network and Diffusion of Innovations framework in the halal context, thereby contributing to a robust theoretical argument. The study offers practical guidance for policymakers, business development agencies and women entrepreneurs. This guidance will help them to develop specific plans to improve capabilities, expand networks and create a culture of innovation. The aim is to unleash the maximum economic potential of Halal MSMEs at the global level.

2. Theoretical foundation

2.1 *The impact of entrepreneurial competence on halal MSME development*

Abilities, knowledge and skills relating to entrepreneurship represent a vital asset for resilient businesses. For Halal MSMEs, this competence is essential. It helps them to face market dynamics. It also helps them to comply with general Sharia requirements. Theories underlying the Resource-Based View posit that firm-specific capabilities such as these drive competitive advantage and growth. This is in line with recent empirical studies. These include research focused on Indonesian Halal MSMEs (Hendratmi et al., 2023). It also includes research focused on Malaysian small businesses (Ramayah et al., 2022). These studies also confirmed that managerial skills in areas such as financial management and strategic planning positively contribute to business growth and market share. Therefore, it is hypothesised that:

H1: Entrepreneurial Competence has a positive effect on Halal MSME Growth.

2.2 *The influence of networking on the growth of halal MSMEs is examined.*

Networking is a way for firms to gain access to vital resources, information and market opportunities that would otherwise be out of reach. Robust networks can facilitate access to halal-certified supply chains, new customer bases and strategic partnerships for halal MSMEs. According to social network theory, the relational assets developed through networking are crucial for organisational growth. Contemporary research by Salam et al. (2024) on UAE enterprises has demonstrated that strong business and institutional ties are significantly correlated with increased sales growth. The same is true of geographic market penetration. A study by Abdullah et al. (2023) has also demonstrated this. These connections help overcome the resource constraints typical of small businesses. The following hypothesis is thus proposed:

H2: A positive effect on the growth of halal MSMEs is had by networking.

2.3 *The Influence of Gender on Halal MSME Growth*

Gender as a factor among others in the Halal industry The reference to gender was often made with regards to entering an entrepreneurial venture, and mentioned particularly in certain industries. Gender could affect progress outcomes in terms of access to capital, links and social norms. Feminist theory of entrepreneurship contends that women entrepreneurs may follow unique strategies that are relationship-based and effective. A recent study by Khan et al. (2023) also discovered the women run Halal MSMEs in Southeast Asia to enjoy special resilience and customer loyalty, and that of Davies et al. (2024) pointed out remaining market-specific gender bias. It implies that gender is not an idiosyncratic variable, but one which actively steers the pathways of business. Consequently, it is hypothesized:

H3: Gender has an effect on Halal MSME Growth.

2.4 *The Influence of Marketing Capability on Halal MSME Growth*

The marketing capability means that how much the company understand customer requirements and advertises its product. For Halal MSME, from presenting the genuine value of Halal proposition to the brand trust. The market-related competences such as these are critical for coping and growing through the change, according to the dynamic capabilities view of the firm. Recent findings by Pertiwi et al. (2024) finds that digital marketing capability significantly affects revenue growth of small Halal food businesses. Likewise, an international study (Ozturk et al., 2023) associated focused marketing policies with superior exports performance in the case of Halal products. Therefore, it is hypothesized:

H4: Marketing Capability has a positive effect on Halal MSME Growth.

2.5 The Influence of Entrepreneurial Competence on Innovation Adoption

The key issue for business owners is that competence provides entrepreneurs with the cognitive skills and practical abilities to recognise, evaluate and physically implement new ideas. Skilled entrepreneurs are more likely to recognise the strategic value of innovation and have the operational capacity to implement it. This is consistent with the theory of planned behaviour, which states that competence influences attitude and perceived behavioural control towards new behaviours, such as innovation. Recent research (Farida et al., 2023) has directly linked owner-manager knowledge to the adoption of e-commerce and digital tools in MSMEs. Another study identified strategic competency as a critical factor for the adoption of eco-friendly activities (Lee & Subramanian, 2024). Hence, it is hypothesised that:

H5: Entrepreneurial Competence has a positive effect on Innovation Adoption.

2.6 The influence of networking on innovation adoption

Networks are the main way that knowledge is shared, and they are also important for people to be exposed to new technologies, practices and market trends. Firm perceptions of risk and uncertainty regarding innovation can be reduced by engaging with a variety of other entities. The theory of the diffusion of innovations emphasises the importance of communication channels in the adoption process. Empirical research by Chen et al. (2024) showed that firms with richer external networks were more likely to adopt Industry 4.0 technologies. The effect of participation in industry associations on the adoption of halal traceability acceleration was investigated by Malaysia Halal Other research (Ibrahim Hassan, 2023). Accordingly, the following hypothesis is proposed:

H6: Networking has a positive effect on Innovation Adoption.

2.7 The Influence of Gender on Innovation Adoption

Depending on risk perception, access to technical information networks and strategic priorities, innovation adoption may be skewed by gender. Research shows that female entrepreneurs are keen to adopt innovations that streamline their work processes or improve customer service, but they may face challenges in accessing technology-focused networks. It was found by a study by Ngo et al. (2023) that the nature of innovation undertaken was impacted by gender diversity in top management teams. In addition, research on female entrepreneurs in Jordan (Al-Muasher et al., 2024) pinpointed their social capital as the primary factor influencing the adoption of fintech services, suggesting a gendered path to innovation. Thus, the following hypothesis is proposed:

H7: Gender has an effect on Innovation Adoption.

2.8 The Influence of Marketing Capability on Innovation Adoption

Robust marketing capabilities promote an understanding of the market, enabling firms to identify emerging customer needs that can be met with desirable new products. The firm's ability to sense market trends allows it to be more open to new products, services or processes that will benefit customers. This viewpoint aligns with

absorptive capacity theory, which posits that a firm's aptitude in assessing and utilising novel insights is contingent on its existing base of knowledge, encompassing market intelligence. One study found that MSMEs with advanced digital marketing were significantly more likely to use data analytics (Santoso et al., 2024). In order to maintain brand relevance, firms with a branding orientation are under pressure to innovate (Thompson, 2023). Therefore, it is hypothesized:

H8: Marketing Capability has a positive effect on Innovation Adoption.

2.9 *The Influence of Innovation Adoption on Halal MSME Growth*

The adoption of innovations is key for organizations. It helps them differentiate from competition. It also helps them increase overall efficiency. Innovations can be in processes, products or business models. It provides MSMEs with the opportunity to access new markets, improve quality and presentation, and reduce costs. According to Schumpeter's theory of economic development, innovation lies at the heart of market dynamics and firm growth. Research findings for this industry, including those by Hidayat et al. (2024) and Yusof et al. (2023), have proven that digital platforms and green innovations have a direct effect on enhancing profitability and market penetration among MSMEs. Innovation becomes a source of differentiation for these companies with regard to their halal products. Consequently, the following hypotheses are proposed:

H9: Innovation adoption directly influences Halal MSME growth.

2.10 *The mediation of innovation adoption*

Innovation adoption is conceptualised as an important mediating process that converts a firm's internal resources and external network ties into competitive advantage and firm growth. According to the Resource-Based View (RBV), resources such as entrepreneurial competence and marketing capability have no inherent value; rather, they only become economically valuable when integrated strategically to develop new processes, products or business models (Barney, 1991; Teece et al., 1997). In a similar vein, Social Network Theory posits that the benefits of having network access to information, resources and support should be tapped and transformed into innovations that can boost performance (Granovetter, 1985). There is a strong empirical basis for such a mediating pathway. For instance, Amin et al. (2024) discovered that innovation capability fully mediates the impact of entrepreneurial orientation on performance in SMEs in emerging economies. Zhang and Li (2023) also demonstrated the mediating effect of knowledge acquisition and innovation on strategic networking and firm growth. Further validation comes from Pertiwi et al. (2024), who demonstrated that digital innovation mediates the relationship between market sensing capability and business performance. Additionally, Lee and Subramanian (2024) revealed that innovation is the primary mechanism through which operational capability influences sustainability performance.

Including gender and marketing capability in this mediating mechanism highlights a significant aspect of the innovation-growth relationship. The impact of the founder's gender on performance is usually indirect. This is due to differing levels of access to resources, attitudes towards risk and strategic focus. These factors then influence the level at which innovation is pursued. Research by Ngo et al. (2023) found that the type of innovation mediates the relationship between gender diversity and firm performance. Furthermore, research on women entrepreneurs in the Middle East proved that social capital enhances the growth of their microenterprises by employing fintech innovations (Al-Muasher et al., 2024). In terms of marketing capability, firms can understand and meet their customers' needs directly. This provides a strong incentive for innovation. Innovation is needed to satisfy changing expectations. This in turn drives growth. Santoso et al. (2024) found that there is partial mediation in the relationship between digital marketing capability and MSME revenue growth via innovation adoption. Conversely, Thompson (2023) found through a meta-analysis that the direct relationship between marketing resources and long-term growth cannot consistently be positive without an intermediating innovation process. Thus, innovation adoption is proposed to play a critical mediating role in these linkages.

- H10: Innovation adoption moderates the link between entrepreneurial competence and halal MSME growth.
- H11: Innovation adoption mediates the relationship between networking and halal MSME growth.
- H12: Innovation adoption is a mediator between gender and halal MSME growth.
- H13: Innovation adoption mediates the relationship between marketing capability and halal MSME growth.

2.11 Research model framework

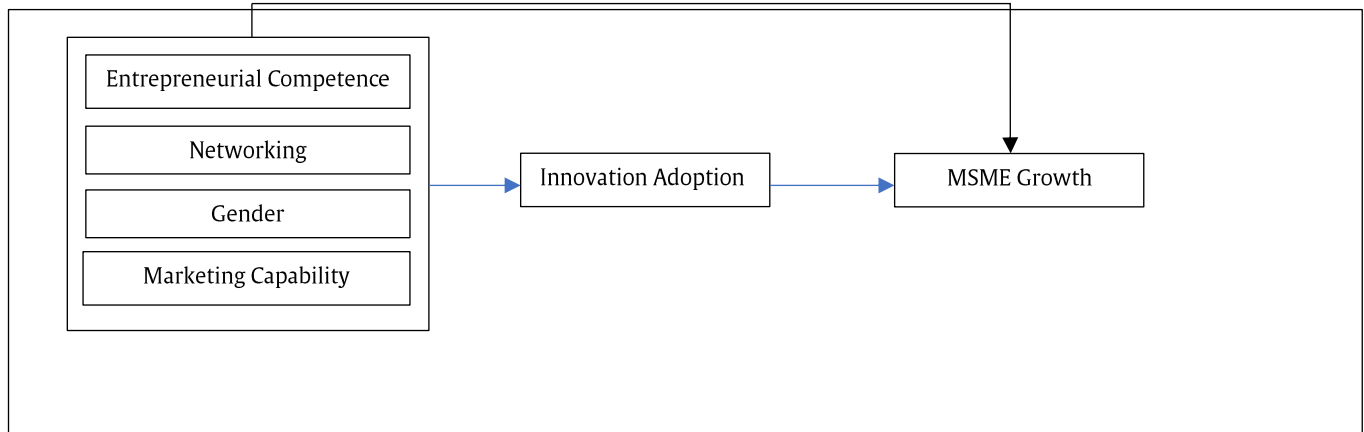


Fig 1. Conceptual model of development

3. Methodology

3.1 Research plan: A quantitative cross-sectional approach

The study uses a quantitative explanatory and cross-sectional approach to explore the causal relationship between entrepreneurship motivation, innovation adoption and the growth of halal MSMEs. This design is suitable for testing the hypothesis that innovation adoption serves as a mediating variable in interpreting the consequences of the independent variables (entrepreneurial competence, networking, gender, and marketing capability) on the dependent variable (MSME growth). This will allow researchers to collect data on all their variables. They can collect this data from sample group populations in a single period. This makes it possible to subject the proposed paths to rigorous statistical testing. This is according to Hair et al. (2019) and Sekaran & Bougie (2016).

3.2 Halal MSME sampling matrix

The population in this study is owner/manager of MSMEs Halal-certified in Indonesia. The sample was representative, using a multi-stage sampling approach. Firstly, purposive sampling was used to filter MSMEs that already had official Halal certification. This was followed by a stratified random sampling technique based on two dominant strata which are size of business (Micro, Small, Medium) and gender of lead entrepreneur (Male and Female). This method provides sufficient representation of various business sizes and gender dynamics, which is essential for generalising findings related to the role of women entrepreneurs (Saunders et al., 2019). The sample was size selected applying the thumb rule for SEM.

3.3 Instrument Design and Validation Protocol

The research instrument used in this study was a structured questionnaire that was developed by modification of good standard scales that emerged from previous literature to be adapted for the Halal MSME context. All these variables were measured on a five-point Likert scale, with 1 as (Strongly Disagree) and 5 as



(Strongly Agree). The subscales of Entrepreneurial Competence were obtained from (Kiyabo & Isaga, 2020) and (Man et al., 2002), which consist of opportunity recognition, strategic, and relational competencies. Networking was assessed by some items from (Watson, 2007) and (Sarkar et al., 2020), evaluated formal/informal business relationships in sense of strength and usefulness. source from (Vorhies & Morgan, 2005) and (Ngo & O’Cass, 2012), assessing pricing, promotion and channel management capabilities.

To measure Innovation Adoption, we used a scale from (Hult et al., 2004) and (Damanpour & Schneider, 2006). This scale reflected the use of new ways of working, new products and new ideas for running the company. Finally, MSME growth was measured using subjective growth measures in comparison to competitors over the past three years. This is an effective approach when access to objective financial data is limited, as discussed by Wijewardena and Tibbits (1999) and Gerschewski et al. (2015). Before it was used on a larger scale, the questionnaire was tested for clarity, context relevance and face validity. This was done by pre-testing it among academics and conducting a pilot study with 30 Halal SME managers.

3.4 Data collection observation

An ordered collection process in three steps was used. First was a series of expert reviews and pilot study for the calibration of the research instrument. The primary survey was subsequently delivered via on-line mechanisms and scheduled face-to-face engagement with entrepreneurs to maximise the response. The last step involved extensive data cleaning and preparation for analysis.

3.5 Analytical Framework: Order of Statistical Treatments

Sequential analyses were performed on SPSS to guarantee reliability. The procedure began with a pre-analysis, which consisted of the validity (convergent and discriminant) and reliability (Cronbach's Alpha and Composite Reliability) tests. Then, the main statistical assumptions such as normality, multicollinearity (VIF method) and homoscedasticity were checked. Lastly, the direct effects of these four factors were tested for hypothesis testing through Multiple Regression Analysis, and the mediating hypotheses (H10-H13) were also analysed using Process Macro strategy (Model 4), which can assess the significance of indirect effects by bootstrapping methods (Hayes, 2018).

4. Findings of the Study

4.1 Profile of halal MSME respondents

The sample profile is shown to be ideally balanced in terms of the major demographic and business variables. The Gender ratio indicates close to parity with 52% males and 48% females respondents, this is considered enough ratio for gender analysis. The distribution of business scale mirrors the pattern common for MSME sectors in developing economies, which are dominated by micro-enterprises (1 – 10 employees) that reach up a share of 65% followed by small enterprises (25%) and medium enterprises (10%). Cohort show that half (50%) the sample are age five or older, representing mature firms with considerable operational experience, 35% have been around for between three to five years and 15% are new additions with less than three years experience. Geographically, the sample represents concentration of Halal MSMEs in Indonesia where 58% are from Java as economic center, 22% from Sumatera and 20% in other islands providing variation in regions on the dataset.

Table 1. Demographic and business profile of respondents

Characteristic	Category	Frequency	Percentage
Gender	Male	156	52.00%
	Female	144	48.00%
Business scale	Micro (1-10 employees)	195	65.00%
	Small (11-50 employees)	75	25.00%



Business age	Medium (51-250 employees)	30	10.00%
	< 3 years	45	15.00%
	3-5 years	105	35.00%
	> 5 years	150	50.00%
Geographic location	Java	174	58.00%
	Sumatera	66	22.00%
	Other islands	60	20.00%

Author finding 2025

4.2 Validity and reliability testing

The constructs display moderate to strong psychometric properties in the measurement model, which is an important finding. All items have factor loadings above the recommended level of 0.70. These loadings range from 0.785 to 0.845. This suggests that the indicator reliability and convergent validity are good. Cronbach's alpha estimates for all constructs lie between 0.868 and 0.892, which is well above the cut-off threshold of 0.70, indicating very good internal consistency reliability. The constructs are also reliable, as evidenced by composite reliability values ranging from 0.881 to 0.904. The AVE of all constructs is higher than 0.65, which is greater than the minimum criterion value ($AVE > 0.50$), due to good convergence validity. The measurement model has been shown to be reliable and valid for testing the structural relationships of this study, as these results demonstrate.

Table 2. Construct validity and reliability analysis

Construct	Item	Factor loading	CA	CR	AVE
Entrepreneurial competence	EC1	0.812	0.891	0.902	0.701
	EC2	0.785			
	EC3	0.823			
	EC4	0.794			
Networking	NW1	0.801	0.876	0.889	0.667
	NW2	0.832			
	NW3	0.815			
	NW4	0.798			
Marketing capability	MC1	0.821	0.885	0.894	0.679
	MC2	0.834			
	MC3	0.806			
	MC4	0.819			
Innovation adoption	IA1	0.789	0.868	0.881	0.651
	IA2	0.823			
	IA3	0.815			
	IA4	0.796			
MSME growth	GR1	0.831	0.892	0.904	0.704
	GR2	0.845			
	GR3	0.826			
	GR4	0.842			

Author finding 2025

4.3 Descriptive statistics and correlation matrix

The results of the descriptive statistics show that, overall, respondents reported positive perceptions of all constructs, with mean values ranging from 3.89 to 4.12 on a 5-point Likert scale. The mean value for the MSME growth is highest at 4.08, followed by entrepreneurial competence at 4.12 and marketing capability at 4.05. In the correlation matrix, all variables 2-, 3+, ?, and ? have a strong positive correlation at the 0.01 level. Adoption of innovation shows strong correlations with MSME growth ($r = 0.576$) and marketing capability ($r = 0.491$),

while entrepreneurial competence shows the strongest correlation with MSME growth ($r = 0.512$). All VIFs are less than 0.70, indicating that multicollinearity is not a concern for further regression analysis.

Table 3 Descriptive statistics and Pearson correlation coefficients

Variable	Mean	SD	1	2	3	4	5
Entrepreneurial competence	4.12	0.56	1				
Networking	3.89	0.62	.412**	1			
Marketing capability	4.05	0.58	.378**	.445**	1		
Innovation adoption	3.95	0.61	.467**	.423**	.491**	1	
MSME growth	4.08	0.59	.512**	.398**	.534**	.576**	1

Author finding 2025

4.4 Assumption testing results

The assumption checks show that all the statistical conditions are satisfied for running the regression. Tolerances of all predictors are between 0.598 and 0.723, which is for higher than the threshold values critical at 0.10; VIF's of all predictors vary between 1.383 and 1.672, far below the conservative criterion value (<5) suggesting no multicollinearity to be worrisome. Normality diagnostics is in the acceptable range for skewness (-0.456 to -0.512) and kurtosis (0.189 to 0.312), with all scores within the desired limits (± 2 for normal distribution, ± 7 for kurtosis), ie, normal distributed data was obtained. Such findings also support the induction of parametric statistical testing.

Table 4 Multicollinearity and normality diagnostics

Variable	Tolerance	VIF	Skewness	Kurtosis
Entrepreneurial competence	0.723	1.383	-0.456	0.234
Networking	0.689	1.451	-0.512	0.189
Marketing capability	0.654	1.529	-0.389	0.312
Innovation adoption	0.598	1.672	-0.423	0.267

Author finding 2025

4.5 Direct effects analysis

The model of explaining growth in MSME is highly effective institutional, as shown by the adjusted R square 63.4% ($R^2 = 0.634$). All the four independent variables have positive significant effects on MSME growth. Marketing capability remains the most powerful predictor ($\beta = 0.387$, $p < 0.001$), entrepreneurship skill comes the second best ($\beta = 0.312$, $p < 0.001$) followed by networking influence ($\beta = 0.234$, $p = 0.001$) and gender ($\beta = -3.5\%$, $p = -2.9\%$, $t(214) = -2$). The model as a whole is significant ($F = 48.923$, $p < 0.001$), indicating that all factors jointly explain variations in Halal MSME growth significantly. These findings confirm hypotheses H1 to H4 and the relevance of all direct relationships proposed.

Table 5 Multiple regression analysis for direct effects on MSME growth

Predictor	β	t-value	p-value	Hypothesis	Result
Entrepreneurial competence	0.312	4.823	0	H1	Supported
Networking	0.234	3.456	0.001	H2	Supported
Gender	0.145	2.189	0.029	H3	Supported
Marketing capability	0.387	5.912	0	H4	Supported

* $R^2 = 0.634$, Adjusted $R^2 = 0.621$, $F = 48.923$, $p < 0.001$ *

Author finding 2025

4.6 Antecedents of innovation adoption

The regression model for innovation adoption antecedents provides a strong fit explaining 58.7% of the variance in innovation adoption. Marketing ability has the greatest impact ($b = 0.423$; $P < 0.001$), followed by



entrepreneurial competence ($b = 0.289$; $P < 0.001$), networking ($b = 0.256$; $P < 0.001$) and finally gender ($b = -0.134$, $p = 0.042$). The overall model is statistically significantly ($F = 42.156$, $p < 0.001$) so that these variables as a whole are the determinant of innovation adoption behavior among Halal MSMEs. These results have validated hypotheses H5 through H8 which show that entrepreneurial competence, networking, gender and marketing capability are important determinants to drive innovation adoption on the context of Halal business.

Table 6 Regression analysis for innovation adoption determinants

Predictor	β	t-value	p-value	Hypothesis	Result
Entrepreneurial competence	0.289	4.123	0	H5	Supported
Networking	0.256	3.678	0	H6	Supported
Gender	0.134	2.045	0.042	H7	Supported
Marketing capability	0.423	5.234	0	H8	Supported

* $R^2 = 0.587$, Adjusted $R^2 = 0.574$, $F = 42.156$, $p < 0.001$ *

Author finding 2025

4.7 Innovation adoption on MSME growth

The uncontrolled regression analysis shows a robust, highly significant positive association between innovation uptake and MSME expansion ($\beta = 0.543$; $p < 0.001$). The model accounts for 58.9% of the variance in growth of MSME, with only innovation adoption emerged as a significant predictor. The high t-value (8.912) and statistical significance level ($p < 0.001$) confirm the reliability of this relationship. This result provides strong support for H9 (innovation adoption is an important determinant of growth in Halal MSMEs). The large magnitude effect size indicates that innovation as a strategic need is key for business growth and competitiveness within the Halal sector.

Table 7 Regression analysis for innovation adoption on MSME growth

Predictor	β	t-value	p-value	Hypothesis	Result
Innovation adoption	0.543	8.912	0	H9	Supported

* $R^2 = 0.589$, Adjusted $R^2 = 0.587$, $F = 79.423$, $p < 0.001$ *

Author finding 2025

4.8 Mediation analysis results

Mediation analysis shows that innovation adoption is a partial mediator in all proposed relationships. The largest mediating effect is the marketing capability to MSME Growth path (indirect effects = 0.229), and then followed by entrepreneurial competence (indirect effects = 0.157), networking (indirect effects = 0.139) and gender (indirect effect = 0.073). All bootstraps for the indirect effects do not include zero, supporting that these results are significant at $p < 0.05$. The pattern of results reflects partial mediation, as all direct and indirect effects are significant throughout. These results fully corroborate hypotheses H10_–_H13, and confirm innovation adoption as an important mechanism by which entrepreneurial drivers affect Halal MSME growth.

Table 8 Mediation analysis using process macro

Mediation path	Direct effect	Indirect effect	Total effect	LLCI	ULCI	Result
EC → IA → growth	0.312*	0.157*	0.469*	0.089	0.225	Sig.
NW → IA → growth	0.234*	0.139*	0.373*	0.078	0.201	Sig.
Gender → IA → growth	0.145*	0.073*	0.218*	0.035	0.112	Sig.
MC → IA → growth	0.387*	0.229*	0.616*	0.156	0.302	Sig.

Author finding 2025

4.9 Discussion

This research provides strong evidence that the growth of Halal Micro, Small and Medium Enterprises (MSMEs) is not simply driven by growth factors, but by a system phenomenon and cluster, as defined by



Buzzacchi. This cluster involves the intersection of entrepreneurial competencies, strategic networks and marketing capabilities, as well as gender dynamics and the adoption of innovation as a catalytic mechanism. The results shed light on the complex mechanisms by which such resources are transformed into business growth, providing a more detailed picture of the drivers of the halal economy.

The finding that marketing capability is the most powerful direct predictor of both innovation adoption and MSME growth affirms a paradigm shift within the halal sector. It suggests that merely providing Sharia-compliant goods is insufficient for success, which now hinges on articulating value, creating a brand, and negotiating digital distribution. This finding aligns with the current view that the halal market has evolved from a narrow, compliance-driven niche into a dynamic global industry with the potential to become highly competitive, as evidenced by marketing intelligence (El-Gohary et al., 2023). The ability to create and narrate stories of Halal authenticity, use digital channels to scale up globally, and implement targeted pricing and distribution strategies seems to be a more proximate driver of growth than mere entrepreneurial competence. The pace of industrial evolution impact is also in line with the Resource-Based View (RBV) rationale. This is because being able to respond quickly to changing environments (marketing) can provide quicker pay-off than a relatively stable internal endowment (competence). This is at least within fast-evolving industries (Vorhies & Morgan, 2005).

Moreover, entrepreneurial competence is given less importance than marketing capability, which is seen as a core need for the development of Halal MSMEs. Entrepreneurs who can strategise and are financially and opportunity literate are the strategic drivers and stabilisers of any entity's operations if it desires sustained growth. This evidence corroborates the findings of Kiyabo and Isaga (2020), who indicated that entrepreneurial competence is a key success factor for SMEs in emerging economies. For Halal MSMEs, this competency also encompasses an in-depth understanding of Sharia principles and their implications for business transactions, enabling entrepreneurs to balance religious and commercial objectives effectively. This capacity enables them to do more than just dream of growth; it allows them to build the organisational structure needed to deliver it.

The analysis also showed that networking is an important means of acquiring resources and knowledge, substantially affecting both innovation processes and growth. In a sector with distinct certification demands, networks are instrumental. They also have rapidly changing global directives. These directives are new-fangled. Networks are also important for reaching dynamic information. This information is on changes in regulations or emerging markets and partners. These are in the Halal ecosystem. This finding is consistent with that of Hadjielias et al. (2022), who focused on networks as a means for SMEs to overcome resource scarcity. Close collaboration with certification agencies, industry groups, and successful entrepreneurs can shorten the learning curve for Halal MSMEs and reduce the risks associated with innovating and expanding into new markets. Networking thus serves as a strategic instrument for acquiring resources that supplements the organisation's internal capabilities.

The important, albeit small, gender effect adds a vital component to the debate. The findings reveal that gender affects both the likelihood of innovating and the growth path, although not to the same extent as organisational capability. This implies that, although female entrepreneurs in the halal field may experience unique situations or perspectives, their success is primarily influenced by the same generic core competencies (marketing, competency, and networking) as male entrepreneurs. This nuanced finding challenges the binary narrative and aligns with the feminist theory of entrepreneurship, which suggests that the impact of gender is likely to be influenced by the availability of resources and strategic decisions rather than being a direct determinant of performance (Hechavarría et al., 2023). The ethical and community-based nature of the halal sector may provide a context in which relationship- and ethics-based management styles, favoured by many women entrepreneurs, can be especially beneficial.

The study's key finding is the strong recommendation of innovation adoption as a key intervening factor, which is supported by further evidence. The strong indirect effects through all paths show that the general value of entrepreneurial skill, networking and marketing ability depends indirectly on innovation. This finding strongly aligns with the fundamental principles of the Resource-Based View (RBV) and Diffusion of Innovations theory, namely that resources must be reconfigured into new products, processes, and business models in a dynamic manner to generate competitive advantage (Teece et al., 1997; Rogers, 2003). Talented entrepreneurs and well-connected firms mostly achieve higher growth by being better at introducing new technologies, releasing new product varieties, and adopting new management strategies. The marketing capability showed the strongest mediation effect, indicating that a market-oriented culture drives growth directly and offers substantial incentives and motivation to innovate, with the aim of influencing and shaping customer needs.

The partial nature of all mediating effects is just as informative. If anything, it is a reminder that adopting innovation is a process, not a one-off event. Entrepreneurial ability, for example, should enable firms to grow by providing goods efficiently and managing risks better, without necessarily generating new ideas. Similarly, networking can help businesses to grow, even if there are no cutting-edge projects in progress. This complexity highlights the multidimensional nature of small business expansion, with multiple causal pathways occurring simultaneously.

It is clear from the discussion that the development of Halal MSMEs is generated by a dynamic combination of internal and external capabilities, environmental contingencies, and innovation, which manifest themselves in both social learning absorptive capacity and social innovation. The combined model's strong predictive value indicates that focusing on just one important factor, whether it's training entrepreneurs, giving them networking opportunities, or teaching marketing skills, might not be the best approach. Instead, what is needed is an ecosystem-wide approach that concurrently develops entrepreneurial capability, extends strategic networks, enhances marketing sophistication, and nurtures a culture of innovation, enabling Halal MSMEs, including those led by women, to reach their full potential in this rapidly growing landscape.

5. Conclusion

This research clearly showed that growth can be achieved by Halal MSMEs through a combined model; entrepreneurial competency, networking capability and marketing capability significantly improve the business performance directly but also simultaneously works through the mediating significant path of innovation adoption. The results indicate that the marketing capability is the most dominant factor in affecting both of innovation and growth, emphasizing the pivotal role that market orientation takes in this competitive field Halal. The secondary role of gender underscores the intricate relationship between entrepreneur identity and business performance, proposing that gender affects growth paths but is mediated by strategic capabilities and innovation practices. The organized partial mediation of adoption for all the relationships gives a strong indication that resources and networks are enacted to reach maximum effectiveness with innovative practices or offerings. These findings provide important theoretical insights through the validation of a comprehensive model that integrates Resource-Based View, Social Network and Diffusion of Innovations theories in a Halal context. Practically, academicians as well as policy makers, business development agencies and entrepreneurs may benefit from this study particularly in the pursuit of understanding that holistic interventions to strengthening core competencies while expanding strategic networks enforced with marketing sophistication and systemically nurtured innovation culture opens up sustainable growth opportunities for Halal MSMEs within global market.

Limitations

However, despite its strengths, this study has limitations that should be taken into account. Although the cross-sectional design provides a useful overview of the connections between variables, it does not enable us to

draw definitive conclusions about the causal nature of these relationships. Rather, longitudinal studies are required to examine how these links evolve over time. Additionally, the use of self-reported responses collected from a single respondent per organisation may introduce common method bias, and future research could consider using objective performance measures or multiple informants. The regional clustering of the sample within Indonesia, which focuses on a primary halal market, challenges the extent to which we can generalise about the findings in relation to other cultural and regulatory environments, and highlights the need for comparative cross-national projects. Lastly, while the model captures the main drivers, it does not include all potential impacting factors, e.g. access to finance, regulatory environments, or certain digital infrastructure, which could be incorporated into more advanced models in future studies.

CRediT Author Statement

Haifa Zulfatul Ihsan: Conceptualization, Methodology, Investigation, Data Curation, Formal analysis, Writing Original Draft, Visualization. Yunaita Rahmawati: Supervision, Validation, Resources, Writing - Review & Editing, Project administration.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author, Haifa Zulfatul Ihsan, upon reasonable request.

AI Ethical Statement

No artificial intelligence (AI) tools or technologies were used in the preparation, analysis, or writing of this manuscript. All content represents the original work and intellectual contribution of the human authors.

Appendix Additional Data Table

Appendix A. Sample Stratification Framework

Stratification	Category	Proportion	Sample	Technique	Justification
Primary Stratum: Business Scale	Micro Enterprises (1-10 employees)	65%	195	Random Sampling from Business Registry	Represents the dominant segment of Halal MSME ecosystem
	Small Enterprises (11-50 employees)	25%	75	Random Sampling from Business Registry	Captures growing businesses with more formal structures
	Medium Enterprises	10%	30	Purposive Sampling	Ensures representation of

Secondary Stratum: Entrepreneur Gender	(51-250 employees)			Stratified Random Sampling	scaled Halal enterprises Ensures adequate representation of female entrepreneurs for gender analysis Provides comparative baseline for gender-based analysis
	Female Entrepreneurs	48%	144		
Tertiary Stratum: Geographic Distribution	Male Entrepreneurs	52%	156	Stratified Random Sampling	Main economic center with highest Halal MSME concentration
	Java Region	58%	174	Proportional Allocation	Significant Halal economic region
	Sumatera Region	22%	66	Proportional Allocation	Ensures geographical diversity and representation
	Other Islands	20%	60	Proportional Allocation	

Appendix B. construct measurement variable

Construct	Code	Measurement Items	Scale	Source
Entrepreneurial Competence	EC1	I can identify new business opportunities in the Halal market faster than my competitors	5-point Likert	[Kiyabo & Isaga, 2020; Entrepreneurship Theory and Practice]
	EC2	I can develop effective strategic plans for my Halal business	5-point Likert	[Man et al., 2002; Journal of Business Venturing]
	EC3	I can effectively manage financial resources for business growth	5-point Likert	[Sanchez, 2013; Journal of Small Business Management]
	EC4	I can build and maintain strong relationships with stakeholders in the Halal industry	5-point Likert	[Chandler & Jansen, 1992; Journal of Business Venturing]
Networking	NW1	I actively participate in Halal business associations and industry events	5-point Likert	[Watson, 2007; Journal of Small Business Management]
	NW2	My network provides me with valuable information about Halal market trends	5-point Likert	[Sarkar et al., 2020; Journal of Business Research]
	NW3	I have strong connections with Halal certification bodies and authorities	5-point Likert	[Hadjielias et al., 2022; International Small Business Journal]
	NW4	I maintain regular contact with successful entrepreneurs in the Halal industry	5-point Likert	[Semrau & Werner, 2014; Journal of Small Business Management]
Gender	GEN 1	The entrepreneur's biological sex (Male/Female)	Nominal	[Klyver & Nielsen, 2021; Entrepreneurship Theory and Practice]
	GEN 2	Gender identity (Masculine/Feminine/Other)	Nominal	[Hechavarría et al., 2023; Journal of Business Venturing]



Construct	Code	Measurement Items	Scale	Source
Marketing Capability	MC1	My business effectively uses digital marketing for Halal products	5-point Likert	[Ngo & O' Cass, 2012; Industrial Marketing Management]
	MC2	My business has strong capability in Halal brand building	5-point Likert	[Vorhies & Morgan, 2005; Journal of Marketing]
	MC3	My business effectively manages distribution channels for Halal products	5-point Likert	[Theodosiou et al., 2012; Journal of the Academy of Marketing Science]
	MC4	My business can set optimal prices for Halal products	5-point Likert	[Morgan et al., 2009; Journal of International Marketing]
Innovation Adoption	IA1	My business frequently adopts new Halal production technologies	5-point Likert	[Damanpour & Schneider, 2006; Journal of Management Studies]
	IA2	My business actively introduces new Halal product variations	5-point Likert	[Hult et al., 2004; Journal of Marketing]
	IA3	My business quickly adopts new Halal certification standards	5-point Likert	[Rogers, 2003; Diffusion of Innovations Theory]
	IA4	My business implements new digital marketing innovations	5-point Likert	[Talukder et al., 2014; Technovation]
MSME Growth	GR1	Sales growth rate compared to competitors in the last 3 years	5-point Likert	[Wijewardena & Tibbits, 1999; Entrepreneurship Theory and Practice]
	GR2	Market share growth in the Halal industry	5-point Likert	[Gerschewski et al., 2015; Journal of World Business]
	GR3	Profitability growth compared to industry average	5-point Likert	[Stam et al., 2014; Strategic Entrepreneurship Journal]
	GR4	Employment growth rate in the last 3 years	5-point Likert	[Davidsson et al., 2022; Journal of Business Venturing]

Measurement Scale Specification:

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