

The Mediating Role Of MSME Knowledge In The Effect Of Halal Outreach On Participation In Free Halal Certification At The Office Of Religious Affairs Of Malili

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Abstract

This study analyzes the effect of halal outreach conducted by the Office of Religious Affairs (KUA) of Malili on the knowledge and participation of micro, small, and medium enterprises (MSMEs) in the free halal certification program (Sehati), and examines the mediating role of MSME knowledge. Employing a quantitative associative-causal design, the study surveyed 80 MSME owners in Malili District, East Luwu Regency, who had attended halal outreach sessions and were selected through purposive sampling. Data were collected using a five-point Likert scale questionnaire administered online and face to face, and analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with 500 bootstrap subsamples. The results show that halal outreach has a positive and significant effect on MSME knowledge ($\beta = 0.336$; $p = 0.003$), and MSME knowledge has a positive and significant effect on MSME participation ($\beta = 0.453$; $p = 0.003$). In contrast, halal outreach has no direct effect on participation ($\beta = 0.060$; $p = 0.809$). MSME knowledge fully mediates the effect of halal outreach on participation (indirect effect = 0.152; $p = 0.048$; VAF = 71.6%). These findings indicate that outreach encourages participation only when it succeeds in improving knowledge, particularly regarding certification procedures and required documents. The KUA should therefore adopt measurable knowledge gains as the indicator of outreach success and provide assistance until halal certificates are issued.

Keywords: halal outreach, MSME knowledge, MSME participation, free halal certification, Office of Religious Affairs



INTRODUCTION

The global halal industry continues to grow significantly. The *State of the Global Islamic Economy* 2024/25 report recorded Muslim consumer spending across Islamic economy sectors of USD 2.43 trillion in 2023, projected to reach USD 3.36 trillion by 2028, with halal food spending of USD 1.43 trillion projected to reach USD 1.94 trillion in the same year (DinarStandard, 2025). In Indonesia, halal certification is regarded as a driver of a sustainable Islamic economy (Latifah & Yusuf, 2024) and as a signal that strengthens business credibility and consumer trust (Bahrudin et al., 2025). Halal certification is therefore not merely a label but a strategic instrument for gaining recognition in both domestic and global markets.

The Indonesian government has responded through Law No. 33 of 2014 on Halal Product Assurance and its amendments, which require products circulating in Indonesia to be halal-certified and allow micro and small enterprises to obtain certification through a business actor's statement (*self-declare*) free of charge. This facility is implemented through the Free Halal Certification program (Sehati) run by the Halal Product Assurance Organizing Agency (BPJPH), with procedures regulated in Minister of Religious Affairs Regulation No. 20 of 2021. The urgency of the program has increased because Government Regulation No. 42 of 2024 sets 17 October 2026 as the deadline for mandatory halal certification of food, beverages, slaughtered products, and slaughtering services produced by micro and small enterprises.

Although the policy framework is in place, its implementation still faces various challenges. The transfer of halal certification authority from LPPOM-MUI to BPJPH has affected certification, accreditation, and supervision processes (Ibrahim et al., 2023), while regulatory complexity and bureaucratic inefficiency continue to prevent small businesses from participating (Fathoni et al., 2025). Siagian et al. (2024) found that the low rate of halal certification among micro and small enterprises is mainly caused by business owners' limited knowledge of certification regulations. Even after procedures were simplified through the self-declare scheme, program achievement can remain below target because of uneven halal knowledge, low digital literacy, and slow responses from business actors (Makiah et al., 2026). These findings suggest that fee waivers alone are insufficient to encourage MSME participation.

A similar situation occurs in Malili District, the capital of East Luwu Regency, South Sulawesi. Although the free halal certification program is available and the Office of Religious Affairs (KUA) of Malili District has conducted halal outreach, MSME participation in the program remains suboptimal. The KUA holds a strategic position because of its religious legitimacy and a service network that reaches communities at the district level. Islamic religious counselors act as facilitators, educators, and motivators in the halal certification process for MSMEs, although their effectiveness is constrained by



the limited number of counselors and the varied technical understanding of business owners (Windusari, 2025). Direct interaction through outreach and workshops has also been shown to improve MSMEs' understanding of the importance of halal certification (Pujiyanto & Setyorini, 2024). In the Luwu Raya region, studies on halal product assurance have so far focused mainly on supply chain traceability in traditional markets (Nur et al., 2024), while regional economic studies have emphasized the role of Islamic financial inclusion and digitalization in strengthening the local economy (Ernawati et al., 2026). Consequently, the effectiveness of KUA halal outreach in encouraging MSME participation has rarely been tested empirically.

Business owners' knowledge is presumed to be the key mechanism linking outreach to participation. According to the *Theory of Planned Behavior*, a person's ability to translate intention into behavior depends on perceived behavioral control, which rests on the resources and competencies available to that person (Ajzen, 1991). Knowledge has been shown to positively affect micro and small enterprises' intention to join the Sehati program (Noorazlina et al., 2026) and to be the most dominant factor in MSMEs' readiness for halal certification (Tuhuteru & Iqbal, 2024). However, knowledge does not always translate directly into action. Yosepha et al. (2026) reported a gap between awareness of the importance of halal certification (90.5%) and actual certificate ownership (57.1%), while Widigdo and Triyanto (2024) found that knowledge affects halal certification intention through an intervening variable. These findings point to the need to test direct and indirect paths simultaneously.

Based on this review, three research gaps underlie the novelty of this study. First, most studies on MSME halal certification have been conducted in urban areas or halal industry centers in Java and Sumatra, leaving non-urban contexts in South Sulawesi largely unexplored. Second, previous studies have mostly tested direct relationships or used qualitative approaches (e.g., Siagian et al., 2024), while quantitative tests of the mediating role of knowledge using Partial Least Squares–Structural Equation Modeling (PLS-SEM) remain limited. Third, the literature has focused mostly on the roles of BPJPH, LPPOM-MUI, or halal product process facilitators (Makiah et al., 2026; Ramadan et al., 2026), whereas the role of the KUA as a halal outreach agent has received little attention.

Accordingly, this study aims to analyze (1) the effect of halal outreach by the KUA of Malili on MSME knowledge, (2) the effect of MSME knowledge on participation in the free halal certification program, (3) the direct effect of halal outreach on MSME participation, and (4) the mediating role of MSME knowledge in the effect of halal outreach on MSME participation. Theoretically, this study enriches the Islamic economics and halal management literature on the mechanisms of behavioral change among business actors. Practically, its results provide input for the KUA, BPJPH, and local



governments in designing outreach that genuinely leads MSMEs to obtain halal certificates.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Theory of Planned Behavior and Diffusion of Innovations

The main theoretical foundation of this study is the *Theory of Planned Behavior* (TPB), which holds that intention is the closest predictor of behavior and is shaped by three determinants: attitude toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). In the context of halal certification, attitude is reflected in business owners' evaluation of the benefits of certification, including its religious dimension (Wiryanto et al., 2025); subjective norms stem from the expectations of Muslim consumers and religious figures trusted by the community (Arsyad & Ritonga, 2025); and perceived behavioral control relates to the ease of procedures and government policy support (Dawam et al., 2023; Fathoni et al., 2025). Knowledge of procedures, organizing institutions, and required documents strengthens business owners' belief that certification is attainable, so knowledge can be viewed as a source of perceived behavioral control.

Diffusion of innovations theory complements the TPB by explaining how information moves from change agents to target audiences. Rogers (2003) states that the innovation-decision process proceeds through the stages of knowledge, persuasion, decision, implementation, and confirmation, and that the effectiveness of diffusion depends on the source, message, channel, and receiver. In halal outreach, the KUA acts as the source, halal material as the message, face-to-face activities and media as the channel, and MSME owners as the receivers. One-way and formal communication is insufficient to change behavior unless it is followed by two-way, empathetic communication (Arsyad & Ritonga, 2025). This framework positions knowledge improvement as the first stage that MSMEs must pass through before deciding to register and complete certification.

Halal Outreach, MSME Knowledge, and MSME Participation

In this study, halal outreach is understood as a planned educational communication activity carried out by the KUA to build MSME owners' understanding of the obligations, benefits, and procedures of halal certification. It is not limited to one-way lectures; Abdullah et al. (2024) complemented workshops with continuous assistance and *pre-test* and *post-test* evaluations, while Yosepha et al. (2026) reported an increase in participants' average understanding from 85.7% to 98.3% after outreach and interactive discussions. Following Rogers' (2003) communication elements, halal outreach is measured through outreach frequency, material relevance, clarity of delivery, methods or media, and accessibility of outreach.



MSME knowledge is a cognitive aspect covering business owners' understanding of the concepts of halal and haram, the benefits of certification, application procedures, organizing institutions, and required documents. Fathoni et al. (2024) discuss this knowledge as part of halal certification literacy and propose a halal certification literacy index to measure the readiness of micro and small enterprises. Knowledge is especially important in the self-declare scheme because business owners must be able to identify ingredients, show that they come from halal sources, explain the production process, and prepare business legality documents.

MSME participation refers to business owners' actual involvement in the free halal certification program. The self-declare process includes registration and application through BPJPH's halal information system, verification and validation by Halal Product Process Facilitators (P3H), determination of halal status by the Halal Product Fatwa Committee, and issuance of the certificate by BPJPH (Minister of Religious Affairs Regulation No. 20 of 2021). Participation is therefore measured through willingness to register, involvement in socialization, completeness of documents, involvement in verification, and success in obtaining the certificate. Participation is influenced by perceived benefits and business competitiveness (Mahendra et al., 2024), but it can also be hindered by administrative constraints such as not yet having a Business Identification Number (Abdullah et al., 2024).

Hypothesis Development

In the innovation-decision process model, the first stage before a person adopts an innovation is the knowledge stage, in which the individual learns of the innovation's existence and understands how it works (Rogers, 2003). Halal outreach serves to bring about this stage by introducing the obligations, benefits, and procedures of certification. Ramadan et al. (2026) showed that direct education and assistance improve business owners' understanding of halal assurance and certification stages, consistent with Pujiyanto and Setyorini (2024). The first hypothesis is therefore formulated as follows.

H1: Halal outreach has a positive effect on MSME knowledge.

Knowledge of procedures, organizing institutions, and required documents strengthens perceived behavioral control, namely the belief that halal certification can be accomplished (Ajzen, 1991). Noorazlina et al. (2026) demonstrated that knowledge positively affects micro and small enterprises' intention to participate in the free halal certification program, while Tuhuteru and Iqbal (2024) found that knowledge is the most dominant factor in MSME readiness. Conversely, a lack of knowledge is the main cause of low halal certification (Siagian et al., 2024).

H2: MSME knowledge has a positive effect on MSME participation.

Outreach can also be viewed as a stimulus that directly prompts business owners to act, for example when counselors invite participants to register or facilitate registration on the spot. Windusari (2025) showed that Islamic religious counselors act not only as educators but also as facilitators and motivators. However, one-way and formal education is not enough to change behavior without follow-up communication (Arsyad & Ritonga, 2025), so this direct effect needs to be tested empirically.

H3: Halal outreach has a direct effect on MSME participation.

If outreach affects knowledge and knowledge affects participation, the effect of outreach on participation may be channeled through knowledge. In mediation analysis, this occurs when the indirect effect is significant, regardless of whether the direct effect is significant (Zhao et al., 2010). Similar intervening patterns have been reported for knowledge and halal certification intention (Widigdo & Triyanto, 2024), for product halalness and consumer satisfaction through trust (Ali et al., 2025), for the intention to adopt Islamic financial products through trust (Putri et al., 2024), and for knowledge and customer loyalty through interest (Meilany et al., 2025). The conceptual framework of the study is presented in Figure 1.

H4: MSME knowledge mediates the effect of halal outreach on MSME participation.

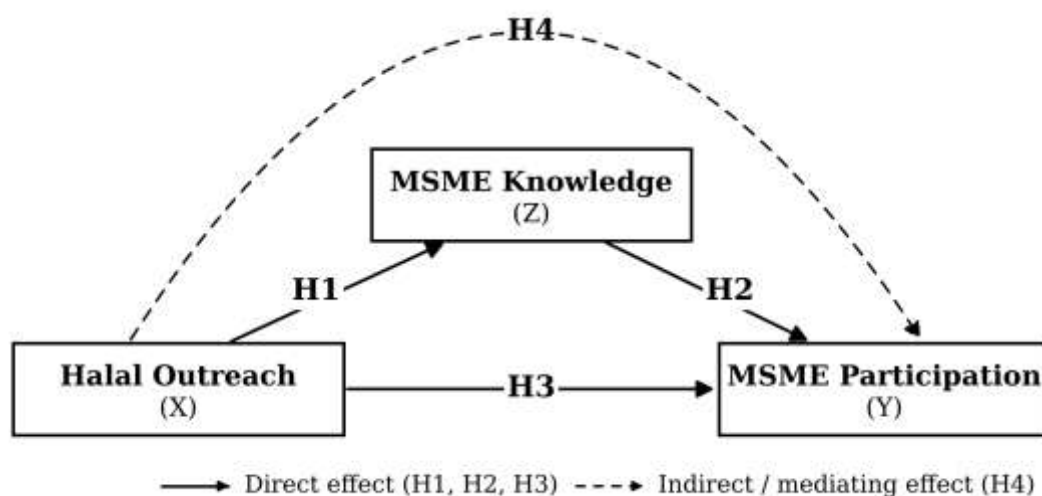


Figure 1: Conceptual Framework

RESEARCH METHOD

This study used a quantitative approach with an associative-causal design to test direct and indirect effects among variables. The analysis employed PLS-SEM because the method suits predictive models with mediation paths, relatively small samples, and data that do not meet multivariate normality assumptions (Hair et al., 2014, 2021). The study was conducted in the service area of the KUA of Malili District, East Luwu Regency,

South Sulawesi, with MSME owners in Puncak Indah Village and Malili Sub-district as respondents. Data were collected from 27 September to 29 October 2025.

The population consisted of MSME owners who had attended halal outreach conducted by the KUA of Malili. The sample was selected through *purposive* sampling (Etikan et al., 2016) based on the following criteria: (1) owners or managers of MSMEs who had attended the KUA of Malili's halal outreach, and (2) had a basic understanding of the halal certification process or an intention to pursue it. The sample size was set at 80 respondents, exceeding the minimum of 50 respondents based on the rule of ten times the largest number of indicators of a construct (Hair et al., 2021).

Data were collected through a closed questionnaire consisting of a screening question, respondent identity, and 15 statements on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The questionnaire was distributed in *mixed mode*, online via Google Forms and face to face at business locations, to reduce coverage error among respondents with limited access to technology (Dillman et al., 2014). All 80 questionnaires were complete, with no missing data and no scores outside the scale range. The operational definitions and indicators of the variables are presented in Table 1.

Table 1: Operational Definitions and Indicators of Variables

Variable	Operational Definition	Indicators (Code)
Halal Outreach (X)	The KUA's efforts to provide information and education to MSMEs regarding halal certification	Outreach frequency (PH1); material relevance (PH2); clarity of delivery (PH3); methods/media (PH4); accessibility of outreach (PH5)
MSME Knowledge (Z)	The level of MSMEs' understanding of halal certification concepts and procedures	Halal/haram concepts (PEU1); certification benefits (PEU2); certification procedures (PEU3); organizing institutions (PEU4); required documents (PEU5)
MSME Participation (Y)	The level of MSMEs' involvement in the free halal certification program	Willingness to register (PAU1); involvement in socialization (PAU2); completeness of documents (PAU3); verification process (PAU4); success in obtaining the certificate (PAU5)

Source: *Processed primary data (2025)*

The PLS-SEM analysis was conducted in two stages using the PLS algorithm with a path weighting scheme and mode A (reflective). The first stage evaluated the



measurement model (*outer model*): convergent validity was assessed through *outer loadings* (ideally ≥ 0.70 ; 0.40–0.70 may be retained if construct reliability is adequate) and *Average Variance Extracted* ($AVE \geq 0.50$); reliability through *Composite Reliability* and *Cronbach's Alpha* (≥ 0.70) (Hair et al., 2021); and discriminant validity through the Fornell-Larcker criterion (Fornell & Larcker, 1981) and the *Heterotrait-Monotrait Ratio* ($HTMT < 0.90$) (Henseler et al., 2015). The second stage evaluated the structural model (*inner model*) through the coefficient of determination R^2 (0.67 substantial; 0.33 moderate; 0.19 weak) (Chin, 1998), *effect size* f^2 (0.02 small; 0.15 medium; 0.35 large) (Cohen, 1988), predictive relevance Q^2 , and collinearity ($VIF < 5$). The significance of path coefficients and indirect effects was tested using *bootstrapping* with 500 subsamples ($t \geq 1.96$; $p \leq 0.05$). The type of mediation was determined following the classification of Zhao et al. (2010) and complemented by the *Variance Accounted For* (VAF).

RESULTS AND DISCUSSION

Respondent Characteristics

The profile of the 80 respondents is presented in Table 2. Most respondents were women (58.8%) and fell within the productive age range of 26–55 years (84.9%). The most common business type was food/beverages (38.8%), the category most strictly regulated under halal product assurance. Most businesses were micro-scale with 1–5 employees (82.4%) and had operated for less than six years (80.0%). These characteristics indicate a predominance of early-to-middle-stage MSMEs, which generally have limited human resources and formal knowledge of regulations (Effendi, 2022), making external outreach such as that provided by the KUA crucial.

Table 2: Respondent Characteristics (n = 80)

Characteristic	Category	n	%
Gender	Female	47	58.8
	Male	33	41.2
Age	≤ 25 years	9	11.2
	26–35 years	22	27.5
	36–45 years	21	26.2
	46–55 years	25	31.2
	> 55 years	3	3.8
Business type	Food/beverages	31	38.8
	Home-based culinary	17	21.2
	Processed products	17	21.2

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Characteristic	Category	n	%
	Food stall/restaurant	15	18.8
Years in business	< 1 year	15	18.8
	1–3 years	32	40.0
	4–6 years	17	21.2
	> 6 years	16	20.0
Number of employees	1–2 persons	33	41.2
	3–5 persons	33	41.2
	6–10 persons	12	15.0
	> 10 persons	2	2.5

Source: Processed primary data (2025)

Descriptive Statistics

Table 3 presents the mean scores at the construct and indicator levels, categorized using the Respondent Achievement Level (TCR) with a class interval of 0.80. All three constructs fall into the high category, with MSME knowledge (3.735) slightly above halal outreach (3.715), and MSME participation (3.540) the lowest. This pattern provides an early signal that outreach tends to be absorbed as knowledge but does not automatically convert fully into participatory action.

Table 3: Descriptive Statistics of Constructs and Indicators

Code	Construct/Indicator	Mean	SD	Category
X	Halal Outreach	3.715	0.526	High
PH1	Outreach frequency	3.675	0.708	High
PH2	Material relevance	3.763	0.783	High
PH3	Clarity of delivery	3.688	0.836	High
PH4	Outreach methods/media	3.863	0.910	High
PH5	Accessibility of outreach	3.588	0.741	High
Z	MSME Knowledge	3.735	0.532	High
PEU1	Understanding of halal/haram concepts	3.788	0.807	High

Code	Construct/Indicator	Mean	SD	Category
PEU2	Understanding of certification benefits	3.825	0.759	High
PEU3	Understanding of certification procedures	3.788	0.774	High
PEU4	Understanding of organizing institutions	3.700	0.818	High
PEU5	Understanding of required documents	3.575	0.759	High
Y	MSME Participation	3.540	0.447	High
PAU1	Willingness to register	3.638	0.661	High
PAU2	Involvement in socialization	3.613	0.934	High
PAU3	Completeness of application documents	3.550	0.794	High
PAU4	Involvement in the verification process	3.613	0.834	High
PAU5	Success in obtaining the certificate	3.288	0.750	Moderate

TCR categories: 1.00–1.80 very low; 1.81–2.60 low; 2.61–3.40 moderate; 3.41–4.20 high; 4.21–5.00 very high. Source: Processed primary data (2025)

At the indicator level, outreach methods/media (PH4 = 3.863) obtained the highest score for the outreach variable, while accessibility of outreach (PH5 = 3.588) was the lowest. For the knowledge variable, MSMEs understood the benefits of certification (PEU2 = 3.825) better than the required documents (PEU5 = 3.575); in other words, they understood why certification matters better than how to meet its requirements. The most notable finding concerns the participation variable: success in obtaining the certificate (PAU5 = 3.288) was the only indicator in the moderate category. This shows that the willingness to start the process is much higher than the success in completing it until the certificate is issued.

Measurement Model Evaluation (*Outer Model*)

The convergent validity results are presented in Table 4. Indicators of the halal outreach and MSME knowledge constructs had *outer loadings* of 0.604–0.727 and were all significant ($p < 0.01$), so they could be retained even though some did not reach the ideal value of 0.70 (Hair et al., 2021). For the MSME participation construct, three indicators, namely willingness to register (PAU1), completeness of documents (PAU3), and the verification process (PAU4), had loadings below 0.50 and were not significant.

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This is likely because these indicators describe sequential administrative stages, so responses are also influenced by factors outside the model, such as the speed of bureaucratic services.

Table 4: Convergent Validity Results (Outer Loadings)

Construct	Code	Loading	t-statistic	p-value	Remarks
Halal Outreach (X)	PH1	0.727	4.072	0.000	Valid
	PH2	0.617	3.168	0.002	Valid
	PH3	0.604	3.012	0.004	Valid
	PH4	0.651	3.589	0.001	Valid
	PH5	0.694	4.127	0.000	Valid
MSME Knowledge (Z)	PEU1	0.710	5.609	0.000	Valid
	PEU2	0.646	4.111	0.000	Valid
	PEU3	0.719	5.307	0.000	Valid
	PEU4	0.666	4.202	0.000	Valid
	PEU5	0.633	4.536	0.000	Valid
MSME Participation (Y)	PAU1	0.456	1.868	0.066	Marginal
	PAU2	0.623	3.079	0.003	Valid
	PAU3	0.444	1.237	0.220	Not significant
	PAU4	0.464	1.414	0.161	Not significant
	PAU5	0.684	3.177	0.002	Valid

Source: PLS-SEM output, bootstrapping with 500 subsamples (2025)

The construct-level reliability and convergent validity results (Table 5) show that halal outreach and MSME knowledge have *Composite Reliability* above 0.70 (0.794 and 0.807), indicating good internal consistency. The AVE values of both constructs (0.436 and 0.456) are slightly below 0.50, which is commonly tolerated in new models as long as composite reliability is adequate. The MSME participation construct has an AVE of 0.295, a CR of 0.669, and a *Cronbach's Alpha* of 0.449, all below the thresholds. This indicates that participation in the context of Malili MSMEs is a complex construct that may be more appropriately modeled as formative.

Table 5: Construct Reliability and Convergent Validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
Halal Outreach (X)	0.679	0.794	0.436
MSME Knowledge (Z)	0.707	0.807	0.456
MSME Participation (Y)	0.449	0.669	0.295

Thresholds: Cronbach's Alpha and CR ≥ 0.70 ; AVE ≥ 0.50 . Source: PLS-SEM output (2025)

Discriminant validity was tested using two criteria (Table 6). Under the Fornell-Larcker criterion, the square root of each construct's AVE exceeds its correlations with the other constructs, although the margin for the participation construct is relatively narrow (0.543 versus 0.473). All HTMT values (0.461; 0.577; 0.721) are below the strict threshold of 0.85, so discriminant validity is established (Henseler et al., 2015). The knowledge-participation correlation (0.473), which is much stronger than the outreach-participation correlation (0.213), gives an early indication that the effect of outreach on participation flows mainly through knowledge.

Table 6: Discriminant Validity (Fornell-Larcker and HTMT)

Construct	X	Z	Y
Halal Outreach (X)	0.660	<i>0.461</i>	<i>0.577</i>
MSME Knowledge (Z)	0.336	0.675	<i>0.721</i>
MSME Participation (Y)	0.213	0.473	0.543

Diagonal (bold) = square root of AVE; below the diagonal = inter-construct correlations (Fornell-Larcker); above the diagonal (italics) = HTMT values. Source: PLS-SEM output (2025)

Structural Model Evaluation (*Inner Model*)

Table 7 shows that halal outreach explains 11.3% of the variance in MSME knowledge ($R^2 = 0.113$), while outreach and knowledge together explain 22.7% of the variance in MSME participation ($R^2 = 0.227$). Both values are weak, which is reasonable for a behavioral model with a single mediation path and a limited sample. Positive Q^2 values (0.033 and 0.059) indicate that the model has predictive relevance, and VIF values below 5 (1.000–1.128) indicate no collinearity problems. The paths from outreach to knowledge ($f^2 = 0.128$) and from knowledge to participation ($f^2 = 0.143$) make small-to-medium contributions, whereas the path from outreach to participation has a negative f^2 (-0.004), meaning it contributes nothing additional once knowledge is in the model.

Table 7: R^2 , Q^2 , f^2 , and VIF Values

Construct/Path	R^2	Q^2	f^2	VIF
MSME Knowledge (Z)	0.113	0.033	–	–
MSME Participation (Y)	0.227	0.059	–	–
Halal Outreach → MSME Knowledge	–	–	0.128	1.000
MSME Knowledge → MSME Participation	–	–	0.143	1.128
Halal Outreach → MSME Participation	–	–	–0.004	1.128

Source: PLS-SEM output (2025)

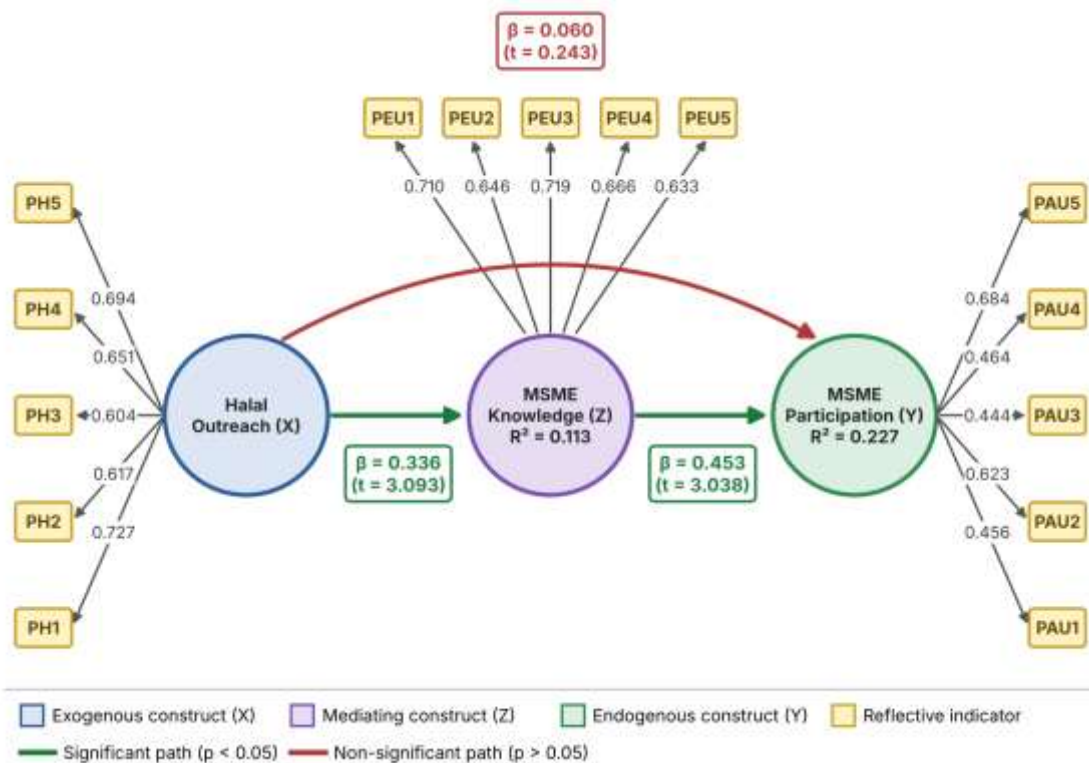


Figure 2: PLS-SEM Structural Model from Bootstrapping (n = 80; 500 Subsamples)

The hypothesis testing results are presented in Table 8 and Figure 2. Halal outreach has a positive and significant effect on MSME knowledge ($\beta = 0.336$; $t = 3.093$; $p = 0.003$), so H1 is accepted. MSME knowledge has a positive and significant effect on MSME participation ($\beta = 0.453$; $t = 3.038$; $p = 0.003$) and is the path with the largest coefficient in the model, so H2 is accepted. In contrast, the direct effect of halal outreach on participation is not significant ($\beta = 0.060$; $t = 0.243$; $p = 0.809$), with a confidence

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interval that includes zero, so H3 is rejected. The indirect effect of outreach on participation through knowledge, at 0.152, is significant ($t = 2.012$; $p = 0.048$), with a 95% confidence interval that excludes zero, so H4 is accepted. Because the indirect effect is significant while the direct effect is not, this pattern is classified as full or *indirect-only mediation* (Zhao et al., 2010), with a VAF of 71.6%.

Table 8: Hypothesis Testing Results

Hypothesis	Path	β	SE	t	p	95% CI	Decision
H1	$X \rightarrow Z$	0.336	0.109	3.093	0.003	[0.154; 0.562]	Accepted
H2	$Z \rightarrow Y$	0.453	0.149	3.038	0.003	[0.051; 0.660]	Accepted
H3	$X \rightarrow Y$	0.060	0.249	0.243	0.809	[-0.519; 0.513]	Rejected
H4	$X \rightarrow Z \rightarrow Y$	0.152	0.076	2.012	0.048	[0.0002; 0.318]	Accepted (full mediation)

X = Halal Outreach; Z = MSME Knowledge; Y = MSME Participation. Total effect $X \rightarrow Y = 0.213$; VAF = 71.6%. Significant at $\alpha = 0.05$ (two-tailed), bootstrapping with 500 subsamples. Source: PLS-SEM output (2025)

The Effect of Halal Outreach on MSME Knowledge

The acceptance of H1 confirms that the KUA of Malili's outreach serves as a structured source of information that improves MSME owners' understanding of halal and haram concepts, certification benefits, procedures, organizing institutions, and documents. This finding is consistent with the knowledge stage in Rogers' (2003) innovation-decision model and with the TPB, which places information as the basis for forming attitudes and intentions (Ajzen, 1991). It also aligns with Ramadan et al. (2026) and Pujiyanto and Setyorini (2024), who showed that direct education improves business owners' understanding of halal certification. As an institution with religious legitimacy and cultural proximity, the KUA serves as a credible change agent, in line with the finding that the presence of figures trusted by the community strengthens halal certification education (Arsyad & Ritonga, 2025).

Nevertheless, an R^2 of 0.113 indicates that outreach is a contributing factor rather than the sole determinant of knowledge; most of the variance in knowledge is explained by other factors such as business experience, education, or exposure to information from other sources. The low score for accessibility of outreach (3.588) also indicates that the



reach of activities needs to be expanded. Consequently, increasing the frequency of outreach will not be optimal without improving the quality of materials and methods in ways that suit the micro-scale food and beverage businesses that dominate Malili (Abdullah et al., 2024).

The Effect of MSME Knowledge on MSME Participation

The acceptance of H2, with the largest coefficient in the model, shows that knowledge is the main driver of MSMEs' actual engagement in the free halal certification program. The better business owners understand the benefits, procedures, and requirements of certification, the more likely they are to register, take part in socialization, complete documents, and finish verification. This finding supports Noorazlina et al. (2026), who found that knowledge affects the intention to join the Sehat program, and Tuhuteru and Iqbal (2024), who identified knowledge as the most dominant factor in MSME readiness. Within the TPB framework, procedural knowledge strengthens perceived behavioral control, so business owners feel capable of pursuing certification (Ajzen, 1991).

However, the low scores for success in obtaining the certificate (3.288) and understanding of documents (3.575) show that knowledge is a prerequisite for, not a guarantee of, successful participation. Administrative obstacles beyond individual control can still stall completion of the process, as also identified by Siagian et al. (2024) and Abdullah et al. (2024). Investing in the quality of knowledge transfer, especially on procedures and documents, will therefore have a greater impact on participation than simply adding more activities. Such capacity building is also consistent with the finding that a quality-oriented entrepreneurial culture positively affects MSME performance (Fasiha et al., 2024).

The Direct Effect of Halal Outreach on MSME Participation

The rejection of H3 shows that attending outreach alone does not lead MSMEs to register for and complete halal certification. The high outreach score (3.715) indicates that MSMEs in Malili do not lack exposure to outreach activities, but this exposure is insufficient to change behavior unless it is first internalized as knowledge. The negative f^2 reinforces the conclusion that the entire effect of outreach on participation is absorbed by the knowledge path. This finding is consistent with Makiah et al. (2026), who showed that Sehat achievement can remain below target even after procedures were simplified, and with Arsyad and Ritonga (2025), who stated that one-way education is not enough to change business owners' behavior.

This finding has important consequences for program evaluation. Outreach measured only by the number of participants or the frequency of activities risks appearing

active in quantity while being ineffective in encouraging participation. If a study tested only the direct relationship, it could wrongly conclude that outreach is ineffective, when in fact its effect works through the knowledge path. Knowledge improvement should therefore be set as an *intermediate outcome* before assessing the impact of outreach on participation.

The Mediating Role of MSME Knowledge

The acceptance of H4 is the central finding of this study. The combination of a significant indirect effect (0.152) and a non-significant direct effect firmly places the model in the full mediation category (Zhao et al., 2010). This means that MSME knowledge is not merely a reinforcer but the only path that statistically links outreach to participation. This pattern is consistent with Widigdo and Triyanto (2024), who found that knowledge affects halal certification intention through an intervening variable, and with a study in Palopo City showing that product halalness affects consumer satisfaction through trust (Ali et al., 2025). Theoretically, this finding supports Rogers' (2003) model, in which the knowledge stage must be passed before decision and implementation.

This finding also has a parallel in the Islamic scholarly tradition, which places knowledge as a prerequisite for action. Imam al-Bukhārī devoted a chapter in his *Ṣaḥīḥ* to “knowledge before speech and action” (*al-‘ilm qabl al-qawl wa al-‘amal*) (al-Bukhārī, n.d.). The Qur’an likewise commands people to ask those who have knowledge when they do not know (QS al-Naḥl/16: 43) (Ministry of Religious Affairs of the Republic of Indonesia, 2019). KUA counselors act as the party with knowledge, but this relationship becomes meaningful only when knowledge is actually transferred and understood. From the perspective of *maqāṣid al-sharī‘ah*, participation in halal certification contributes to the preservation of religion and wealth (al-Shāṭibī, 1997): it protects consumers from doubtful or forbidden products while developing businesses through consumer trust and wider market access.

Research Implications

Theoretically, this study reinforces the view that knowledge is the key mechanism linking educational interventions to behavior, and it extends the application of the TPB by positioning procedural knowledge as a source of perceived behavioral control in the context of halal certification. The weak convergent validity of the participation construct also offers a methodological insight: participation consisting of sequential stages does not always move together as a reflective model assumes.

Practically, the KUA's measure of outreach success should shift from the number of activities or participants to measurable knowledge gains, for example through brief *pre-tests* and *post-tests* in every session. Materials should place greater emphasis on



procedures and documents through sample files, form-filling simulations, and hands-on registration assistance. For BPJPH, the Ministry of Religious Affairs, and local governments, integrating KUA outreach with assistance from halal product process facilitators (P3H) could accelerate the conversion of knowledge into participation. This need is all the more urgent given the 17 October 2026 deadline for mandatory halal certification of food and beverage products from micro and small enterprises (Government Regulation No. 42 of 2024).

CONCLUSION

This study concludes that halal outreach by the KUA of Malili has a positive and significant effect on MSME knowledge, and that MSME knowledge has a positive and significant effect on participation in the free halal certification program. In contrast, halal outreach has no direct effect on participation. MSME knowledge fully mediates the effect of halal outreach on participation, so the effect of outreach on MSME participation in Malili District is channeled only through improved knowledge. MSME owners generally understand why halal certification matters but do not yet sufficiently understand how to meet its requirements until the certificate is issued.

The KUA is advised to adopt participants' knowledge gains as the measure of outreach success, add practical sessions on preparing documents, extend outreach to villages and business locations, and develop materials suited to micro-scale food and beverage businesses. BPJPH and local governments should provide follow-up assistance until certificates are issued and monitor the status of every outreach participant together with the KUA.

This study has several limitations. First, the MSME participation construct shows convergent validity and reliability below the thresholds, so results involving this construct should be interpreted with caution. Second, the weak R^2 values and the *cross-sectional* design limit the strength of causal claims. Third, the study covers only one district dominated by micro-scale food businesses. Future research should remodel participation as a formative construct or refine its indicators, expand the study area and sample size, add other variables such as religiosity, cost perception, and facilitator support, and adopt a longitudinal design.

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