Prioritizing important factors for the successful of halal food standard practice in Small Medium Enterprises

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Abstract. The purpose of this research is to prioritize the factors that is important for the successful of halal food standard practice in food manufacturing small medium enterprises (SMEs). This study employed a non-probability convenience sampling method for collecting data. The main instrument for data collection is using a structured questionnaire. The respondents of this research is halal certified SMEs in Solo Raya. A partial least square structural equation model (SEM-PLS) was applied to test the proposed structural model. Subsequently, the importance-performance map analysis (IPMA) was performed to prioritize the critical success factors that need special attention by SMEs’ managers intending to adopt halal standard in their daily food production. Finding of this research revealed that employee involvement has a positive and significance impact to the halal food standard practices in food SMEs. Another factors, namely management support and customer focus have also a positive impact but not statistically significant. Findings from IPMA indicate that SMEs should focus on the employee involvement. The findings of this study are beneficial not only for SME’s manager but also for government institution responsible to the development of SMEs.

1. Introduction

As the country with the largest Muslim population in the world, Indonesia becomes a potential market for halal products. However, this potential market is not proportional to the number of halal-certified products, especially food products produced by Small and Medium Enterprises (SMEs). Referring to the Assessment Institute for Foods, Drugs, and Cosmetics-Indonesian Council of Ulama (LPPO-M-MUI), there are only about 10% of SMEs whose products have been halal certified. There are at least two reasons that cause the low rate of halal certification among SMEs. The first reason is about knowledge regarding halal assurance system [1]. Most SMEs assume that the food they produce have used safe and halal materials so that they do not care about the halal standard practices as mentioned in HAS 23000. The second reason is about the obstacles. As a small business entities, SMEs in Indonesia face several challenges to fully implement halal food standard [2,3]. Whereas, since October 2019 the Indonesian government has enacted the Law Number 33 of 2014 regarding Halal Product Assurances. According to the law, all products circulating and traded in Indonesia, including SME products, must be halal-certified. To fulfill the mandate of the Act, it is necessary to know the important factors for the successful of halal food standards practices among SMEs. These factors can be used as guidance for SME’s managers in adopting halal food standard in their food production. In addition, the results
of this research can be used by the government institution responsible for the supervision of SME to design programs stimulating SMEs to implement halal standard.

Based on a literature study of several previous studies, research focuses on significant factors of halal food standard practices in SMEs is still limited. Din & Daud [4] have identified 11 critical success factors of the implementation of Malaysia Halal Food Standard based on literature review and expert opinion. Unfortunately, Din & Daud [4] did not focus their object of study on food SMEs. Research focusing on critical success factors of halal food standard practices in food SMEs has been done by Ahmad et.al [5]. Although the work of Ahmad et.al [5] provide empirical evidence based on interview to halal executives, consultant, and auditor, they failed to scrutinize which of critical success factors needing special attention. Therefore, the objective of this study is to prioritize the factors should be focus by SME’s manager in adopting halal standard practice. Understanding the priority can be useful for SMEs to focus their effort to enhance the successful implementation of halal standard.

2. Hypothesis development
In the case of halal food standard practice in SMEs, there are various factors for implementation. First, management support and employee involvement is believed to be one factor behind the successful implementation of halal food standard [4,5]. Second, customer focus regarding the need for halal products is also become the important factor to motivate SMEs to implement halal standard [4,5]. Besides customer focus, the successful of halal standard practice can also be affected by how well the relationship of SMEs to their supplier [4,5]. Figure 1 illustrates the conceptual framework of this study. Therefore, the hypothesis of this research is formulated as follows:

H1: Management support positively affects halal food standard practice
H2: Employee involvement positively influences halal food standard practice
H3: Customer focus affects halal food standard practice in a positive direction
H4: Supplier relationship affects halal food standard practice in a positive direction

![Conceptual model](image-url)
3. Research Methodology

3.1. Research instrument and operationalization of constructs

This study uses a quantitative method with a questionnaire as the main instrument for data collection. The questionnaire consisted of three parts, namely (1) the respondent's identity, (2) profile of SMEs, and (3) measurement items/indicators of the variables in the study. In addition to multiple choice questions, the question items on the respondent's identity and SME’s profile also use open answer option to accommodate the characteristics of the respondent or SMEs that does not match with the multiple choice given. Meanwhile, the question items on the measurement indicators of research variables were assessed using a Likert scale from "1" to "6". The measurement indicators were developed based on related previous researches.

There are 27 questions in the indicators of research variables, consisting of three items about customer focus, four items regarding to employee involvement in halal processes, six items focusing on management support, three items about supplier relationship, and eleven items regarding the application of halal standards. After evaluating its reliability and validity, questions items that can be used for further data processing are 20 items, consisting of two items about customer focus, four items about employee involvement in halal processes, four items about management support, two items about supplier relationship, and eight items regarding the application of halal standards. Measurement indicators for each variable in the study are shown in Table 1.

Table 1. Measurement indicators

| Construct | Indicator | References |
|-----------|-----------|------------|
| CUST      | CUST1: Fulfill customer need for halal | [6–9] |
|           | CUST2: Handle customer complaint regarding halal | |
| EMPL      | EMPL1: Employee capability | [4,5] |
|           | EMPL2: Employee knowledge | |
|           | EMPL3: Employee role in halal process | |
|           | EMPL4: Employee commitment | |
| HALP      | HALP1: Halal policy | [10] |
|           | HALP2: Training and education | |
|           | HALP3: Raw material | |
|           | HALP4: Production facility | |
|           | HALP5: Written procedure | |
|           | HALP6: Traceability | |
|           | HALP7: Handling of non-conformance | |
|           | HALP8: Internal audit | |
| MNGT      | MNGT1: Top management commitment | [4,5,8] |
|           | MNGT2: Halal policy | |
|           | MNGT3: Financial sources for halal | |
|           | MNGT4: Top down communication | |
| SUPL      | SUPL1: Halal supplier selection | [4,5] |
|           | SUPL2: Halal supplier collaboration | |

3.2. Sample design and data collection

This study is aimed to prioritize the critical success factors of halal practice in food small manufacturing SMEs. To achieve the designated objective, the targeted population for this study was identified as all the halal-certified food manufacturing SMEs in Solo Raya. Solo Raya is the region consisting seven districts, namely Surakarta, Sukoharjo, Sragen, Karanganyar, Boyolali, Wonogiri, and Klaten. According to the halal directory of LPPOM MUI shown at www.halalmui.or.id and www.halaljateng.or.id, there are 143 halal-certified SMEs. Non-probability convenience sampling was used as the sampling technique for this study. This technique allows the researchers to take samples
that are easily found [11] and are willing to become respondents. Respondent criteria are the SME owners or main managers involved in the halal standard practices. To increase the respondents’ response rate and the utility level of questionnaire, the “on the spot” survey was carried out by directly visiting the respondents. Previously, the surveyor contacted the candidate of respondents to confirm their willingness to participate in the research survey.

3.3. Data analysis
For data analysis, this study apply Structural Equation Model-Partial Least Squares (SEM-PLS) approach with the help of Smart-PLS software 3.2.8. In this study, SEM-PLS is used to evaluate measurement model, test the structural model, and prioritize the exogenous variables through importance-performance map analysis (IPMA). SEM-PLS was selected because of the exploratory nature of this research [12]. SEM-PLS is also able to accommodate structural modeling with a small sample size [13] since this research used small sample size.

4. Result and discussion
4.1. Sample profile
There are 83 respondents in this study. This sample size exceeded the minimum requirement suggested by Hair et al [14]. According to Hair et al [14], the rule for determining minimum sample size in SEM-PLS should be ten multiplied by the largest number of structural paths directed at a particular construct in structural model. Structural model of this study involves five constructs (i.e. four exogenous constructs and one endogenous construct), and according to the ten times rule criterion [14], the minimum sample size should be 40. Table 2 presents the sample profile of the SMEs and respondents.

| District | SMEs | n | %  | Respondents | n | %  |
|----------|------|---|----|-------------|---|----|
| Surakarta | 16   | 19.28 | | 79 | 95.18 |
| Sukoharjo | 17   | 20.48 | | 4  | 4.82 |
| Wonogiri | 31   | 37.35 | | 62 | 74.70 |
| Karanganyar | 3   | 3.61 | Male | 21 | 25.30 |
| Klaten | 6    | 7.23 | Female | 62 | 74.70 |
| Boyolali | 9    | 10.84 | | 28 | 33.73 |
| Sragen | 1    | 1.20 | Muslim | 75 | 90.36 |
| Business age | | | | | |
| < 5 years | 32   | 38.55 | | 4  | 4.82 |
| 6-10 years | 30   | 36.14 | No formal education | 4 | 4.82 |
| 11-15 years | 12   | 14.46 | Elementary school | 10 | 12.05 |
| > 15 years | 9    | 10.84 | High school | 42 | 50.60 |
| First time halal-certified | | | | | |
| 2018 | 65   | 78.31 | University | 27 | 32.53 |
| 2017 | 9    | 10.84 | < 25 years old | 2 | 2.41 |
| 2016 | 4    | 4.82 | 25-34 years old | 11 | 13.25 |
| < 2015 | 5    | 6.02 | 35-44 years old | 31 | 37.35 |
| Halal certification cost | | | | | |
| Private | 79   | 95.18 | > 55 years old | 11 | 13.25 |
| External support | 4    | 4.82 | | | |
4.2. Measurement model evaluation

The measurement model of PLS-SEM was evaluated using four criteria, namely indicator reliability, internal consistency, convergent validity and discriminant validity. Indicator reliability was assessed by examining the outer factor loadings of each measure on its corresponding construct. According to the provisions of Hair Jr et al. [15], the loading factor value for confirmatory research is > 0.70 while for exploratory research the value of loading factor 0.50 is still acceptable [12]. The model’s internal consistency was assessed by using Cronbach Alpha (CA) and Composite Reliability (CR). The threshold value of both CA and CR is 0.70 [15]. The convergent validity of the model was evaluated by using average variance extracted (AVE), with the minimum of value of AVE should be 0.50 [12]. As depicted in Table 3, all the value of indicator reliability, internal consistency, and convergent validity have surpassed the threshold value.

To evaluate the discriminant validity, two approaches were used: the Fornell-Larcker criterion [16] and indicators cross-loading [12]. Table 4 provides a solid evidence for discriminant validity of construct in which the square root of the AVE (italic diagonal elements) are higher than the interconstruct correlations. In addition, the indicator cross-loading criterion as depicted in Table 5 also confirms that the discriminant validity of indicator was met, in which all the items (in italic) loaded higher on that construct and loaded lower on other constructs.

| Construct | Indicator | Factor loading | CR  | CA  | AVE  |
|-----------|-----------|----------------|-----|-----|------|
| CUST      | CUST1     | 0.781          | 0.807 | 0.527 | 0.677 |
|           | CUST2     | 0.863          |       |      |      |
| EMPL      | EMPL1     | 0.863          | 0.926 | 0.894 | 0.759 |
|           | EMPL2     | 0.838          |       |      |      |
|           | EMPL3     | 0.901          |       |      |      |
|           | EMPL4     | 0.881          |       |      |      |
| HALP      | HALP1     | 0.893          | 0.918 | 0.895 | 0.589 |
|           | HALP2     | 0.863          |       |      |      |
|           | HALP3     | 0.788          |       |      |      |
|           | HALP4     | 0.830          |       |      |      |
|           | HALP5     | 0.543          |       |      |      |
|           | HALP6     | 0.791          |       |      |      |
|           | HALP7     | 0.604          |       |      |      |
|           | HALP8     | 0.756          |       |      |      |
| MNGT      | MNGT1     | 0.891          | 0.961 | 0.946 | 0.860 |
|           | MNGT2     | 0.941          |       |      |      |
|           | MNGT3     | 0.962          |       |      |      |
|           | MNGT4     | 0.913          |       |      |      |
| SUPL      | SUPL1     | 0.987          | 0.908 | 0.845 | 0.833 |
|           | SUPL2     | 0.831          |       |      |      |

| Construct | CUST | EMPL | HALP | MNGT | SUPL |
|-----------|------|------|------|------|------|
| CUST      | 0.823|      |      |      |      |
| EMPL      | 0.566| 0.871|      |      |      |
| HALP      | 0.457| 0.661| 0.767|      |      |
| MNGT      | 0.598| 0.861| 0.647| 0.927|      |
| SUPL      | 0.415| 0.430| 0.263| 0.447| 0.913|
Table 5. Cross loading

|     | CUST | EMPL | HALP | MNGT | SUPL |
|-----|------|------|------|------|------|
| CUST1 | 0.781 | 0.415 | 0.333 | 0.385 | 0.257 |
| CUST2 | 0.863 | 0.510 | 0.413 | 0.583 | 0.412 |
| EMPL1 | 0.840 | 0.863 | 0.555 | 0.702 | 0.354 |
| EMPL2 | 0.546 | 0.838 | 0.577 | 0.629 | 0.310 |
| EMPL3 | 0.521 | 0.901 | 0.577 | 0.841 | 0.429 |
| EMPL4 | 0.427 | 0.881 | 0.592 | 0.825 | 0.404 |
| HALP1 | 0.377 | 0.574 | 0.893 | 0.610 | 0.221 |
| HALP2 | 0.282 | 0.577 | 0.863 | 0.510 | 0.179 |
| HALP3 | 0.369 | 0.496 | 0.788 | 0.434 | 0.254 |
| HALP4 | 0.331 | 0.574 | 0.830 | 0.516 | 0.195 |
| HALP5 | 0.178 | 0.429 | 0.543 | 0.439 | 0.085 |
| HALP6 | 0.463 | 0.462 | 0.791 | 0.499 | 0.335 |
| HALP7 | 0.454 | 0.393 | 0.604 | 0.415 | 0.131 |
| HALP8 | 0.353 | 0.510 | 0.756 | 0.515 | 0.203 |
| MNGT1 | 0.570 | 0.836 | 0.692 | 0.891 | 0.479 |
| MNGT2 | 0.480 | 0.781 | 0.544 | 0.941 | 0.355 |
| MNGT3 | 0.589 | 0.826 | 0.584 | 0.962 | 0.417 |
| MNGT4 | 0.568 | 0.733 | 0.552 | 0.913 | 0.387 |
| SUPL1 | 0.390 | 0.457 | 0.298 | 0.473 | 0.987 |
| SUPL2 | 0.412 | 0.243 | 0.086 | 0.263 | 0.831 |

4.3. Structural model evaluation

Structural model was evaluated for overall explanatory power of constructs through $R^2$ value, predictive relevance through $Q^2$ value, and path coefficient values. As depicted in Figure 2, the model has 46.80% explanatory power for halal standard practices with $R^2$ value = 0.468. It indicates that the proposed conceptual model has moderate explanatory significance [15]. The $Q^2$ value of this model is 0.241. It can be concluded that the structural model possess predictive relevance for endogenous constructs [13,14]. To evaluate the path coefficient, a bootstrapping technique with 500 resampling and a two-tailed test was performed to test the proposed hypotheses. As presented in Table 6, only one hypothesis ($H_2$) that is statistically significant at $\alpha = 0.05$ (two-tailed).

Table 6. Path coefficient and hypotheses testing

| Hypothesis | Path | Path Coefficient | $p$-value |
|------------|------|------------------|-----------|
| $H_1$ MNGT $\rightarrow$ HALP | 0.283 | 0.219 |
| $H_2$ EMPL $\rightarrow$ HALP | 0.395 | 0.022 |
| $H_3$ CUST $\rightarrow$ HALP | 0.093 | 0.512 |
| $H_4$ SUPL $\rightarrow$ HALP | -0.072 | 0.538 |

4.4. Importance-performance map analysis (IPMA)

The goal of IPMA is to identify predecessors which have a relatively low performance but high importance for the target construct. In this study, the target construct is halal standard practice (HALP) which is predicted by four predecessors. The IPMA of construct for this study is shown in Figure 3. For the ease of readers, the complete list of importance-performance values of construct is provided in Table 7 in which the bold values indicate the highest importance and highest performance value. From the IPMA of construct, it is known that employee involvement (EMPL) has the highest importance score, but its performance is slightly lower than the management support (MNGT). It means that the SMEs must focus on this area to enhance the successful of halal food standard practices.
Figure 2. Structural model

Figure 3. Importance-performance map of construct
Table 7. Contruct importance-performance value

| Construct | Importance | Performance |
|-----------|------------|-------------|
| CUST      | 0.093      | 88.275      |
| EMPL      | 0.395      | 89.579      |
| MNGT      | 0.283      | 94.544      |
| SUPL      | -0.072     | 89.486      |

More detail, the IPMA of construct can be analyzed further by evaluating the IPMA of indicators. The graphical IPMA of indicators is depicted in Figure 4. For the ease of readers, the complete list of importance-performance values of indicator is provided in Table 8 in which the bold values indicate the highest importance and highest performance value. Looking at the lower right area of the IPMA of indicators, it is depicted that employee knowledge indicators (EMPL1, EMPL2, EMPL3, and EMPL4) has higher importance among other indicators. But, the performance of those indicators are lower than the performance of MNGT2, MNGT3, and MNGT4. It means that the SMEs must focus on this area for improvement in order to enhance the successful of halal food standard practice.

Figure 4. Importance-performance map of indicator

Table 8. Indicator importance-performance value

| Indicator | Importance | Performance |
|-----------|------------|-------------|
| CUST1     | 0.050      | 87.349      |
| CUST2     | 0.062      | 89.157      |
| EMPL1     | 0.109      | 87.952      |
| EMPL2     | 0.114      | 87.149      |
| EMPL3     | 0.114      | 91.084      |
| EMPL4     | **0.117**  | 92.289      |
| MNGT1     | 0.089      | 92.048      |
| MNGT2     | 0.070      | **95.904**  |
| MNGT3     | 0.075      | 95.422      |
| MNGT4     | 0.071      | 94.940      |
| SUPL2     | -0.059     | 90.361      |
| SUPL2     | -0.017     | 86.345      |

4.5. Discussion
Result from structural model of SEM-PLS shows that employee involvement become the significant factors affecting the successful of halal standard practice in food manufacturing SMEs. Result from
IPMA of construct reveals that SMEs must focus their effort on the employee involvement. The construct of employee involvement in this study consisting four indicators, i.e employee capability, employee knowledge, employee role in halal practice, and employee commitment. The four indicators, based on IPMA of indicators, must have special attention by SME managers to enhance the successful of halal standard practice. This result support the previous research by Othman et.al [17] and Hassan et.al [1] regarding the importance of knowledge in the halal standard practice. The implementation of halal standard cannot be solely based on the knowledge in Islam. The food business managers and their employee should be given continuous training about the requirements of halal assurance system in order to achieve the sustainable implementation of halal standard in food manufacturing.

Refers to the HAS 23000, the SMEs must hold internal halal training at least once a year. Internal halal training is given by halal management team of SME to their employee. Additionally, SME manager have to get external halal training bi-annually. Currently, external halal training is held by Halal Training Center managed by LPPOM-MUI. The cost of external halal training for SME is around IDR 1 Million per person. This cost may become an obstacle for some SMEs to seek it. The government, in this case the SME supervisory agency, can take the role to support the SMEs by providing facilitation program so that SME can get free external halal training. The knowledge from external halal training must be transferred to all employee through internal halal training program.

5. Conclusion
This study is aimed to prioritize the factors should be focus by SME’s manager. Understanding the priority can be useful for SMEs to focus their effort to enhance the successful implementation of halal standard. Findings of this study suggest that SMEs should focus on the employee involvement to enhance the successful of halal food standard practices. It implies that the SMEs must give halal training to all employee. The owner or operational manager who has gained halal training from Halal Training Center of LPPOM-MUI must transfer their knowledge to their employee so that the involvement of employee towards halal standard practices in the SMEs can be maximized.

Although findings of this research explain on several important issues, yet several weaknesses need to be considered. First, this study only employed four exogenous constructs. Another potential constructs regarding halal food standard practices were not included in this study. Future research can explore another potential construct based on extensive literature review and deep interview. Second, this study only covers the region of Solo Raya which is the targeted population is relatively small. Further research can replicate this research using a larger sample and wider geographical area coverage so that the results of generalization of the results of the research can be used.

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