The Influence of Digital Islamic Marketing Capability on Eco-Innovation and Competitive Advantage of Halal MSMEs in Semarang City: The Role of Halal Supply Chain Integration Mediation

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Abstract

This study aims to analyze the influence of Digital Islamic Marketing Capability on Eco-Innovation and Competitive Advantage in halal MSMEs in Semarang City with Halal Supply Chain Integration as a mediation variable. This study is built on the foundation of Resource-Based View and Dynamic Capability Theory, which places the organization's internal capabilities as a strategic resource to produce sustainable performance and competitive advantage. The research method used is quantitative with an explanatory research approach through a survey of 150 certified halal MSME actors in the Muslim food, beverage, and fashion sector in Semarang City. The data was analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS) to test the direct and indirect relationships between variables. The results of the study show that Digital Islamic Marketing Capability has a positive effect on Halal Supply Chain Integration, Eco-Innovation, and Competitive Advantage. In addition, Halal Supply Chain Integration plays an important role in strengthening the influence of Digital Islamic Marketing Capability on Eco-Innovation and Competitive Advantage. This research makes a theoretical contribution to the development of digital marketing based on Islamic values as well as a practical contribution to strengthening halal MSMEs in supporting the green economy and sustainable competitiveness.

Keywords: *Digital Islamic Marketing Capability; Halal Supply Chain Integration; Eco-Innovation; Competitive Advantage; Halal MSMEs.*

1. Introduction

The development of the digital economy has changed the way businesses build relationships with consumers, manage the distribution of value, and create competitive advantages. For halal MSMEs, this change not only requires the ability to utilize digital technology, but also sensitivity to Islamic principles that are the basis of market trust. In the context of increasingly dynamic competition, digital marketing that is in line with halal values and Islamic ethics is one of the strategic factors to expand market reach while maintaining business credibility(Hakim & Hafeez, 2025).

On the other hand, sustainability demands encourage MSME players to not only pursue sales growth, but also pay attention to the environmental impact of their business activities. The concept of eco-innovation is becoming increasingly relevant because innovation is no longer measured only in terms of economic aspects, but also in terms of its contribution to waste reduction, resource efficiency, and more environmentally friendly business practices. In halal MSMEs, eco-innovation has an additional dimension because it must remain consistent with sharia compliance and halal products(Yusof et al., 2026).

The main problem that arises is the limited ability of some halal MSMEs to integrate digital marketing, halal supply chain processes, and green innovation simultaneously. Many business actors have used social media or marketplaces, but have not used them as part of strategic capabilities that are integrated with business operations. In fact, the latest literature shows that digital capabilities, halal orientation, and supply chain integration play an important role in building long-term business sustainability. Therefore, this research is important to explain how Digital Islamic Marketing Capability can encourage eco-innovation and competitive advantage, both directly and through Halal Supply Chain Integration (Atikah Candraningtyas & Rahmawati, 2025).

Digital capabilities are often proven to have an effect on marketing performance(Jaya et al., 2025), but it's not always clear whether that influence is strong enough to create a sustained competitive

advantage. On the other hand, halal supply chains are often positioned as a compliance and transparency issue, whereas in a more modern approach it can also be a source of innovation and market differentiation (Yusof et al., 2026). Therefore, this research is important to prove that digital marketing based on Islamic values does not stand alone, but works through the integration of halal supply chains to produce eco-innovation and competitive advantage.

Previous studies have shown that digital capabilities and Islamic marketing orientation affect the marketing performance and purchasing decisions of Muslim consumers (Hakim & Hafeez, 2025). However, these studies still place digital marketing more as a promotional tool, rather than as a strategic capability that can form a sustainable competitive advantage. In addition, research on halal supply chains more often emphasizes compliance, transparency, and operational efficiency, while its role as a mediating mechanism in the relationship between digital Islamic marketing capability, eco-innovation, and competitive advantage is rarely tested. Thus, there are theoretical, empirical, and contextual gaps that need to be answered through research on halal MSMEs in Semarang City.

This research seeks to provide integration between the perspective of Resource-Based View and Dynamic Capability Theory in explaining the strengthening of the competitiveness of halal MSMEs through an integrated halal supply chain mechanism. Some previous research has placed digital capabilities as an internal factor that affects business performance, but has not specifically tested how these capabilities work through the integration of the halal supply chain as a mediator. Recent literature shows that halal supply chain transformation is increasingly related to digital technology, sustainability, and transparency, so that an approach that combines marketing, operational, and sustainability dimensions is becoming increasingly relevant(Saifuddin & Setiawan, 2025).

In addition, there is an empirical controversy about the extent to which digital capabilities are able to produce a sustainable competitive advantage in MSMEs. Some studies show that digital capabilities improve marketing performance and market access, but have not been consistent in explaining the creation of long-term differentiation. Similarly, halal supply chains are often seen as an instrument of compliance, even though recent studies show its potential in driving transparency, efficiency, and sustainability-based innovation(Nugroho et al., 2024). Thus, this research is here to bridge these differences in focus through more integrative empirical testing.

The novelty of this research lies in the development of a model that connects Digital Islamic Marketing Capability, Halal Supply Chain Integration, Eco-Innovation, and Competitive Advantage in one analytical framework based on halal MSMEs in Semarang City. Another novelty is the use of Halal Supply Chain Integration not only as an operational variable, but as a strategic mechanism that channels the impact of digital marketing capabilities to green innovation and competitive advantage(Sari et al., 2026). Thus, this research not only expands the study of sharia digital marketing, but also offers a conceptual contribution in understanding how the integration of Islamic values, digital technology, and sustainability can shape the competitiveness of halal MSMEs more comprehensively.

The city of Semarang is a relevant area to study this phenomenon because it has a growing MSME base and great potential in strengthening the halal ecosystem. This study seeks to answer the main question: whether Digital Islamic Marketing Capability has an effect on Eco-Innovation and Competitive Advantage, and whether this influence is strengthened through Halal Supply Chain Integration. Thus, this research is expected to be able to provide theoretical explanations as well as practical recommendations for the development of digital-based halal MSMEs.

2. Literature Review

2.1. Digital Islamic Marketing Capability

Digital Islamic Marketing Capability refers to the ability of organizations to design, manage, and optimize digital marketing activities in accordance with Islamic principles. These capabilities

include the use of social media, marketplaces, digital content, customer communication, and promotional strategies that emphasize honesty, transparency, and halal values. In practice, this capability is not only about the use of technology, but also the ability to integrate technology with sharia values to create consumer trust and loyalty (Suleiman et al., 2025).

Digital Islamic Marketing Capability is a strategic capability that allows halal MSMEs to utilize digital technology effectively while maintaining conformity with Islamic values. In the framework of the Resource-Based View, this capability is seen as a valuable internal resource because it is able to build consumer trust, expand market reach, and create business differentiation. Meanwhile, from the perspective of Dynamic Capability Theory, Islamic-based digital capabilities are an instrument for organizational adaptation to respond to changes in consumer behavior, digital competition, and sustainability demands more quickly and flexibly(Sari et al., 2026).

Digital Islamic Marketing Capability not only functions at the level of marketing communication, but also influences the way organizations build internal and external coordination. When halal MSMEs have good digital capabilities, they tend to be better able to manage relationships with suppliers, maintain clarity of product information, and strengthen integration between processes in the halal supply chain(Yusof et al., 2026). This condition encourages the formation of Halal Supply Chain Integration, which is an integration that ensures the flow of materials, production processes, distribution, and product delivery in accordance with halal and transparent principles.

2.2. Halal Supply Chain Integration

Halal Supply Chain Integration is a coordination process that unites supplier activities, production, storage, distribution, and marketing so that all business flows remain within the halal corridor. This integration is important because the halalness of a product is not only determined by the raw materials, but also by the way the product is processed, stored, shipped, and delivered to consumers. Recent studies show that transparency, sustainability, and regulatory compliance are the main foundations for strengthening the modern halal supply chain (Mohamad Karudin et al., 2024).

2.3. Eco-Innovation

Eco-Innovation is an innovation that generates economic benefits while reducing environmental impact. In halal MSMEs, eco-innovation can take the form of the use of environmentally friendly packaging, energy efficiency, better waste management, or the use of more sustainable raw materials. This type of innovation is very relevant because consumers are now increasingly judging businesses not only by the products produced, but also by their social and environmental responsibility (Showole et al., 2025).

2.4. Competitive Advantage

Competitive Advantage is a condition when a company is able to create higher value than its competitors through differentiation, efficiency, or a combination of the two. In the halal MSME sector, competitive advantages can be formed through consumer trust, halal consistency, green innovation, and strong digital capabilities. The literature shows that digital marketing capabilities and good strategic orientation contribute to improving marketing performance and business competitiveness (Jaya et al., 2025).

2.5. Resource-Based View

The Resource-Based View explains that competitive advantage comes from the organization's internal resources that are valuable, scarce, difficult to replicate, and difficult to replace(Barney et al., 2021). In this study, Digital Islamic Marketing Capability is positioned as a strategic resource that can produce added value for halal MSMEs(Maket & Korir, 2017). If these capabilities are managed well, organizations will have a stronger position in the face of market competition(Utomo et al., 2024).

2.6. Dynamic Capability Theory

Dynamic Capability Theory emphasizes an organization's ability to sense changing environments, seize opportunities, and transform resources to stay relevant (Teece et al., 1997). In the context of digitalization and sustainability, this theory is very appropriate because MSMEs must continue to adapt their marketing and operational strategies to changes in the market, technology, and consumer expectations. Halal Supply Chain Integration can be understood as a form of dynamic capabilities that connect marketing, operations, and innovation adaptively (Yusof et al., 2026).

2.7. *Digital Islamic Marketing Capability* (DIMC) and *Halal Supply Chain Integration* (HSCI)

The relationship between *Digital Islamic Marketing Capability* (DIMC) and *Halal Supply Chain Integration* (HSCI) lies in how digital marketing capabilities based on Islamic principles strengthen transparency, trust, and sustainability of the halal supply chain. DIMC acts as a link between sharia values in marketing and the integration of digital technology in the halal supply chain, thereby increasing the competitiveness and trust of Muslim consumers. Digital Islamic Marketing Capability (DIMC); refers to the company's ability to use digital technology (social media, e-commerce, halal fintech) with sharia principles and focuses on *halal perceived value*, communication ethics, and sharia integrity in product marketing (Fasa et al., 2022). Halal Supply Chain Integration (HSCI); ensuring halal products from upstream to downstream (procurement, production, distribution, logistics) and using digital technologies such as blockchain, IoT, RFID, halal traceability systems to ensure authenticity and halal compliance throughout the supply chain(Hasanah & Fahruddin, 2021). DIMC strengthens *customer trust* through ethical and transparent communication, while HSCI provides *traceability* and halal assurance that supports digital marketing claims. This synergy creates *sustainable competitiveness* for halal companies.

Digital Islamic Marketing Capability is not only about promotion, but also an *enabler* that strengthens the integration of the halal supply chain. With the synergy between the two, halal companies can build trust, transparency, and sustainable competitiveness in the global market(Qizwini & Fitriana Kaban, 2024). Thus the first hypothesis that can be proposed is:

H1: Digital Islamic Marketing Capability has a positive and significant effect on Halal Supply Chain Integration.

2.8. Halal Supply Chain (HSCI) and Eco-Innovation

Halal Supply Chain Integration (HSCI) is closely related to Eco-Innovation as both emphasize sustainability, efficiency, and added value based on sharia principles. HSCI encourages the application of green technology, digitalization, and traceability systems that strengthen environmentally friendly innovations in the halal supply chain. Halal Supply Chain Integration (HSCI): ensuring that all supply chain processes (procurement, production, distribution, logistics) are halal, transparent, and integrated while Eco-Innovation: innovation oriented towards reducing environmental impact, energy efficiency, and business sustainability.

Blockchain, IoT, and AI in HSCI improve *traceability* and reduce fraud and also reduce waste, improve energy efficiency, and strengthen *eco-innovation(Khan et al., 2025)*. The Maqashid Shariah *principles* in HSCI encourage ethical and sustainable business practices and are in line with the goal of eco-innovation: creating economic value while protecting the environment(Sari et al., 2026). Systematic studies show that technology integration in HSCI increases traceability accuracy by 67% and increases sustainability by 90% for halal MSMEs which directly strengthens the eco-innovation dimension in the supply chain (Khan et al., 2025).

HSCI's relationship with Eco-Innovation is **synergistic**: the integration of technology-based halal supply chain not only ensures sharia compliance, but also strengthens environmentally friendly innovations. With regulatory support and the adoption of digital technology, HSCI can become a major catalyst for eco-innovation in the global halal industry. Thus the hypotheses that can be proposed are:

H2: Halal Supply Chain Integration has a positive and significant effect on Eco-Innovation

2.9. Halal Supply Chain Integration and Competitive Advantage

Halal Supply Chain (HSCI) integration directly contributes to competitive *advantage* as it increases consumer confidence, operational efficiency, and sustainability reputation. Recent studies show that the application of digital technologies (AI, blockchain, IoT) in HSCI strengthens traceability, reduces fraud, and creates added value that is difficult for competitors to replicate. HSCI ensures sharia compliance and supply chain transparency which has the potential to increase *consumer trust* and open access to the global halal market (Khan et al., 2025). Digitalization-based HSCI supports *eco-innovation* and sustainability. Companies that integrate halal principles and green technology gain a reputation as *responsible brands*, which is a source of *competitive advantage(Sari et al., 2026)*.

HSCI is not only about sharia compliance, but also business strategies to create *competitive advantage*. By integrating digital technology, halal companies can increase efficiency, build consumer trust, and strengthen global reputation. Thus the hypotheses that can be proposed are:

H3: Halal Supply Chain Integration has a positive and significant effect on Competitive Advantage.

2.10. Digital Islamic Marketing Capability and Eco-Innovation.

Digital Islamic Marketing Capability (DIMC) is closely related to *eco-innovation* because digital marketing capabilities based on Islamic values encourage the adoption of green technology, transparency, and sustainability in business strategies(Alimusa et al., 2025). By integrating sharia ethics into digital marketing practices, the company not only builds the trust of Muslim consumers, but also creates eco-friendly innovations that strengthen competitiveness(Andani & Agustina, 2025). DIMC emphasizes the principles *of maslahah* (benefit), honesty, and social responsibility, in line with the goals of eco-innovation: reducing environmental impact and creating long-term sustainability. Islamic-based digital marketing reduces reliance on print media, physical distribution, and energy-intensive promotional activities. This supports eco-innovation through reduced carbon footprint and resource efficiency. DIMC allows the company to build an image as a *responsible Islamic brand*. Muslim consumers increasingly choose halal products that are also environmentally friendly, so eco-innovation is a market differentiation.

Digital Islamic Marketing Capability acts as a catalyst for eco-innovation by combining sharia values, digitalization, and sustainability. Companies that integrate DIMC not only strengthen the loyalty of Muslim consumers, but also create environmentally friendly innovations that are a source of *competitive advantage* in the global halal market. Thus the hypotheses that can be proposed are:

H4: Digital Islamic Marketing Capability has a positive and significant effect on Eco-Innovation.

2.11. Digital Islamic Marketing Capability and Competitive Advantage.

The Digital Islamic Marketing Capability (DIMC) has a strategic relationship with *competitive advantage* because it integrates sharia values with digital technology to create market differentiation, increase consumer trust, and strengthen brand reputation(Alimusa et al., 2025). DIMC enables companies to target the Muslim consumer segment with a sharia-compliant digital approach that creates *a unique value proposition* that is difficult for non-Islamic brands to replicate(Alimusa et al., 2025). The application of the principles of honesty, transparency, and *maslahah* in digital marketing increases *consumer trust* which is a source of *long-term competitive advantage* through brand loyalty(Andani & Agustina, 2025). DIMC reduces traditional promotional costs and leverages digital technology to reach global markets. This efficiency strengthens price competitiveness while increasing its reputation as a *responsible Islamic brand*.

Digital Islamic Marketing Capability is a source of competitive advantage because it combines sharia values, digitalization, and sustainability. Companies that adopt DIMC are able to build Islamic market differentiation, increase consumer confidence, and strengthen their competitive position in the global halal market. Thus the hypotheses that can be proposed are:

H5: Digital Islamic Marketing Capability berpengaruh positif terhadap Competitive Advantage.

From the variables of Digital Islamic Marketing Capability, Halal Supply Chain Integration Eco-Innovation dan Competitive Advantage**,** the basic conceptual model is proposed as follows:

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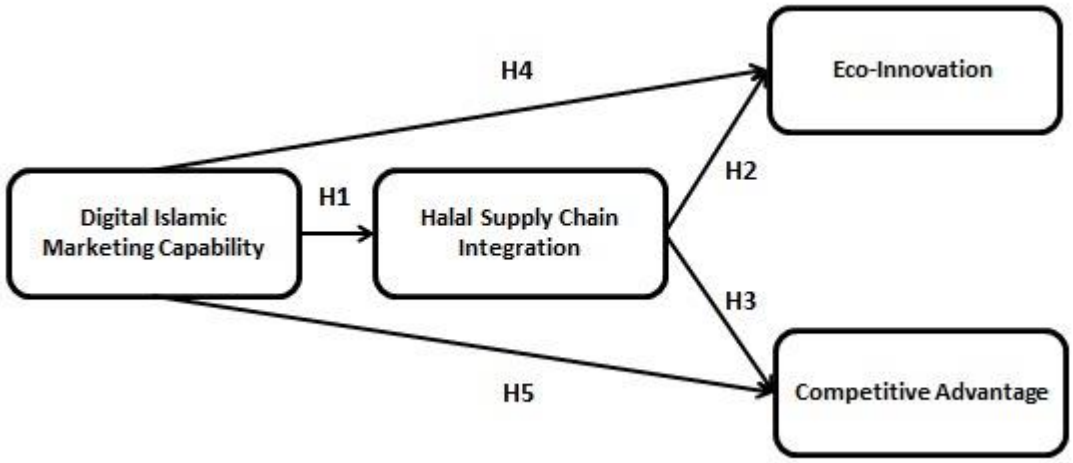


Figure 1. The basic conceptual model

3. Research design

This study uses a quantitative approach with an explanatory research design. This design was chosen because the purpose of the study was to test the causal relationship between variables and assess the mediating role of Halal Supply Chain Integration in the built model. The research population is certified halal MSMEs in Semarang City which are engaged in the Muslim food, beverage, and fashion sectors. The sample was determined using purposive sampling with the criteria that respondents are the owners, managers, or main managers who understand digital marketing activities, operational processes, and the business supply chain. The ideal sample count is 150 respondents, adequate for SEM-PLS analysis.

3.1. Variables and measurements

The independent variable in this study is Digital Islamic Marketing Capability. The mediation variable is Halal Supply Chain Integration, while the dependent variable is Eco-Innovation and Competitive Advantage. All variables were measured using a ten-point Likert scale instrument, ranging from strongly disagree to strongly agree. The indicators are compiled based on digital marketing literature, halal supply chain, green innovation, and competitive advantage as follows:

Table 1. Indicator Statement

No	Variable	Indicator	Source
1	Digital Islamic Marketing Capability	▪ Compliance with sharia principles in digital marketing content. ▪ The use of digital technology (social media, e-commerce, AI) for the Muslim market. ▪ Transparency and honesty in marketing communications. ▪ The ability to build an Islamic brand through digital platforms. ▪ Promotion cost efficiency with digitalization based on Islamic values.	(Alimusa et al., 2025)
2	Halal Supply Chain Integration	▪ Halal traceability from upstream to downstream. ▪ Integration of digital technologies	(Khan et al., 2025)

		(blockchain, IoT, RFID) in the supply chain. ▪ Efficiency of halal certification and regulatory compliance. ▪ Collaboration between supply chain actors (manufacturers, distributors, retailers). ▪ Operational sustainability in accordance with sharia and environmental principles.	
3	Eco-Innovation	▪ The use of environmentally friendly technology in production and distribution. ▪ Energy efficiency and reduction of carbon emissions. ▪ Circular economy practices (reduce, reuse, recycle). ▪ Green product development according to consumer needs. ▪ Integration of sustainability in business strategy.	(Carrillo-Hermosilla et al., 2010)
4	Competitive Advantage	▪ Differentiation of products/services based on Islamic values and sustainability. ▪ Operational cost efficiency through digitalization and supply chain integration. ▪ Consumer trust and loyalty as a long-term asset. ▪ Global brand reputation in the halal and green market. ▪ Higher financial performance and market growth than competitors	(Sari et al., 2026)

Source: Developed for this research (2026)

3.2. Data analysis techniques

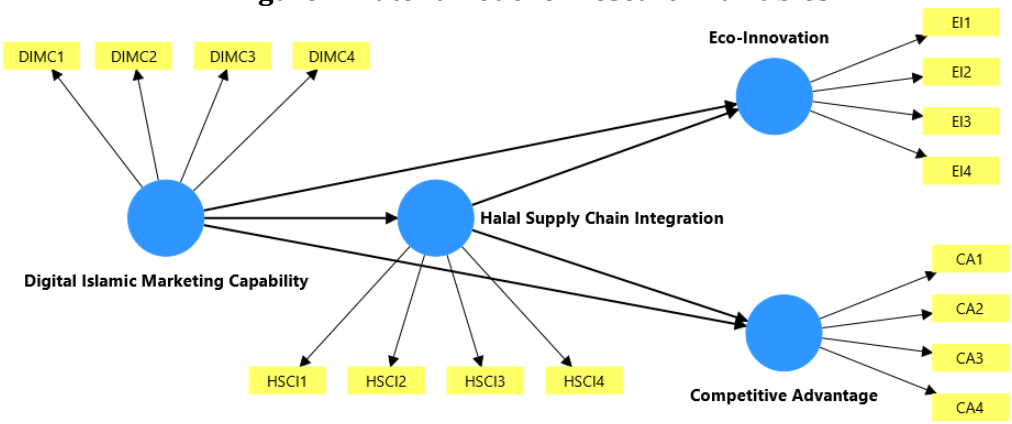
Data analysis was carried out using SEM-PLS because it is suitable for testing research models that are predictive, involve mediation relationships, and do not require strict normality assumptions. The test is carried out through two stages, namely the evaluation of the measurement model and the structural model. In the measurement model, validity and reliability were tested through outer loading, AVE, composite reliability, and Cronbach's alpha. In the structural model, the test was carried out through path coefficients, t-statistical values, p-values, and mediating effect analysis.R^2

4. Results and Discussion

4.1. Variable latent models

Variable latent models are used to test whether the abstract construct being studied is really valid, reliable, and has a significant relationship with other constructs as per the research hypothesis.

Figure 1: Latent Model of Research Variables



Source: Developed for this research (2026)

This model proves that digital marketing capabilities is an important factors that increase halal supply chain integration. Integration then acts as a link that strengthens the impact of these two factors, Eco- innovation and competitive advantage**.** In other words, a digital-savvy and company with integrated halal supply chain will results in better eco innovation and competitive advantage**.**

4.2. Outer Model (Testing Data Quality)

This study uses a latent variable approach with indicators tested through validity analysis. The value of *the loading factor* (or the correlation of the indicator to the construct) is the basis for determining whether an indicator is valid or not. Generally, an indicator is considered valid if it has a value of ≥ 0.70.

Table 2: Results of Outer Loading Convergent Validity Test Phase 1

Instrument	Competitive Advantage	Digital Islamic Marketing Capability	Eco-Innovation	Halal Supply Chain Integration	Remarks
CA1	0.779				Valid
CA2	0.758				Valid
CA3	0.667				Unvalid
CA4	0.771				Valid
DIMC1		0.771			Valid
DIMC2		0.694			Unvalid
DIMC3		0.665			Unvalid
DIMC4		0.654			Unvalid
EI1			0.663		Unvalid
EI2			0.634		Unvalid
EI3			0.772		Valid
EI4			0.680		Unvalid
HSCI1				0.647	Unvalid
HSCI2				0.756	Valid
HSCI3				0.659	Unvalid
HSCI4				0.816	Valid

Source: Processed data (2026)

Overall, the results of these tests show that some constructs already have valid and consistent indicators, while others still need improvement. Constructs such as Competitive Advantage and Halal Supply Chain Integration are relatively stronger, while Digital Islamic Marketing Capability and Eco-Innovation still require the development of instruments to better represent constructs

Table 3: Results of Outer Loading of Convergent Validity Test Phase 2

	Competitive Advantage	Digital Islamic Marketing Capability	Eco-Innovation	Halal Supply Chain Integration	Remarks
CA1	**0.778**				**Valid**
CA2	**0.816**				**Valid**
CA4	**0.830**				**Valid**
DIMC1		**1.000**			**Valid**
EI3			**1.000**		**Valid**
HSCI2				**0.845**	**Valid**
HSCI4				**0.923**	**Valid**

Source: Processed data (2026)

The results of the Outer Loading Convergent Validity Test Phase 2 showed that after the indicator was filtered in the previous stage, only the indicators that had high loading values were maintained. In the Competitive Advantage construct, the remaining three indicators (CA1, CA2, CA4) are all valid with loading values between 0.778 to 0.830. This indicates that the Competitive Advantage construct is now well and consistently measured.

For the Digital Islamic Marketing Capability construct, only the DIMC1 indicator survived with a perfect loading value of 1,000. Although the number of indicators is limited, the very high loading values suggest that they are very representative in explaining the construct.

In the Eco-Innovation construct, the EI3 indicator also has a loading value of 1,000, so it is the only valid and very strong indicator in representing the eco-innovation construct.

Meanwhile, in the Halal Supply Chain Integration construct, the remaining two indicators, namely HSCI2 and HSCI4, have high loading values of 0.845 and 0.923, respectively. This shows that halal supply chain integration can be well explained by these two indicators.

Overall, the results of this second phase test show that each construct now consists of only valid indicators and has high representation power. Thus, the research model becomes simpler yet still robust, as only indicators that are actually able to explain the constructs are maintained. These findings reinforce the validity of the convergence and provide a more solid basis for the next stage of analysis.

4.3. Discriminant Validity

Cross Loading (The statement value of the variable > the value of another variable). Cross loading shows how far each indicator (question item) loads on the construct that should be measured compared to other constructs.

Table 4: Results of Cross Loading of Determinant Validity Test

Instrument	Competitive Advantage	Digital Islamic Marketing Capability	Eco-Innovation	Halal Supply Chain Integration	Remarks
CA1	0.778	0.430	0.370	0.413	Valid

CA2	0.816	0.415	0.449	0.409	Valid
CA4	0.830	0.429	0.468	0.365	Valid
DIMC1	0.526	1.000	0.477	0.380	Valid
EI3	0.530	0.477	1.000	0.458	Valid
HSCI2	0.403	0.228	0.320	0.845	Valid
HSCI4	0.461	0.417	0.471	0.923	Valid

Source: Processed data (2026)

All indicators have the highest load on the construct that should be measured**.** There is no higher indicator of loading on other constructs. Thus, the results of the Cross Loading test show that the research instrument meets the criteria for validity discrimination**.**

4.4. Latent Variable Correlation (√AVE > Nilai latent variable)

Table 5: Latent Variable Correlation Value of AVE and Quadratic Root of AVE

Variable	Competitive Advantage	Digital Islamic Marketing Capability	Eco-Innovation	Halal Supply Chain Integration	AVE	√AVE	Remarks
Competitive Advantage	1.000	0.526	0.530	0.491	0.653	0,8081	Valid
Digital Islamic Marketing Capability	0.526	1.000	0.477	0.380	0.783	0,8849	Valid
Eco-Innovation	0.530	0.477	1.000	0.458	0.796	0,8922	Valid
Halal Supply Chain Integration	0.491	0.380	0.458	1.000	0.697	0,8349	Valid

Source: Processed data (2026)

4.5. Fornell-Larcker (√AVE > Nilai Fornell Larcker Variabel Lain)

Table 6: Table Fornell-Larcker

Variable	Competitive Advantage	Digital Islamic Marketing Capability	Eco-Innovation	Halal Supply Chain Integration	Remarks
Competitive Advantage	0.808				Valid
Digital Islamic Marketing Capability	0.526	1.000			Valid
Eco-Innovation	0.530	0.477	1.000		Valid
Halal Supply Chain Integration	0.491	0.380	0.458	0.885	Valid

Source: Processed data (2026)

All variables have a value of √AVE greater than the correlation between constructs. This shows that the research instrument meets the requirements of discriminant validity based

on the Fornell-Larcker criteria. Thus, the constructs used in the study can be considered valid and reliable for further analysis.

4.6. Reliability Test

Cronbach's Alpha is used to measure the internal consistency of the indicators that make up a construct. The commonly used value as a limit is ≥ 0.70, which indicates good reliability. Composite Reliability (CR) is usually also used as a complement, with the same threshold (≥ 0.70).

Table 7: Cronbach Alpha Values

Variable	Cronbach's alpha	Remarks
Competitive Advantage	0.734	Reliable
Halal Supply Chain Integration	0.730	Reliable
Digital Islamic Marketing Capability	0.764	Reliable
Eco-Innovation	0.723	Reliable

Source: Processed data (2026)

All variables had a Cronbach's Alpha value of ≥ 0.70, so the research instrument was declared reliable. This means that the indicators used are consistent in measuring each construct. With good reliability, the instrument can be used for further analysis (e.g. discriminant validity test or structural model testing).

4.7. Fit Model Validation Test

Table 8: Model Fit Test Results

	Estimated model	Rule of Thumb	Remarks
SRMR	0.092	< 0,10	Fit
d_ULS	0.236	> 0,05	Fit
d_G	0.110	> 0,05	Fit
Chi-square	98.676	> 14.067	Fit
NFI	0.704	Close to 1	Fit

Source: Processed data (2026)

All fit model indicators (SRMR, d_ULS, d_G, Chi-square, NFI) show results that meet the rule of thumb criteria. Thus, the research model can be declared fit and suitable for further analysis. This means that the structure of the model is built in accordance with empirical data and can be trusted to test the research hypothesis.

4.8. Inner Model (Hypotheses Testing, R-Square)

R-Square shows how much independent variables are able to explain dependent variables in the research model. The higher the R-Square value, the greater the proportion of the variance of the dependent variable that can be explained by the independent variable. A value **of 0.25** is considered weak, a value **of 0.50** is considered moderate, and a value **of 0.75** is considered strong(Hair et al., 2013).

Table 9: R-Square Test Results

Variable	R-square	R-square adjusted
Competitive Advantage	**0.375**	**0.367**

Eco-Innovation	**0.317**	**0.308**
Halal Supply Chain Integration	**0.144**	**0.139**

Source: Processed data (2026)

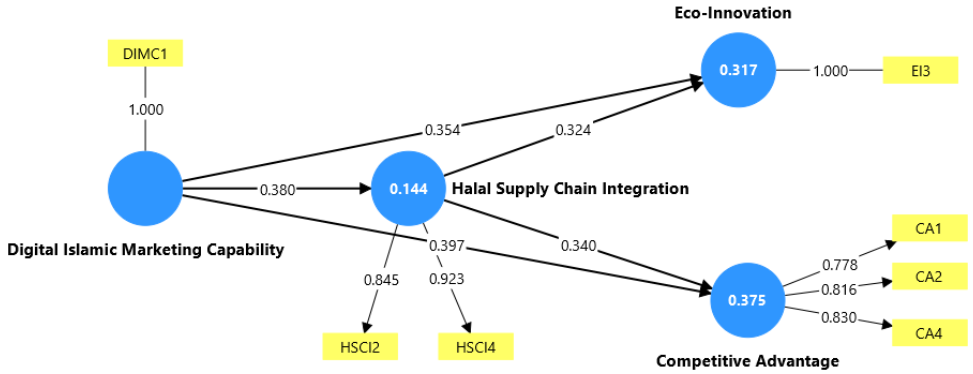
The R-square result table illustrates how much the independent variables in the model are able to explain the variation of each dependent variable. A higher R-square value indicates a stronger model explainability, while a lower value indicates that there are still other factors outside the model that are influential.

For the Competitive Advantage construct, the R-square value of 0.375 with an adjusted value of 0.367 indicates that about 37.5% of the variation in competitive advantage can be explained by the independent variables used in the model. This value belongs to the moderate category, so the model is quite capable of explaining the factors that affect competitive advantage, although there is still room for other variables outside the model.

In the Eco-Innovation construct, the R-square value of 0.317 with an adjusted 0.308 indicates that about 31.7% of the variation of environmentally friendly innovation can be explained by independent variables. This value is relatively moderate to the bottom, indicating that although the model has explanatory capabilities, there are still other external factors that play an important role in driving eco-innovation.

As for the Halal Supply Chain Integration construct, the R-square value of 0.144 with an adjusted 0.139 indicates that only about 14.4% of the variation in halal supply chain integration can be explained by independent variables in the model. This value is relatively low, so halal supply chain integration is likely influenced by other factors that have not been included in the study, such as regulations, organizational culture, or technology support.

Overall, these results show that the research model has a moderate explanatory ability for Competitive Advantage and Eco-Innovation, but is still weak in explaining Halal Supply Chain Integration.



Source: Processed data (2026)

Figure 3: PLS SEM Algorithm Model Output

In this model, Digital Islamic Marketing Capability is the earliest variable and has a direct influence on the other three constructs. The path to Halal Supply Chain Integration has a coefficient of 0.380, showing that digital marketing capabilities based on Islamic principles contribute quite strongly to halal supply chain integration. In addition, Digital Islamic Marketing Capability also affects Eco-Innovation with a coefficient of 0.354, and Competitive Advantage with a coefficient of 0.324. Although the influence is not as great as business ethics in the previous model, it remains an important factor that drives innovation and competitive advantage.

Furthermore, Halal Supply Chain Integration has a role as an intermediate variable that connects Digital Islamic Marketing Capability with other outcomes. Halal supply chain integration has an effect on Eco-Innovation with a coefficient of 0.354, and on Competitive Advantage with a coefficient of 0.340. This shows that the better the integration of the halal supply chain, the greater

the opportunity for companies to innovate in an environmentally friendly manner and gain a competitive advantage.
The Eco-Innovation construct itself is explained by one very strong indicator (loading 1,000), and has an R^2 value of 0.317. Meanwhile, Competitive Advantage is explained by three valid indicators with high loading (0.778–0.830) and has an R^2 value of 0.375. This indicates that competitive advantage is the main outcome influenced by a combination of digital capabilities, halal supply chain integration, and environmentally friendly innovation.
Overall, this model confirms that Digital Islamic Marketing Capability is the starting point that drives halal supply chain integration and eco-innovation, which ultimately strengthens Competitive Advantage. In other words, companies that are able to develop digital capabilities based on Islamic values, integrate halal supply chains, and innovate sustainably will be better able to build a competitive advantage in the market

4.9. Hypotheses Test

Table 10: Direct Effect Significance Test Results

Path Coefficients	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Remarks
Digital Islamic Marketing Capability -> Competitive Advantage	0.397	0.399	0.069	5.769	0.000	Proven
Digital Islamic Marketing Capability -> Eco-Innovation	0.354	0.353	0.072	4.932	0.000	Proven
Digital Islamic Marketing Capability -> Halal Supply Chain Integration	0.380	0.379	0.072	5.278	0.000	Proven
Halal Supply Chain Integration -> Competitive Advantage	0.340	0.339	0.068	4.961	0.000	Proven
Halal Supply Chain Integration -> Eco-Innovation	0.324	0.325	0.073	4.428	0.000	Proven

Source: Processed data (2026)

The table of the results of the Path Coefficients test shows the direct relationship between variables in the research model and the level of their significance. All the tested pathways proved significant with a p< value of 0.05, so it can be concluded that the model has good explanatory power.
First, Digital Islamic Marketing Capability has been proven to have a positive effect on three main variables. The effect on Competitive Advantage is 0.397 with a high T value (5.769), indicating that digital marketing capabilities based on Islamic principles are able to increase the company's competitive advantage. In addition, this variable also affects Eco-Innovation with a coefficient of 0.354 and Halal Supply Chain Integration with a coefficient of 0.380. These two relationships are significant, showing that digital marketing capabilities based on Islamic values encourage sustainable innovation while strengthening halal supply chain integration.
Furthermore, Halal Supply Chain Integration also has an important influence on other outcomes. The integration of the halal supply chain has an effect on Competitive Advantage with a coefficient of 0.340 and on Eco-Innovation with a coefficient of 0.324. These two influences are significant, confirming that the better the integration of the halal supply chain, the greater the opportunity for companies to innovate in an environmentally friendly manner and gain a competitive advantage.
Overall, these results show that Digital Islamic Marketing Capability plays a key variable that drives halal supply chain integration and innovation, which in turn strengthens the Competitive Advantage. Meanwhile, Halal Supply Chain Integration serves as a link that strengthens the

relationship between digital capabilities and the company's strategic outcomes. This model emphasizes that the combination of digital capabilities based on Islamic values, halal supply chain integration, and eco-innovation is an important foundation for building a sustainable competitive advantage.

Table 11: Indirect Effect Significance Test Results (full mediation)

Path Coefficients	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Remarks
Digital Islamic Marketing Capability -> Halal Supply Chain Integration -> Competitive Advantage	0.129	0.129	0.037	3.477	0.000	Proven
Digital Islamic Marketing Capability -> Halal Supply Chain Integration -> Eco-Innovation	0.123	0.123	0.037	3.362	0.000	Proven

Source: Processed data (2026)

The table of the results of the Indirect Effect (mediation) test shows that Digital Islamic Marketing Capability not only has a direct effect on other variables, but also has an indirect influence through Halal Supply Chain Integration.

First, the Digital Islamic Marketing Capability to Halal Supply Chain Integration to Competitive Advantage path has a coefficient of 0.129 with a value of T = 3.477 and a p-value = 0.000. This result is significant, so it can be concluded that digital marketing capabilities based on Islamic principles increase the company's competitive advantage through the mediation role of halal supply chain integration. In other words, companies that are able to develop Islamic digital capabilities will more easily integrate the halal supply chain, and this integration ultimately strengthens the company's competitiveness.

Second, the Digital Islamic Marketing Capability to Halal Supply Chain Integration to Eco-Innovation pathway has a coefficient of 0.123 with a value of T = 3.362 and p-value = 0.000. These results are also significant, showing that Islamic digital capabilities drive environmentally friendly innovation indirectly through halal supply chain integration. This means that digital marketing capabilities based on Islamic values help companies build a more solid halal supply chain system, and the system then becomes the foundation for the creation of eco-innovation.

Overall, these results confirm that Halal Supply Chain Integration plays an important role as a mediator in the relationship between Digital Islamic Marketing Capability and the company's strategic outcomes. Islamic digital capabilities not only have a direct impact, but also strengthen their influence on competitive advantage and sustainable innovation through halal supply chain mediation. These findings enrich the understanding that halal supply chain integration is a key mechanism that bridges digital capabilities with a company's strategic achievements.

4.10. Effect Size

Table 12: Effect Size (f2) Test Results

	Competitive Advantage	Digital Islamic Marketing Capability	Eco-Innovation	Halal Supply Chain Integration
Competitive Advantage				
Digital Islamic Marketing	0.216		0.157	0.169

Capability		
Eco-Innovation		
Halal Supply Chain Integration	0.158	0.131

Source: Processed data (2026)

The results show that Digital Islamic Marketing Capability has an influence on three variables at once. The effect on Competitive Advantage is 0.216, on Eco-Innovation is 0.157, and on Halal Supply Chain Integration is 0.169. These values show that digital marketing capabilities based on Islamic principles play an important role as an important factor that drives competitive advantage, environmentally friendly innovation, and halal supply chain integration, although its strength is relatively moderate.

In addition, Halal Supply Chain Integration also contributes to two other variables. The effect on Competitive Advantage is 0.158 and on Eco-Innovation is 0.131. This value indicates that halal supply chain integration plays a role in strengthening the company's competitiveness while encouraging sustainable innovation, although the impact is not as great as digital marketing capabilities.

Overall, this table shows that Digital Islamic Marketing Capability is the most consistent variable that influences strategic outcomes, while Halal Supply Chain Integration serves as a support that strengthens relationships towards competitive advantage and eco-innovation. Thus, this model confirms that the combination of Islamic digital capabilities and halal supply chain integration is an important foundation in building innovation and competitive advantage of companies.

5. Conclusion, Implications and Future Research

5.1. Conclusion

This research shows that Digital Islamic Marketing Capability has an important role in encouraging halal supply chain integration, eco-innovation, and competitive advantage. In addition to direct influence, there is also an indirect influence through Halal Supply Chain Integration which strengthens the relationship towards innovation and competitive advantage. This model emphasizes that the combination of digital capabilities based on Islamic values, halal supply chain integration, and eco-innovation is a strategic foundation for companies to build sustainable competitiveness.

5.2. Implications

Theoretically, this study expands the literature on the relationship between Islamic digital capabilities, halal supply chains, sustainable innovation, and competitive advantage. These findings confirm that Islamic ethics and values can be integrated into the digital marketing and supply chain framework to produce a sustainable competitive advantage. Practically, the results of the study provide a direction for managers and business people that investing in digital capabilities based on Islamic values not only increases efficiency, but also strengthens the integration of the halal supply chain and encourages environmentally friendly innovation. Thus, the company can build a stronger reputation, increase consumer trust, and strengthen its competitive position in the global market.

5.3. Future Research

For further research, there are several directions that can be developed. First, expand the model by including other variables such as organizational culture, leadership style, or sustainability practices to look at more complex interactions. Second, conducting longitudinal studies in order to test the consistency of the influence of these variables in the long term, especially in the face of market dynamics and global crises. Third, cross-sector or cross-country research can provide comparative insights into how Islamic digital capabilities and halal supply chain integration play a role in different cultural, regulatory and digitalization contexts. Thus, future research can enrich understanding and reinforce the generalization of these findings in a variety of business contexts.

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