

Effect of SME Food Entrepreneurs Knowledge on Halal Certification for Certified Awareness Using Partial Least Square

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ABSTRACT

This study aims to predict the impact of the understanding of halal certification by Small Medium Enterprise (SME) entrepreneurs on the intention to conduct halal certification. This study was conducted in the Cooperative and SME Office of Surakarta City. The Halal Certification Comprehension Rate was assessed using three variables. We used knowledge of halal (PGT), perceived halal certification advantages (MNF), and perceived halal certification procedures (PROS). Structural Equation Model-Partial Least Squares (SEM-PLS) was used for data analysis. The results show that SMEs have a good knowledge of halal and agree that halal certification is beneficial to their businesses. We found, though, that the processes for handling Halal Certification are relatively complex. Based on the study, the perception of Halal Certification Benefits (MNF) is significantly affected by the intention of SMEs to conduct Halal Certification (NHL). The other two results show a positive correlation. However, they are not statistically significant.



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1. Introduction

Food is a fundamental human need. In the food field, Hexa Research estimated that the global halal food demand for 2024 had crossed US\$ 2.55 trillion [1]. Indonesia is a country with the largest Muslim population in the world. The potential of the Halal Food Product Market is significant and provides opportunities for small and medium-sized enterprises (SME). However, several small and medium-sized owners did not care about the halal status of food products made. In the Central Java province of Indonesia, 0.01% or 494 small and medium-sized enterprises (SMEs) have been granted Halal Certification. The percentage of SMEs that have never received a Halal Certificate is 3.92 percent [2]. Entrepreneurs assume that food products already use healthy and halal



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ingredients. They believe that they do not need to take care of halal certification. Therefore, It is essential to know the factors that influence the awareness/intention of SMEs to carry out Halal Certification on their products.

Based on previous studies, research limited the knowledge of halal certification from the SME point of view. [Aziz and Chok \[3\]](#) and [Haque, et al. \[4\]](#) described factors that influence the willingness of non-Muslim customers to buy halal food products. [Aziz and Chok \[3\]](#) explored the interaction between halal recognition; halal labeling certification labels food quality and promotional activities. It also discussed the need for non-Muslim buyers in Malaysia to purchase halal goods. [Haque, et al. \[4\]](#) described the factors that influence perceptions of Malaysian non-Muslim customers in purchasing halal food products using the Theory of Planned Behavior framework. [Golnaz, et al. \[5\]](#) and [Rezai, et al. \[6\]](#) investigated the perceptions of non-Muslim customers in Klang Valley, Malaysia, of halal food products. [Mathew \[7\]](#) and [Ismail and Nasiruddin \[8\]](#) measured the level of acceptance of Malaysian non-Muslim consumers of halal food. Furthermore, [Wibowo and Ahmad \[9\]](#) developed a conceptual model of the acceptance non-Muslim customers in Malaysia of halal food products.

[Azmi, et al. \[10\]](#) established factors that affect the implementation of halal standards in the industry. [Zailani, et al. \[11\]](#) investigated the motivating factors which affect the implementation of halal strategies by industry. [Maryati, et al. \[12\]](#) and [Prabowo, et al. \[13\]](#) investigated the restriction factors in the implementation of halal criteria. [Kusumastuti and Rachmawati \[14\]](#) analyzed small and medium-sized enterprises' knowledge of halal certification and established the driving factors and challenges facing them. [Siaw and Rani \[15\]](#) also stated that the introduction of Halal Compliance Regulations is the biggest challenge for small and medium-sized businesses. Furthermore, [Ab Talib \[16\]](#) claimed that there are two motivating factors internal motivation and external motivation. [Ab Talib, et al. \[17\]](#) indicated that three external factors, like consumer demand, competitor pressure, and intimidation, affect the introduction of halal certification of food products. [Waluyo \[18\]](#) analyzed the factors that support halal certification in food producers companies.

Based on previous studies, it concluded that the driving factor for halal certification is the benefits of halal certification. In addition, there are external factors from the market, customers, competitors, and policy competencies. Constraint considerations include prices, certification processes, lack of information and socialization, managerial commitment, and issues related to SME competencies. No study studies the awareness/intention of SME entrepreneurs to carry out halal certification. This study explored the factors that encourage entrepreneurs to carry out Halal Certification. The selection of SMEs as the focus of this study, as SMEs dominate Indonesian food production. The results of this study are expected to design strategies for small and medium-sized enterprises to increase the level of SME Halal Food Certification. This article consists of four parts, as follows. The Introduction is described in Section 1. Section 2 contains the Research Methodology, which includes the identification of variables and indicators, the development of hypotheses and research models, data collection, and data analysis techniques. Section 3 explains the results and discussions. Section 4 contains the conclusions and further work.

2. Methods

2.1 Identification of Variables and Indicators

We used three factors to influence SME awareness and intention, such as Knowledge of halal (PGT), Perception of the Benefits of halal certification (MNF), and

perception of procedures of halal certification (PROS). The knowledge of halal variable (PGT) was defined as the level of knowledge of halal-related SMEs in the food production process. Based on research by Waluyo [18] and Rafiki and Wahab [19], we developed measurement items for Halal Variable Knowledge (PGT). Variable perception of benefits (MNF) was described as an understanding by SMEs of the benefits to be obtained from the presence of halal labels on their products [16, 20, 21]. The variable perception of the Halal Certification Procedure (PROS) is the awareness of SME towards the stage to receive Halal Certification from the Indonesian Council of Ulama (LPPOM-MUI) [20] [22]. The Intention Halal Certification (NHL) variable measures the level of awareness or the extent to which SME entrepreneurs want to meet Halal standards during the production process [18, 20, 22]. Measurement indicators for each factor in the study are shown in Table 1.

Table 1. Research variables and measurement indicators

Variable	Indicator	Measurement item	Reference
Knowledge (PGT)	PGT1	Equipment for the production of processed halal food/drink must be separated from other equipment used for manufactured unclean food/drink	[18] [19]
	PGT2	Products containing alcohol used in the production process are haram	
	PGT3	Products of pork fat used in the production process are haram	
Perception of Benefits (MNF)	MNF1	Halal certification encourages SMEs to produce high-quality food/drinks	[18] [20] [21]
	MNF2	Halal certification encourages producers to improve production processes	
	MNF3	Halal certification can be used as a consumer promotional tool	
Perception of Procedures (PROS)	PROS1	The process is relatively easy to carry out Halal Certification	[20] [22]
	PROS2	Handling with electronic halal certification (CEROL) helps small and medium-sized enterprises (SMEs)	
	PROS3	Time to take care of halal certification relatively quickly	
	PROS4	The cost of maintaining halal certification is low for SMEs	
Intention Halal Certification (NHL)	NHL1	I will register the products of SMEs to obtain halal certification	[20] [22]
	NHL2	Although I am sure Halal ingredients have been used, I still responsible for Halal Certification	
	NHL3	I must try to meet Halal quality standards in order to gain Halal certification.	

2.2 Models and Hypotheses

The framework of this research model is shown in Fig. 1. Waluyo [18] discussed that religion is the most critical factor in the awareness/intention of Halal Certification. The level of knowledge of Islam had a strong and significant impact on the

understanding of SMEs [19]. The variable of religious knowledge was calculated by measures of the general understanding of religion [18] [19]. Religious understanding factors focus on halal/haram understanding. Therefore, the first hypothesis in this study is as follows:

H1: The halal/haram knowledge levels have a positive effect on the intention/awareness of food SMEs to undertake halal certification

Halal/haram knowledge has a significant impact on awareness/intention to perform halal certification as a motivation to profit. Profit is the benefit of the existence of Halal Certification [21]. Several advantages of halal certification include increased sales, profits market share, labor productivity, number of employees, number of consumers, customer satisfaction, trust and loyalty, and export opportunities [21] [20]. In addition, halal certification was expected to increase the efficiency of the production process internally. Externally halal certification can promote the image and reputation of the organization in the eyes of consumers [16]. In this study, the motivation factor for profit was extended to include the perception of benefits related to halal certification. The second hypothesis developed in the study is as follows:

H2: The perception of SMEs of the benefits of halal certification has a positive effect on the intention/awareness of SME food entrepreneurs to perform halal certification.

Halal certification is a method for the obtaining of Halal certificates. Halal certification step by proving that the components, the manufacturing process, and the halal assurance program meet with the Indonesian Council of Ulama (LPPOM-MUI) requirements [23]. The Halal Certificate includes the certificate number and the date of validity of the certificate. Halal certificate is a prerequisite to receiving a Halal label license from LPPOM MUI on the labeling of the product. The halal certificate is valid for two years. Two months before the expiration date of the period of validity, the entrepreneur must re-register his product in order to obtain a new halal certificate. SME needs to go through many stages of the process. The stages of the halal certification cycle have been a limiting factor for some SME businessmen to implement halal certification [12] [13] [14]. The process of achieving halal certification is perceived to be complicated by the understanding of SME entrepreneurs. The complexity of halal procedures negatively and significantly affected producers to adopt halal [22]. The understanding of the halal certification phase was assessed in this analysis using positive indicators [20]. Therefore, the third theory, then, that was established in this study is:

H3: SMEs perceptions of ease of halal certification procedures have a positive impact on the intention/awareness of SME food entrepreneurs to conduct halal.

2.3 Data Collection

This study was conducted in Surakarta City, Central Java Province of Indonesia. The research focuses on food SME listed in the Surakarta City. The sampling technique used purposive sampling. Respondent's qualifications include leading food and beverage manager in SME that have not yet earned halal certificates from LPPOM-MUI. Surveyors visited to respondents to affirm respondents willing to participate in surveys. 110 respondents participated in this research. Moreover, just 98 questionnaires, in the data processing. The data collected in this study used questionnaires. Question items on the assessment measure used Likert scale from "1" to "5." The profiles of respondents and small and medium-sized businesses are shown in [Table 2](#) and [Table 3](#).

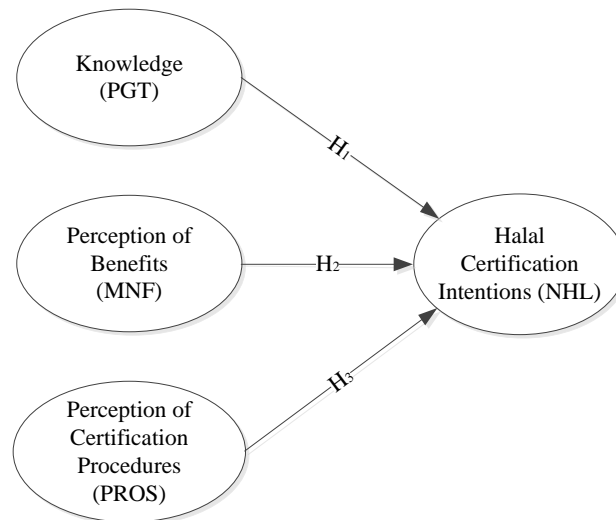


Fig. 1. Research model framework

Table 2. Profile of respondents

Indicator		Quantity	Percentage
Religion	Islam	78	79.59%
	Non-Islam	20	20.41%
Gender	Male	52	53.06%
	Female	46	46.94%
Age	< 25 years	1	1.02%
	25-34 years	12	12.24%
	35-44 years	25	25.51%
	45-54 years	44	44.90%
	55-64 years	13	13.27%
	> 65 years	3	3.06%
Education	Not completed in primary school	1	1.02%
	Primary School	12	12.24%
	Middle Schol	19	19.39%
	High School	48	48.98%
	Associate degree	5	5.10%
	Undergraduate	12	12.24%
	Postgraduate	0	0.00%
	Others	1	1.02%

2.4 Data Analysis Technique

Data analysis was carried out using a systematic approach, including concise statistical tools and an assessment of test models. Descriptive statistics were used to provide a description of the respondents' characteristics, the SME profile, the outcomes of knowledge-level assessment, interpretation of advantages, perceived convenience of halal certification, and the intention/awareness of halal certification. The research analysis was used to assess the model and to illustrate objectively the hypothesis presented in the report. The evaluation of the theoretical model was carried out using

the Structural Equation Model-Partial Least Square (SEM-PLS) method. SEM-PLS was used in this analysis, owing to the predictive aspect of the research. SEM-PLS is an effective analysis tool because it is accurate when analyzing data with a small sample size [24-27]. We used SPSS 24 and Smart-PLS 3.2.7 to assist the data processing.

Table 3. SME Profiles

Indicator		Quantity	Percentage
Business life	< 3 years	4	4.08%
	3-5 years	18	18.37%
	6-10 years	36	36.73%
	11-15 years	24	24.49%
	16-20 years	5	5.10%
	>20 years	11	11.22%
Source of capital	Equity of company	89	90.82%
	Cooperation	3	3.06%
	Loan	6	6.12%
Home industry product license	Available	27	27.55%
	Not available	71	72.45%

3. Results and Discussion

3.1 Descriptive Statistics of Research Variables

Table 4 shows Descriptive statistics for each measurement indicator. The Knowledge (PGT) had a high average perception value.

Table 4. Descriptive statistics measurement indicators

Indicator	Minimum	Maximum	Mean	Total mean	Deviation Standard
PGT1	3.000	5.000	4.398	4.422	0.532
PGT2	2.000	5.000	4.398		0.587
PGT3	3.000	5.000	4.469		0.541
MNF1	3.000	5.000	4.061	4.058	0.426
MNF2	3.000	5.000	4.082		0.423
MNF3	3.000	5.000	4.031		0.442
PROS1	1.000	5.000	3.296	3.319	0.707
PROS2	2.000	5.000	3.286		0.658
PROS3	1.000	5.000	3.265		0.794
PROS4	2.000	5.000	3.429		0.642
NHL1	2.000	5.000	3.980	3.983	0.517
NHL2	2.000	5.000	4.000		0.497
NHL3	2.000	5.000	3.969		0.649

3.2 Evaluation of Measurement Model

Alpha Cronbach assessed the reliability test. It was the most commonly used tool for evaluating internal consistency [25]. The acceptance limit for the Cronbach Alpha value was > 0.70. Table 5 indicates that the Cronbach Alpha value for all variables reached the acceptance value (0.70). The loading factor value for confirmatory research was > 0.70, while the loading factor value of 0.50 was still acceptable for exploratory



research [25]. The loading factor of all indicators in Table 5 was between 0.742-0.964. This value means that the construct meets the requirements for construct validity. The t-statistics and p-statistics in Table 5 indicate that all measurement factors are important for the measurement of the model. The Convergence Validity Evaluation was evaluated by comparison to Composite Reliability (CR) and Average Variance Extracted (AVE) [25]. The acceptance level for the CR value is more than 0.70, and the acceptance limit for the AVE value is 0.50 [25]. Table 5 indicates that the CR and AVE values for all factors reached the approval value. It showed that the questionnaire met the requirements for convergent validity. The results of the discriminant validity are shown in Table 6 and Table 7.

Table 5. Reliability and validity

Variable	Indicator	Loading factor	T-value	P-value	CR	AVE	Alpha Cronbach
PGT	PGT1	0.953	5.466	0.000	0.930	0.815	0.900
	PGT2	0.836	4.179	0.000			
	PGT3	0.916	5.474	0.000			
MNF	MNF1	0.799	9.508	0.000	0.857	0.667	0.752
	MNF2	0.808	11.070	0.000			
	MNF3	0.843	12.307	0.000			
PROS	PROS1	0.964	3.680	0.000	0.924	0.754	0.917
	PROS2	0.806	3.976	0.000			
	PROS3	0.942	4.003	0.000			
	PROS4	0.742	3.499	0.001			
NHL	NHL1	0.936	38.829	0.000	0.934	0.826	0.895
	NHL2	0.943	48.374	0.000			
	NHL3	0.843	16.726	0.000			

Table 6. Cross loading

	PGT	MNF	PROS	NHL
PGT1	0.953	0.284	0.093	0.298
PGT2	0.836	0.239	-0.009	0.102
PGT3	0.916	0.238	0.108	0.155
MNF1	0.168	0.799	0.130	0.245
MNF2	0.324	0.808	0.003	0.290
MNF3	0.200	0.843	0.072	0.313
PROS1	0.109	0.068	0.964	0.179
PROS2	0.228	0.080	0.806	0.043
PROS3	0.012	0.070	0.942	0.143
PROS4	0.165	-0.020	0.742	-0.020
NHL1	0.251	0.337	0.173	0.936
NHL2	0.233	0.356	0.132	0.943
NHL3	0.160	0.241	0.153	0.843

Table 7. Discriminant validity construct

	PGT	MNF	PROS	NHL
PGT	0.903			
MNF	0.285	0.817		
PROS	0.085	0.080	0.869	
NHL	0.241	0.348	0.167	0.909

3.3 Hypothesis Testing on Structural Models

Table 8 shows the summary of the test hypotheses of the relationship between the independent variables and the dependent variable. The independent variables in this study were halal knowledge (PGT), perception of halal certification benefits (MNF), and knowledge of halal certification procedures (PROS). Awareness/intention to carry out Halal Certification (NHL) was a dependent variable. Therefore, only one theory, the H2 hypothesis, was statistically confirmed. The perception of benefits of halal certification (MNF) had a strong and significant impact on the awareness/intention of SME entrepreneurs to carry out halal certification. Fig. 2 shows the structural model in the SMART-PLS. The structural model produced a coefficient of determination (R^2) of 0.160. This value indicated the variance of the variables NHL was described by three independent variables PGT, MNF, and PROS, by 16 percent. Hence, result, 84% of the variance in the halal certification awareness variable was not explained in the structural model formed in this study.

3.4 Discussion

The findings of the Descriptive Statistics at Knowledge Level (PGT) in Table 4 indicate that the SME respondents have a good knowledge of halal. However, based on the results of the H1 hypothesis, knowledge of halal (PGT) does not have a significant impact on the intention/awareness to conduct halal certification (NHL). The findings of this study were different from the reports of the study by Waluyo [18]. That research was shown that religious knowledge has a significant impact on the awareness of food producers to carry out halal certification. Simanjuntak and Dewantara [28] found that knowledge of halal labels on food packaging did not have a significant impact on consumer behavior. The impact of knowledge (PGT) on the intention to carry out Halal Certification (NHL) is not significant due to two factors. First, there are different respondents between this study and the research by Waluyo [18]. Respondent's research focused on food producers from SMEs. Second, knowledge factors might not affect intention/awareness directly but through mediator variables, such as attitude.

The assessment of the variable perception of Halal Certification Benefits (MNF) shows that SME entrepreneurs generally agree that Halal Food Certification provides benefits. The results were consistent with the results of previous studies, which concluded that SME entrepreneurs had a positive perception of halal certification [20]. Positive perceptions of benefits (MNF) have been shown to affect the intent/awareness of halal certification (NHL) SME entrepreneurs. The results of the H2-hypothesis test confirmed the findings Waluyo [18]. The study concluded that the motivation to make profits encourages producers to carry out Halal Certification. However, the results of this study contradicted the results of studies by Ardial [29].

Lack of socialization was a factor in the lack of understanding between respondents regarding halal certification procedures (PROS). Respondents considered

that the procedure for handling halal certification was relatively complex. The results of the H3 hypothesis test indicated the perception of the ease of the halal certification process (PROS). It does not have a significant impact on the Awareness of Halal Certification (NHL) [12-14, 30]. The Government has provided free Halal Certification Facilitation services to SMEs. However, the system was only provided to register Halal Certification, while the extension phase had to be followed separately the low level of recognition of halal certification was not only faced by SMEs in Indonesia. The level of awareness of halal certification among Malaysian SMEs also considered being still low [31]. However, the performance of SMEs was expected to increase by halal certification [32] [33].

Table 8. Hypothesis test results

Hypothesis	Coefficient	T-value	P-value	Conclusion
H ₁ PGT --> NHL	0.145	1.366	0.173	Not significant
H ₂ MNF --> NHL	0.297	3.135	0.002	Significant
H ₃ PROS --> NHL	0.131	0.855	0.393	Not significant

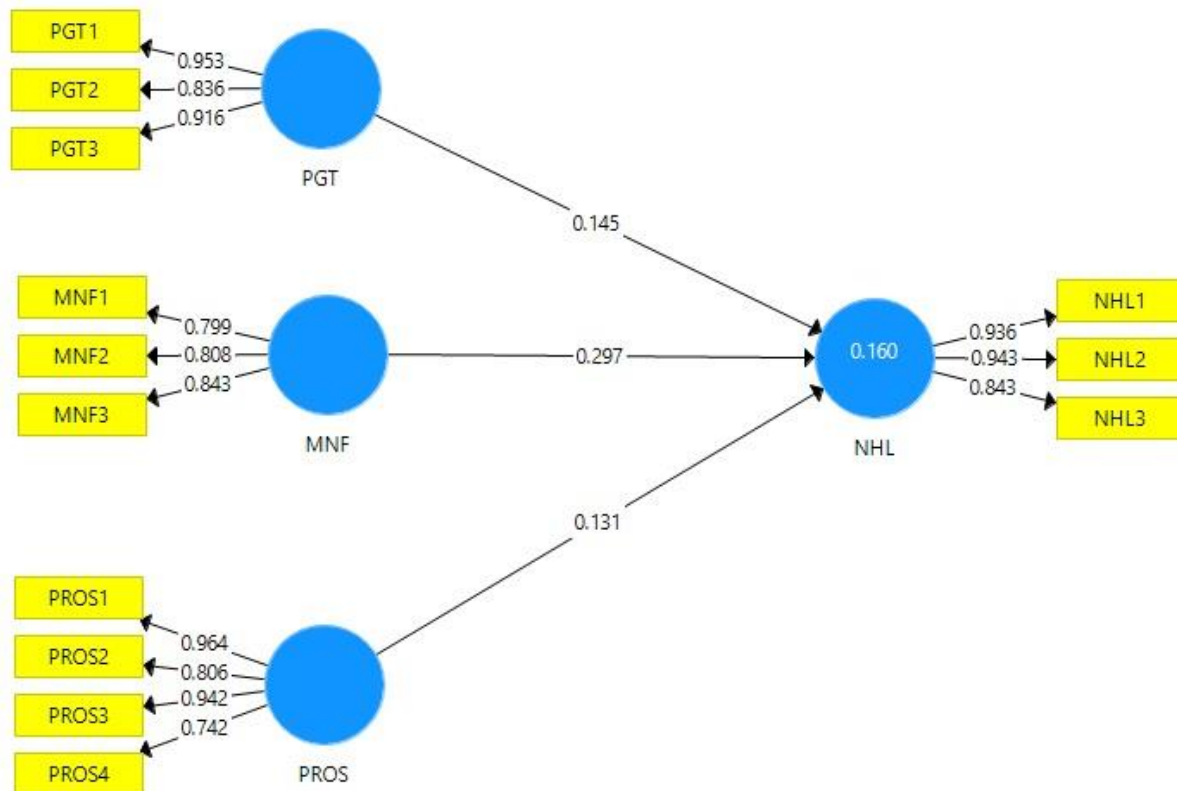


Fig. 2. Structural Model

4. Conclusion

The results of the halal/haram evaluation indicate that the SME food business in Surakarta has good knowledge of halal/haram. The benefits of halal certification indicated that halal food product certification provides several benefits for SMEs. Three hypotheses have a positive correlation. However, only the H2 hypothesis had a positive effect on the awareness/intention of halal certification. It indicated that the perception of SMEs does not have an impact on real actions to take care of halal certification. Further

research may be undertaken to identify other factors that influence the awareness/intention of halal certification by including moderate, intermediate variables. Another research gap was the identification of critical factors that influence the success of SMEs in obtaining Halal Certificates.

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