

What Drives Halal Ecosystem Adoption? A Hierarchical Literacy Model in Indonesia

Nuruddin Mhd Ali^{1*}, Muhammad Said², Indo Yama³, Suhendra⁴

^{1,2,3,4}Faculty of Economics and Business, Universitas Islam Negeri Syarif Hidayatullah Jakarta, Indonesia

Email: ¹nuruddin.mhdali20@mhs.uinjkt.ac.id, ²muhammad@uinjkt.ac.id,

³indo.yama@uinjkt.ac.id, ⁴suhendra.feb@uinjkt.ac.id

^{*}Corresponding Author

JEL Classification:

D12

M31

Z12

Received: 30 March 2026

Revised: 21 May 2026

Accepted: 30 May 2026

Published online: September 2026

Abstract

Research Originality: This study reconceptualizes halal literacy as a ten-dimensional hierarchical construct that integrates cognitive, affective, and behavioral competencies within a unified ecosystem model, validated through a systematic mapping of 18,590 publications.

Research Objectives: This study develops and validates a holistic halal literacy model and examines its influence on Muslim consumers' intention and behavioral adoption across Indonesia's halal ecosystem.

Research Methods: Data were collected from 868 Muslim consumers across seven halal sectors (food, pharmaceuticals, tourism, cosmetics, logistics, finance, media) and analyzed using hierarchical Partial Least Squares Structural Equation Modeling.

Empirical Results: The ten-dimensional model demonstrated robust psychometric validity, with all dimensions contributing significantly. Holistic halal literacy significantly influences intention and behavioral adoption, with intention mediating the relationship. The indirect effect exceeded the direct pathway, confirming that literacy primarily shapes motivational readiness. Cultural influence, source credibility, and certification standards emerged as dominant predictors.

Implications: Developing an effective halal ecosystem requires integrated literacy interventions, enhanced institutional credibility, community-based reinforcement, digital transparency, and educational integration to strengthen Indonesia's global competitiveness in the halal sector.

Keywords:

behavioral intention; purchase behavior; religious consumption; certification awareness; muslim consumers.

How to Cite:

Ali, N. M., Said, M., Nasaruddin, I. Y., & Suhendra. (2026). What Drives Halal Ecosystem Adoption? A Hierarchical Literacy Model in Indonesia. *Etikonomi*, 25(2), 755 – 768. <https://doi.org/10.15408/etk.v25i2.50553>.

INTRODUCTION

The global halal economy has evolved from a religious practice into a strategic economic ecosystem, with Muslim consumer spending projected to reach USD 3.1 trillion by 2027 at an annual growth rate of 4.8 percent (Wirakurnia et al., 2022). Halal consumption now transcends faith-based compliance, becoming a multifaceted socio-economic phenomenon encompassing food, finance, pharmaceuticals, cosmetics, tourism, and digital platforms. This transformation reflects a fundamental shift in how religious identity intersects with lifestyle choices, ethical consumption, and market structures in an increasingly globalized economy, where Muslim consumers prioritize halal products as an act of religious conformity and identity formation, thereby reshaping production systems and consumer behavior worldwide.

Indonesia ranks third globally in the Islamic Economy Indicator yet faces a critical paradox. Despite possessing immense demographic potential and robust regulatory infrastructure, including Law No. 33/2014 on Halal Product Assurance, the nation struggles to convert this capacity into ecosystem leadership. While Indonesia performs strongly across Islamic finance, media, travel, and halal food sectors, structural gaps persist in innovation capacity, supply chain integration, and institutional coordination. Most critically, a severe disconnect exists between halal certification practices and the adoption of Islamic finance: national data show that Islamic financial literacy is substantially lower than general financial literacy, and Islamic financial inclusion similarly lags behind conventional inclusion (Wirakurnia et al., 2022). These disparities expose a fundamental problem: the absence of holistic literacy frameworks that bridge cognitive knowledge, affective commitment, and behavioral adoption across the entire halal ecosystem.

Existing halal literacy research remains fragmented and conceptually limited. One stream focuses on narrow cognitive aspects, such as awareness of certification standards (Kohilavani et al., 2021), blockchain traceability (Bux et al., 2022), and sector-specific knowledge in tourism and financial performance (Sirat & Jannang, 2022). These studies generally treat literacy as one-dimensional, static knowledge rather than a dynamic, multidimensional capability. A second stream examines halal literacy within the Theory of Planned Behavior, mainly as a predictor of purchase intention (Khan et al., 2022; Fuadi et al., 2022; Bhutto et al., 2023). However, most use single-item or one-dimensional measures and do not explain how cognitive, affective, and behavioral dimensions interact. A third stream examines ecosystem development through institutional governance (Almunawar et al., 2025) and supply chain integration (Tumiwa et al., 2023), but does not connect individual literacy with broader ecosystem adoption. Thus, literacy, behavioral, and ecosystem research remain largely disconnected.

A systematic literature mapping in this study, covering 18,590 publications from 2019 to 2024 using Publish or Perish and VOSviewer, identified more than 10,000 thematic intersections between halal literacy and ecosystem development. However, the literature still lacks an integrated framework that views literacy as a hierarchical, multidimensional construct and as a driver of ecosystem-level behavioral adoption. Existing models cannot fully explain how consumers combine knowledge, trust, social norms, and behavioral control to participate in the halal ecosystem. This gap is reinforced by

methodological limitations, as many studies use unidimensional measures or examine literacy separately from psychosocial factors such as subjective norms and perceived behavioral control (Khoirunnisa et al., 2025; Fuadi et al., 2022). No previous study has comprehensively validated a hierarchical halal literacy structure across multiple halal sectors while testing its relationship with behavioral adoption through motivational mediation.

The research gap is therefore threefold. First, theoretically, existing studies do not integrate cognitive, affective, and behavioral dimensions into a unified hierarchical halal literacy framework. Second, methodologically, empirical validation of multidimensional halal literacy across different halal sectors using hierarchical modeling remains limited. Third, practically, existing frameworks do not clearly explain how literacy leads to ecosystem adoption through psychosocial mechanisms. This study addresses these gaps through three main contributions. First, conceptual innovation: it defines halal literacy as a ten-dimensional hierarchical construct covering cognitive knowledge, affective orientation, and behavioral competencies within an integrated ecosystem framework. Second, methodological innovation: it uses hierarchical component modeling in PLS-SEM to validate this structure and test direct and intention-mediated pathways among 868 Muslim consumers across seven halal sectors: food, pharmaceuticals, tourism, cosmetics, logistics, finance, and media. Third, the empirical contribution is that halal literacy influences behavior mainly through motivational readiness rather than directly, with cultural influence, source credibility, and certification standards emerging as key predictors.

Drawing on educational taxonomy and the Theory of Planned Behavior, this study asks: How does holistic halal literacy, as a hierarchical multidimensional construct, influence Muslim consumers' intention and actual behavioral adoption within Indonesia's halal ecosystem? The findings provide an evidence-based framework for strengthening Indonesia's halal ecosystem and supporting its transition from demographic potential to global halal hub leadership.

METHODS

This study employs a positivist quantitative approach and a cross-sectional survey design to empirically investigate how holistic halal literacy influences the adoption of the halal ecosystem among Muslim consumers in Indonesia. A deductive methodology was applied, operationalizing theoretical constructs from halal literacy frameworks and the Theory of Planned Behavior into quantifiable measures analyzed using multivariate statistical modeling. The target population comprised Indonesian Muslim consumers, totaling approximately 236.53 million, according to data from the Directorate General of Population and Civil Registration. A stratified random sampling method was employed across seven halal sectors (food and beverage, pharmaceuticals, tourism, cosmetics, logistics, banking and finance, and media and entertainment), with equal allocation of 124 respondents per sector to ensure proportional representation.

Inclusion criteria: (1) self-identified Muslim aged 18+ years, (2) actively consuming halal products/services within the past six months, (3) residing in Indonesia during data

collection (January–March 2025), and (4) proficient in Bahasa Indonesia. Exclusion criteria: (1) non-Muslim respondents, (2) age below 18, (3) no halal consumption experience in the preceding six months, and (4) incomplete responses exceeding 10% missing data. Data were collected via an online survey (Google Forms) distributed through Islamic community networks and social media platforms. Following PLS-SEM recommendations of 5 to 10 observations per indicator (Hair et al., 2018), with 59 indicators in the measurement model, the minimum required sample size was 295 to 590 respondents. The final sample of 868 valid responses substantially exceeded this threshold, ensuring sufficient statistical power for estimating a hierarchical component model.

All constructs were measured using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Holistic halal literacy was conceptualized as a ten-dimensional higher-order construct comprising: knowledge of halal principles, halal certification and standards, awareness of halal products and services, compliance with halal practices, attitudes and perceptions, sources of information, cultural and social influence, educational and professional development, practical application and innovation, and enablers and drivers of halal literacy. Subjective norms, perceived behavioral control, intention to adopt, and behavioral adoption were measured using scales adapted from Antara et al. (2016) and validated against recent literature (Fuadi et al., 2022; Khoirunnisa et al., 2025).

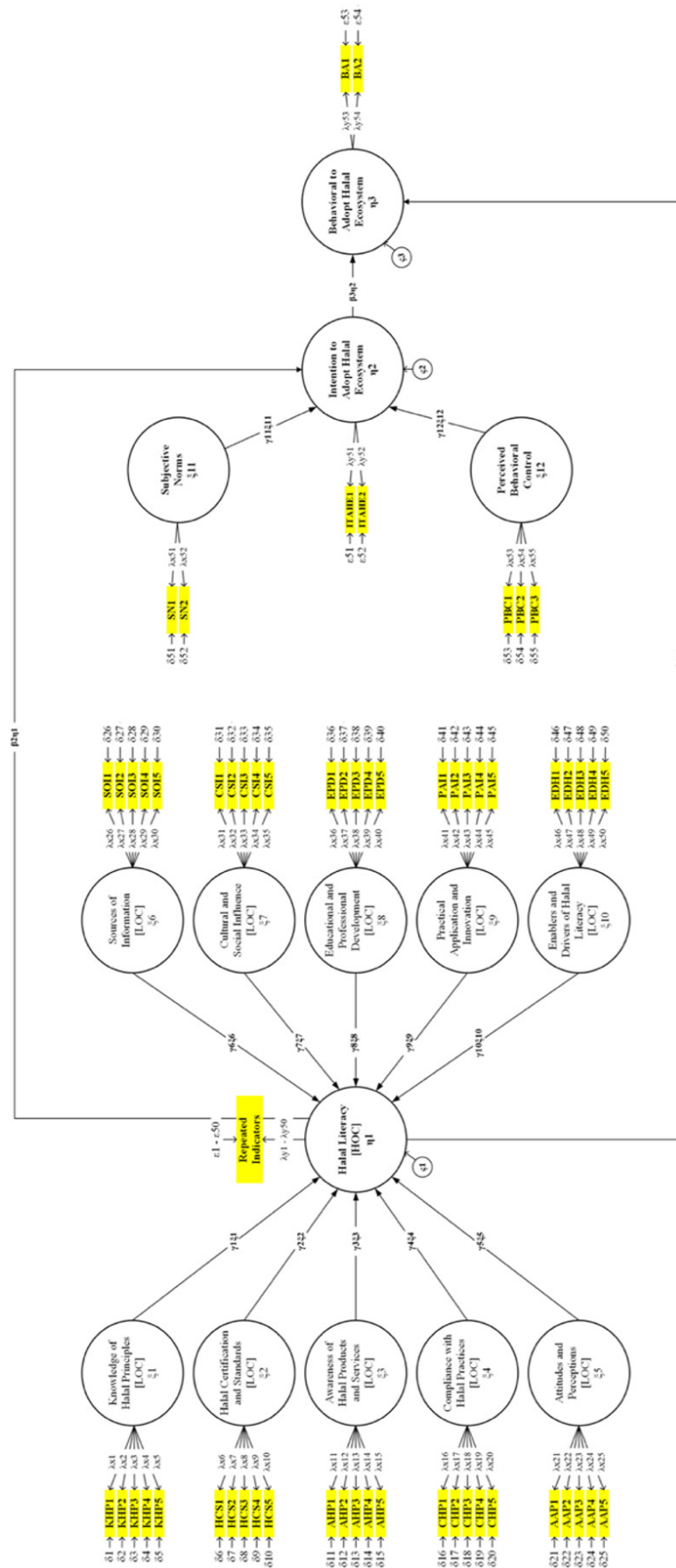
Figure 1 illustrates the research framework, where holistic halal literacy (ξ_1) serves as the primary exogenous construct with ten lower-order dimensions, each measured by five indicators (x_1 – x_{50}). Subjective norms (ξ_2) and perceived behavioral control (ξ_3) are additional exogenous constructs, each measured by three indicators (x_{51} – x_{59}). Endogenous constructs include intention to adopt (η_1 , measured by y_1 – y_4) and behavioural adoption (η_2 , measured by y_5 – y_9). The model tests direct effects (γ and β paths) and indirect effects through intention mediation, with δ and ε representing measurement errors and ζ representing structural disturbances.

Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed with a hierarchical component model approach using the repeated indicator method (Sarstedt et al., 2019). Bootstrapping with 5,000 resamples tested path significance and mediation effects (Hair et al., 2018). Model evaluation followed standard criteria: convergent validity (loadings ≥ 0.70 , CR ≥ 0.70 , AVE ≥ 0.50), discriminant validity (Fornell-Larcker criterion, HTMT ≤ 0.85), and structural quality (path coefficients, R^2 , Q^2).

RESULTS AND DISCUSSION

This study establishes three principal findings that advance halal ecosystem adoption theory. First, holistic halal literacy is a balanced, ten-dimensional hierarchical construct, with all dimensions contributing equally to the higher-order capability. Second, literacy more strongly influences adoption intention than direct behavioral adoption, revealing a dual-pathway mechanism that prioritizes motivational readiness. Third, intention fully mediates the literacy-behavior relationship, with indirect effects exceeding direct pathways, demonstrating that ecosystem adoption requires integrated psychosocial mechanisms rather than isolated knowledge transmission.

Figure 1. Structural Model Conceptual



Notes. ξ (Xi) represents latent exogenous variables. η (Eta) represents latent endogenous variables. x denotes observed variables measuring latent exogenous constructs. y denotes observed variables measuring latent endogenous constructs. λ_x (Lambda_x) indicates the factor loadings of latent exogenous variables. λ_y (Lambda_y) indicates the factor loadings of latent endogenous variables. γ (Gamma) represents the path coefficient from exogenous variables to endogenous variables. ζ (Zeta) represents the disturbance term of latent endogenous variables. β (Beta) represents the path coefficient among endogenous variables. δ (Delta) denotes measurement error associated with observed indicators of latent exogenous variables. ϵ (Epsilon) denotes measurement error associated with observed indicators of latent endogenous variables.

The final sample comprised 868 valid responses, equally distributed across seven halal sectors to ensure proportional representation. Gender distribution was balanced, with a generational concentration in Gen Y and Gen Z, reflecting digitally engaged Muslim consumers driving contemporary halal markets. Educational diversity and middle-income dominance characterized the sample. Geographic distribution favored Greater Jakarta, though non-metropolitan inclusion ensured national representativeness. Cross-tabulation confirmed consistent demographic distribution across sectors, indicating behavioral patterns driven by literacy and psychosocial factors rather than demographic imbalances.

Table 1 demonstrates robust psychometric properties across hierarchical levels. All indicators exceeded minimum thresholds for loadings, composite reliability, and average variance extracted, confirming convergent validity. Discriminant validity was confirmed through HTMT ratios and the Fornell-Larcker criterion, ensuring conceptual distinctiveness among constructs. The balanced structure across all ten dimensions validates the holistic conceptualization, with cultural and social influence, sources of information, and halal certification standards emerging as marginally stronger contributors. This balanced structure challenges prior fragmented approaches that privilege cognitive knowledge over affective or behavioral dimensions. The uniformity of contributions extends Khasanah et al. (2023), who proposed but did not empirically validate multidimensional halal food literacy across sectors. This cross-sectoral robustness suggests that halal literacy is a universal capability rather than a sector-specific competence, contradicting assumptions that literacy requirements differ fundamentally across halal industries.

Table 2 presents hypothesis testing results confirming all proposed relationships. Holistic halal literacy significantly influences both intention and behavioral adoption, though the intention pathway is considerably stronger. This asymmetry reveals a critical theoretical insight: literacy operates primarily as a motivational catalyst rather than a direct behavioral trigger. While prior studies by Khan et al. (2022) and Wirakurnia et al. (2022) documented literacy-intention links, they conceptualized literacy unidimensionally and overlooked the mediating architecture. The present findings demonstrate that adoption intention is shaped not by isolated cognitive knowledge but by the simultaneous convergence of all ten literacy dimensions (cognitive, affective, and behavioral), producing a multiplicative rather than additive effect on motivational readiness.

The weaker direct literacy-behavior pathway, compared with the intention-mediated route, confirms the Theory of Planned Behavior's motivational mediation principle. This pattern challenges simplistic knowledge-deficit models prevalent in halal literacy interventions, which assume information provision automatically produces behavioral change. Consistent with recent meta-analytic evidence (Hagger & Hamilton, 2024; Zafar & Jafar, 2026), intention serves as the proximal determinant of action, while antecedent psychological factors exert stronger indirect than direct effects. The implication is profound: halal ecosystem development strategies emphasizing certification awareness campaigns or halal principle education will fail unless they simultaneously cultivate behavioral intention through affective engagement and social norm reinforcement.

Table 1. Convergent Validity of Holistic Halal Literacy Model

Higher Order Construct [HOC]				Lower Order Construct [LOC]			
Construct	Item	Loading	Note	Construct	Item	Loading	Note
<i>Holistic Halal Literacy</i>	KHP1	0.879	Valid	<i>Knowledge of Halal Principles</i>	KHP1	0.722	Valid
	KHP2	0.898	Valid		KHP2	0.741	Valid
	KHP3	0.907	Valid		KHP3	0.764	Valid
	KHP4	0.897	Valid		KHP4	0.745	Valid
	KHP5	0.901	Valid		KHP5	0.742	Valid
	HCS1	0.902	Valid	<i>Halal Certification and Standards</i>	HCS1	0.739	Valid
	HCS2	0.905	Valid		HCS2	0.742	Valid
	HCS3	0.896	Valid		HCS3	0.741	Valid
	HCS4	0.892	Valid		HCS4	0.739	Valid
	HCS5	0.901	Valid		HCS5	0.747	Valid
	AHP1	0.899	Valid	<i>Awareness of Halal Products and Services</i>	AHP1	0.72	Valid
	AHP2	0.901	Valid		AHP2	0.731	Valid
	AHP3	0.901	Valid		AHP3	0.735	Valid
	AHP4	0.892	Valid		AHP4	0.712	Valid
	AHP5	0.871	Valid		AHP5	0.677	Valid
	CHP1	0.899	Valid	<i>Compliance with Halal Practices</i>	CHP1	0.702	Valid
	CHP2	0.899	Valid		CHP2	0.738	Valid
	CHP3	0.904	Valid		CHP3	0.727	Valid
	CHP4	0.906	Valid		CHP4	0.739	Valid
	CHP5	0.903	Valid		CHP5	0.757	Valid
	AAP1	0.887	Valid	<i>Attitudes and Perceptions</i>	AAP1	0.737	Valid
	AAP2	0.893	Valid		AAP2	0.746	Valid
	AAP3	0.889	Valid		AAP3	0.73	Valid
	AAP4	0.894	Valid		AAP4	0.74	Valid
	AAP5	0.896	Valid		AAP5	0.737	Valid
	SOI1	0.896	Valid	<i>Sources of Information</i>	SOI1	0.734	Valid
	SOI2	0.898	Valid		SOI2	0.738	Valid
	SOI3	0.904	Valid		SOI3	0.742	Valid
	SOI4	0.909	Valid		SOI4	0.765	Valid
	SOI5	0.9	Valid		SOI5	0.748	Valid
	CSI1	0.902	Valid	<i>Cultural and Social Influence</i>	CSI1	0.746	Valid
	CSI2	0.914	Valid		CSI2	0.747	Valid
	CSI3	0.915	Valid		CSI3	0.764	Valid
	CSI4	0.912	Valid		CSI4	0.746	Valid
	CSI5	0.905	Valid		CSI5	0.75	Valid
	EPD1	0.893	Valid	<i>Educational and Professional Development</i>	EPD1	0.735	Valid
	EPD2	0.898	Valid		EPD2	0.728	Valid
	EPD3	0.901	Valid		EPD3	0.745	Valid
	EPD4	0.897	Valid		EPD4	0.754	Valid
	EPD5	0.889	Valid		EPD5	0.751	Valid
	PAI1	0.893	Valid	<i>Practical Application and Innovation</i>	PAI1	0.725	Valid
	PAI2	0.904	Valid		PAI2	0.756	Valid
	PAI3	0.907	Valid		PAI3	0.739	Valid
	PAI4	0.901	Valid		PAI4	0.729	Valid
	PAI5	0.898	Valid		PAI5	0.739	Valid
	EDH1	0.898	Valid	<i>Enablers and Drivers of Halal Literacy</i>	EDH1	0.725	Valid
	EDH2	0.888	Valid		EDH2	0.719	Valid
	EDH3	0.894	Valid		EDH3	0.722	Valid
	EDH4	0.902	Valid		EDH4	0.732	Valid
	EDH5	0.896	Valid		EDH5	0.705	Valid

Subjective norms exert a stronger influence on intention than perceived behavioral control, reflecting Indonesia's collectivist cultural orientation, where community expectations supersede perceptions of individual self-efficacy. This extends Fuadi et al. (2022) and Albra et al. (2023) by demonstrating that psychosocial mechanisms operate uniformly across multi-sectoral ecosystems, not merely single-product purchasing contexts. The relatively modest effect of perceived behavioral control suggests that structural barriers (regulatory complexity, certification costs, information asymmetry) constrain individual agency and require institutional interventions to improve ecosystem accessibility.

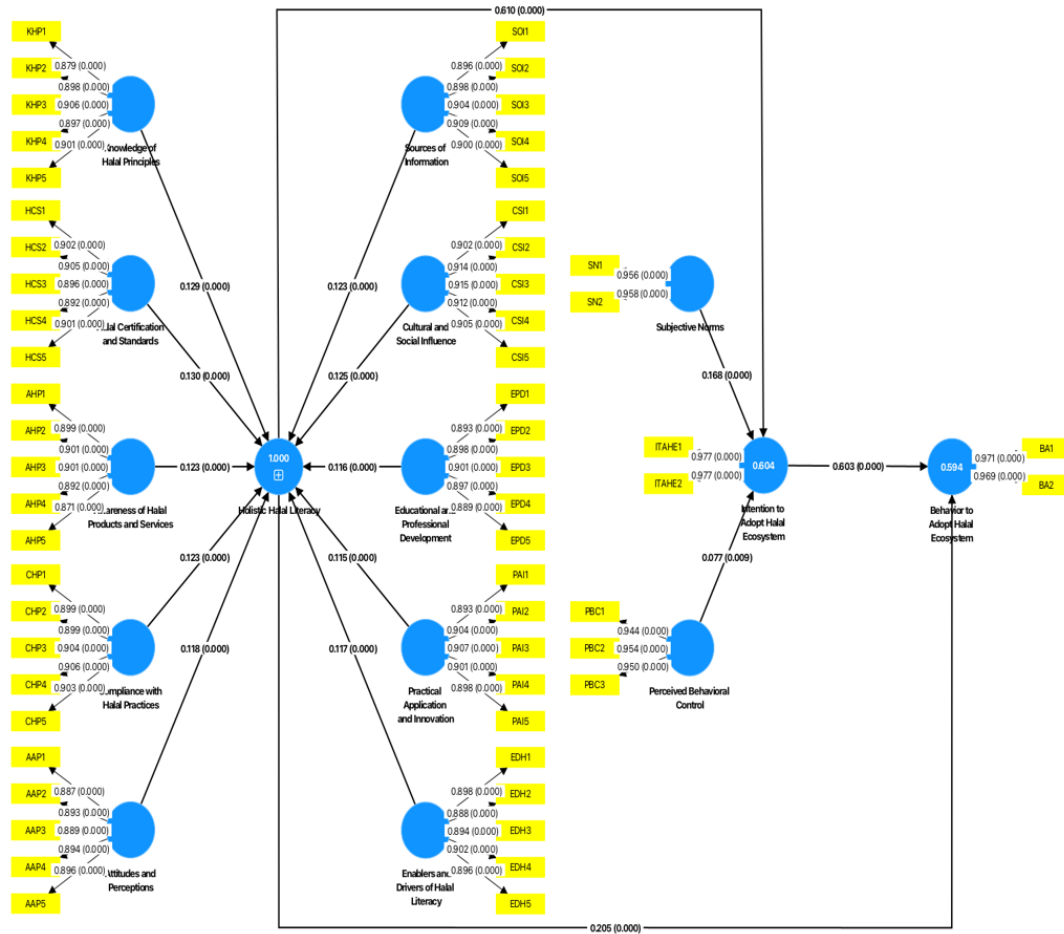
The prominence of cultural and social influence, information source credibility, and certification standards as leading literacy dimensions unveils specific intervention pathways. In collectivist Muslim societies, halal adoption operates through social identity mechanisms in which religious community norms internalize compliance behaviors even without explicit rational calculation (Fahrullah & Musafak, 2025). This contrasts with Western individualist consumption models emphasizing autonomous choice. Policy implication: grassroots literacy interventions that leverage Islamic institutions, community leaders, and peer networks will outperform centralized government campaigns disconnected from the social fabric. Information source credibility addresses Indonesia's digital transformation paradox: widespread internet access coexists with the proliferation of halal misinformation (Sayogo, 2018). This dimension shows that literacy building requires trusted institutional gatekeepers (government-endorsed platforms, certified halal authorities, credible Islamic scholars) to counter social media misinformation. The salience of certification standards confirms that regulatory transparency and traceability systems function as literacy enablers, not merely compliance mechanisms (Fathoni et al., 2024; Tumiwa et al., 2023; Ihsan et al., 2022). This reframes certification from a bureaucratic requirement to cognitive infrastructure that reduces decision-making uncertainty and builds consumer confidence.

The balanced contribution of educational development, practical innovation, and policy enablers demonstrates that literacy evolves dynamically with technological and regulatory contexts rather than remaining static knowledge. Integrating blockchain traceability (Bux et al., 2022; Karyani et al., 2024) and multi-stakeholder governance (Almunawar et al., 2025) transforms literacy from symbolic awareness into operational capability. This challenges conventional education-focused literacy interventions, suggesting that professional training, digital platform literacy, and regulatory navigation skills constitute equally critical competencies for ecosystem participation.

Table 2. Hypothesis Testing

Path	β	t	p	Decision
H1: Holistic Halal Literacy → Behavioral Intention to Adopt Halal Ecosystem	0.205	5.767	0.000	Accepted
H1a: Knowledge of Halal Principles (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.026	5.816	0.000	Accepted
H1b: Halal Certification and Standards (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.027	5.805	0.000	Accepted
H1c: Awareness of Halal Products and Services (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.025	5.783	0.000	Accepted
H1d: Compliance with Halal Practices (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.025	5.731	0.000	Accepted
H1e: Attitudes and Perceptions (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.024	5.744	0.000	Accepted
H1f: Sources of Information (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.025	5.749	0.000	Accepted
H1g: Cultural and Social Influence (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.026	5.780	0.000	Accepted
H1h: Educational and Professional Development (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.024	5.702	0.000	Accepted
H1i: Practical Application and Innovation (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.024	5.712	0.000	Accepted
H1j: Enablers and Drivers of Halal Literacy (Component of HHL) → Behavioral Intention to Adopt Halal Ecosystem	0.024	5.762	0.000	Accepted
H2: Holistic Halal Literacy → Intention to Adopt Halal Ecosystem	0.610	20.041	0.000	Accepted
H2a: Knowledge of Halal Principles (Component of HHL) → Intention to Adopt Halal Ecosystem	0.079	18.625	0.000	Accepted
H2b: Halal Certification and Standards (Component of HHL) → Intention to Adopt Halal Ecosystem	0.079	18.759	0.000	Accepted
H2c: Awareness of Halal Products and Services (Component of HHL) → Intention to Adopt Halal Ecosystem	0.075	18.320	0.000	Accepted
H2d: Compliance with Halal Practices (Component of HHL) → Intention to Adopt Halal Ecosystem	0.075	18.661	0.000	Accepted
H2e: Attitudes and Perceptions (Component of HHL) → Intention to Adopt Halal Ecosystem	0.072	18.875	0.000	Accepted
H2f: Sources of Information (Component of HHL) → Intention to Adopt Halal Ecosystem	0.075	19.536	0.000	Accepted
H2g: Cultural and Social Influence (Component of HHL) → Intention to Adopt Halal Ecosystem	0.076	20.197	0.000	Accepted
H2h: Educational and Professional Development (Component of HHL) → Intention to Adopt Halal Ecosystem	0.071	18.743	0.000	Accepted
H2i: Practical Application and Innovation (Component of HHL) → Intention to Adopt Halal Ecosystem	0.070	18.552	0.000	Accepted
H2j: Enablers and Drivers of Halal Literacy (Component of HHL) → Intention to Adopt Halal Ecosystem	0.071	18.282	0.000	Accepted
H3: Subjective Norms → Intention to Adopt Halal Ecosystem	0.168	5.447	0.000	Accepted
H4: Perceived Behavioral Control → Intention to Adopt Halal Ecosystem	0.077	2.599	0.009	Accepted
H5: Intention to Adopt Halal Ecosystem → Behavioral Intention to Adopt Halal Ecosystem	0.603	18.124	0.000	Accepted
H6: Holistic Halal Literacy → Behavioral Intention to Adopt Halal Ecosystem melalui Intention to Adopt Halal Ecosystem	0.368	13.562	0.000	Accepted
H7: Subjective Norms → Behavioral Intention to Adopt Halal Ecosystem melalui Intention to Adopt Halal Ecosystem	0.101	5.282	0.000	Accepted
H8: Perceived Behavioral Control → Behavioral Intention to Adopt Halal Ecosystem melalui Intention to Adopt Halal Ecosystem	0.046	2.545	0.011	Accepted

Figure 2. Bootstrapping Results of Main Conceptual Model



Intention's full mediation shows that literacy components activate motivational and immediate behavioral pathways in different ways. Cognitive dimensions (halal principles, certification knowledge) can trigger direct compliance among highly religious consumers with internalized values. However, affective dimensions (attitudes, cultural influence) and behavioral dimensions (practical application, innovation) require motivational reinforcement through intention formation before translating into action (Khoirunnisa et al., 2025). This dual-pathway architecture explains why literacy interventions produce heterogeneous behavioral outcomes: they succeed when targeting intention-building among uncommitted consumers. However, they may be redundant for value-committed segments already exhibiting direct literacy-behavior links. The strong intention-behavior relationship confirms that once motivational readiness is established, behavioral execution follows reliably across ecosystem sectors. This validates targeting interventions at the intention formation stage rather than attempting direct behavioral manipulation. However, the substantial unexplained variance in behavioral adoption suggests structural constraints (product availability, price premiums, certification accessibility) independently limit behavior regardless of intention strength. This points to the need for complementarity between literacy interventions and ecosystem infrastructure development.

Results demonstrate that halal ecosystem adoption operates through integrated literacy-psychosocial-behavioral mechanisms rather than isolated knowledge transmission. The validated ten-dimensional hierarchical structure positions literacy as a dynamic, multidimensional capability that bridges individual cognition and systemic participation. Stronger literacy-intention versus literacy-behavior pathways reveal that motivational mediation, not information provision, drives adoption. Dominant contributions from cultural influence, source credibility, and certification standards indicate that effective interventions require simultaneous individual literacy building, institutional credibility enhancement, and community norm reinforcement. These findings fundamentally challenge knowledge-deficit approaches, showing that Indonesia's halal ecosystem leadership requires integrated frameworks that connect cognitive education, affective engagement, behavioral infrastructure, and psychosocial support systems.

CONCLUSION

This study developed and validated a holistic halal literacy model and examined its influence on Muslim consumers' intention and behavioral adoption across Indonesia's halal ecosystem. The empirical validation confirms that holistic halal literacy operates as a ten-dimensional hierarchical construct (knowledge of halal principles, certification standards, product awareness, compliance practices, attitudes, information sources, cultural influence, educational development, practical innovation, and systemic enablers), with all dimensions contributing significantly and equally to the higher-order capability. The structural model shows that holistic halal literacy influences behavioral adoption through dual pathways: a stronger indirect effect mediated by intention and a weaker direct effect, indicating that literacy primarily builds motivational readiness before driving action. Subjective norms and perceived behavioral control further strengthen intention formation, confirming that ecosystem adoption requires integrated psychosocial mechanisms beyond isolated knowledge transmission.

Policy recommendations emphasize multi-level interventions. Policymakers should leverage community networks and religious institutions to reinforce halal norms, establish government-endorsed digital platforms to provide credible halal information countering online misinformation, and enhance certification transparency through simplified processes for small and medium enterprises. Integrating halal literacy modules into formal education and professional training will systematically build competencies among future stakeholders. Harmonizing literacy initiatives with the national halal industry masterplan will bridge gaps between certification systems, Islamic finance inclusion, and consumer adoption, accelerating Indonesia's transition toward global halal hub leadership. Future research should employ longitudinal designs, cross-country comparisons, and incorporate digital transformation variables to capture evolving global halal ecosystem dynamics.

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