

Original Article

Analysis of Halal Certification Renewal Service Quality and Their Effect on the Customer's Satisfaction and Loyalty in Yogyakarta (Case Study in Meatball Stall)

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Abstract: The society awareness in consuming halal, safe, and healthy foodstuff within these past few years kept on increasing. This was closely related to responsible food manufacturers which produced sustain halal foods, as evidenced by ownership halal certification. In order to increase the satisfaction of food producers and to maintain their commitment to extend the halal certificates, the quality of halal authority service should always be enhanced. This study aims to identify the Customer Satisfaction Index (CSI) value, to determine the influence of halal label and product attributes toward customer's satisfaction and loyalty of meatball stalls in Yogyakarta, and to identify the influence of halal label toward selling volume on certified meatball stalls. The instruments used were questionnaires containing 21 quality attributes of halal certificate renewal service. Analyses were performed using Structural Equation Modeling (SEM). The model was composed of seven latent variables: halal certification, brand, price, taste, service, customer satisfaction and customer loyalty. Result of the research showed that taste and halal certification have significant effect on the customer's satisfaction and loyalty of certified meatball stalls. Halal certification have affected the certified meatball stalls in Yogyakarta by increasing the selling volume of 25-37.5%.

Keywords: customer satisfaction and loyalty; halal label; product attributes; SEM

1. INTRODUCTION

Nowadays, the authenticity of halal is an issue of major concern in the food industry. In recent years, the news related to pork and lard mixed in food and food products more popping up [1]. Halal products start to be a concern of food consumers and producers because the majority of Indonesia's population is muslim. Halal concept has been widely known and has been applied particularly by muslims. The food industry have to pay attention for the requirements of products produced for muslim market as well as the import requirements of countries with muslim majority, which covers aspects of religion as well as the safety of imported food [2].

With a very large muslim population, Indonesia is potential market for halal products. Halal certification is very important to be applied in the food stalls, especially that selling food made from raw meat such as meatball stalls. Undeniably, the current number of meatballs stalls in Yogyakarta was quite a lot, but only few that has been certified. Halal label must be considered by the owner of food stalls because it was one of the quality attributes affected the customer loyalty, even though there were still many consumers who do not care about halal labels on the food stalls. Strategies to develop products through halal label and other product attributes need to be considered to give the customer satisfaction and maintain their loyalty, because the loyal customer will require sacrifice fewer than seeking new customers [3].

Customer satisfaction is a comparison between perceptions of services received with their expectations before use the services [4]. Customer satisfaction could be measured by Customer Satisfaction Index (CSI), which is the percentage of users who are happy in a user satisfaction survey. Customer Satisfaction Index is used to determine the level of overall user satisfaction with regard to the importance of product attributes or service. In general, if the CSI value more than 50%, it can be said that the customers are satisfied.

Consumer loyalty is a relationship of all buyers or a deep commitment to products, service, brand, and organization [5]. Based on the background above, this study aims to identify the Customer Index Satisfaction (CSI) value, determine the influence of halal label and product attributes toward customer satisfaction and loyalty on certified and non certified meatball stalls, and indentifying the influence of halal label to selling volume on certified meatball stalls in Yogyakarta.

2. MATERIALS AND METHODS

2.1. Population and Sample

The object of the research is Research Institute for Food, Drugs, and Cosmetics Indonesian Religious Leader (LPPOM MUI) Yogyakarta Region and meatball stalls in Yogyakarta city. The population consist of all muslim consumers of meatball stall in Yogyakarta that has been chosen, both of certified and non certified meatball stalls, while the research sample consist of muslim consumers of meatball stalls in age range from adolescent up to adult who have ever purchased the product from meatball stalls that has been chosen. Respondents used to determine the effect of halal label on vegetable product (bakpia) and animal product (meatball) were different. Number of samples was in range of 100-200 and equal to the number of indicators multiplied by 5 to 10. The indicators used in the research were 22, therefore, 120 respondents were used .

To obtain the data of LPPOM MUI services, the questionnaire was distributed to food producers and it contain the attributes of service quality halal certification which measured from the five dimensions of SERVQUAL i.e physical evidence, reliability, responsiveness, assurance, and empathy.

2.2. Customer Satisfaction Index (CSI)

CSI is required to determine the level of overall user satisfaction by taking into account the importance of the attributes of product or service. CSI calculation steps were described as follows:

1. Defining Mean Importance Score (MIS), derived from the average importance of each customer and Mean Satisfaction Score (MSS) derived from the average satisfaction index of each customer.
2. Defining Weight Factor (WF), or the percentage of MIS per attribute to that of the entire attributes.
3. Defining Weight Score (WS) which obtained through multiplying WF by the average level of satisfaction index (MSS).

4. Defining Customer Satisfaction Index (CSI)

$$CSI = \frac{\sum_{i=1}^n WSi}{HS} \times 100\%$$

2.3. Variables

Seven latent variables were divided into two groups, independent variables (X) and dependent variables (Y). Independent variables were consist of halal label/certificate (Hc), brand (B), taste (T) and service (S). Dependent variables were consist of customer satisfaction (St) and customer loyalty (L). The data measurement method using likert scale with five alternative answers: 1 (totally disagree), 2 (disagree), 3 (enough), 4 (agree) and 5 (totally agree).

Structural Equation Modeling (SEM) was used through LISREL 8.51 (Linear Structural Relationship) software to assay the validity and reliability of the research instrument, the accuracy of the model, and the effect of one variable to another variable.

2.4. Hypothesis

Five hypothesis were used in the research:

1. H0 = halal certificate variable was not significantly influence consumer satisfaction
H1 = halal certificate variable significantly influence consumer satisfaction
2. H0 = brand variable was not significantly influence consumer satisfaction
H2 = brand variable significantly influence consumer satisfaction
3. H0 = taste variable was not significantly influence consumer satisfaction
H3 = taste variable significantly influence consumer satisfaction
4. H0 = service variable was not significantly influence consumer satisfaction
H4 = service variable significantly influence consumer satisfaction
5. H0 = satisfaction variable was not significantly influence consumer loyalty
H5 = satisfaction variable significantly influence consumer loyalty

3. RESULTS AND DISCUSSION

3.1. Validity and Reliability Test

Based on validity and reliability test, the corrected item-total correlation value of all variable indicators were more than r Table (0.361), its mean that all questionnaire attributes were valid. Reliability test results showed that the value of Cronbach's alpha total item of service quality attributes (0.938) larger than the limit of acceptance (0.60). Similarly, reliability test in all group of meatball stalls showed that it has larger value than Cronbach's alpha's value (0.7). Both halal certified and non certified meatball stalls has value of 0.910 and 0.888, respectively.

According to [6], data is considered to be multicollinear if tolerance value <0.10 and VIF > 10. Multicollinearity test showed that there were no multicollinearity on data because it has variance inflation factor (VIF) value smaller than 10 and tolerance value larger than 0.10.

Based on normality test, The Mahalanobis Distance's (MD) value of halal certified and non certified meatball stalls were 0.989 and 0.994, respectively, which were larger than critical value (0.987). It mean that the data was normal.

3.2. Analysis of customer satisfaction.

There were 21 attributes of LPPOM MUI DIY halal certification renewal service quality which developed from the 5 dimensions of SERVQUAL based on several relevant sources. Details of the data have listed in Table 1.

Table 1. Attributes of LPPOM MUI DIY Halal Certification Renewal Service Quality

No	Code	Attribute
1	K1	Accessibility, either by phone, email, or face to face
2	K2	Coherency and consistency of the information given by LPPOM DIY staffs.
3	K3	LPPOM DIY staffs accurately archive customers' files.
4	K4	Halal certification renewal process is completed in less than a month.
5	K5	Halal certification renewal form is easily obtained.
6	K6	Official website is accessible and provides sufficient information.
7	D1	Customers complaints are responded right away.
8	D2	The application for renewal of halal goods certification is processed forthwith
9	D3	LPPOM DIY staffs deftly notify customers when new services and other changes are available.
10	D4	Fee payment process is easily and quickly done.
11	D5	LPPOM DIY staffs adeptly guide the preparation of Halal Assurance System (Sistem Jaminan Halal/SJH).
12	J1	LPPOM DIY staffs are kind and polite.
13	J2	LPPOM DIY staffs are able to answer any questions asked by the customers.
14	J3	LPPOM DIY staffs inform audit schedule.
15	J4	LPPOM DIY staffs give timely reminder of halal certification expiration date.
16	J5	LPPOM DIY staffs inform the customer to pick up a ready halal certificate.
17	E1	LPPOM DIY staffs greet customers with a smile.
18	E2	LPPOM DIY staffs serve customers with a friendly attitude.
19	E3	LPPOM DIY halal certification renewal is done once every two years.
20	B1	LPPOM DIY provides a pamphlet/ guide on the certificate renewal information in the office.
21	B2	LPPOM DIY staffs are all look presentable.

Based on the CSI calculation, the food manufacturers satisfaction index on halal certification renewal service was 81.13%. According to the criteria of CSI, this score was translated into 0.81-1.00 of CSI which means that customers were very satisfied with the service quality. However, LPPOM MUI DIY management should improve the quality of the existing halal certification renewal service to increased the CSI up to 1.00.

3.3. Model Analysis of Certified Meatball Stalls

3.3.1. Model Output of Certified Meatball Stalls

The model output of certified meatball stalls showed on Figure 1. Based on Figure 1 and 2, standardize loading factor values was less than the standard (0.5) and t -value ≥ 1.96 . According to [7], the evaluation of measurement models will produce good results if standardized loading factor ≥ 0.5 and the coefficient of correlation between variables was significant (t -value ≥ 1.96). It mean that variable Hc3 and B3 should be removed by re-specification. The result of model re-specification showed on Figure 3.

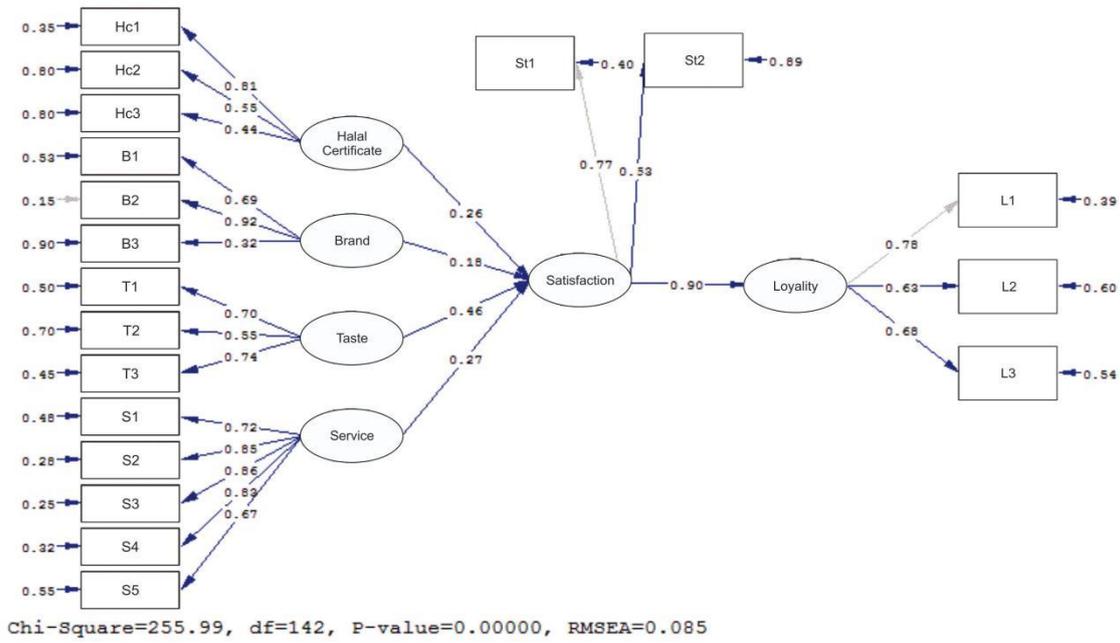


Figure 1. Path Diagram Model of A1

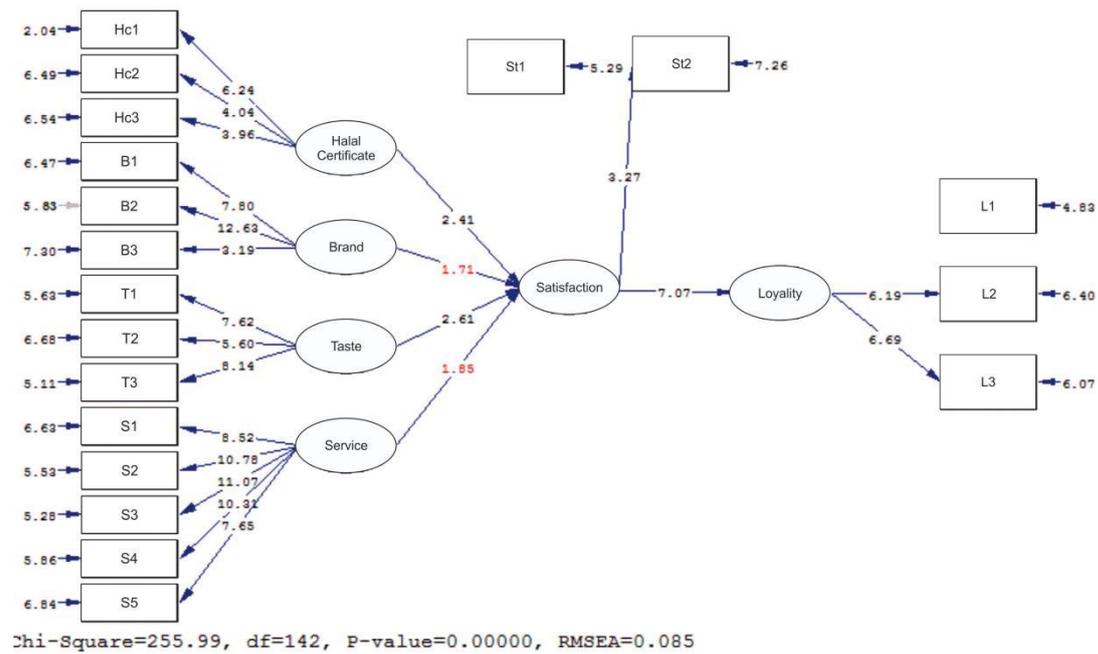


Figure 2. t-test of Model A1

Figure 3 showed that all standardize loading factor value were more than 0.5. The next step were t-test and Goodness of Fit test which gave the result on Figure 4 and Table 1, respectively.

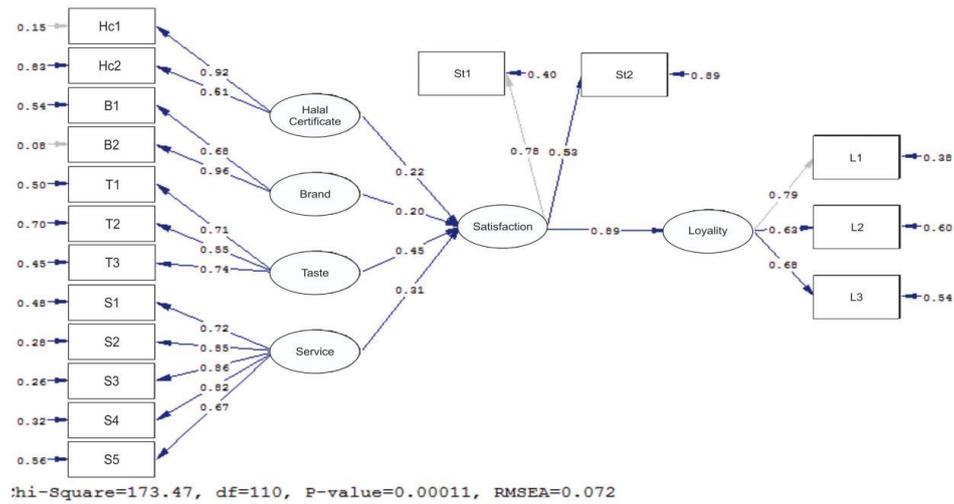


Figure 3. Path Diagram Model of A2

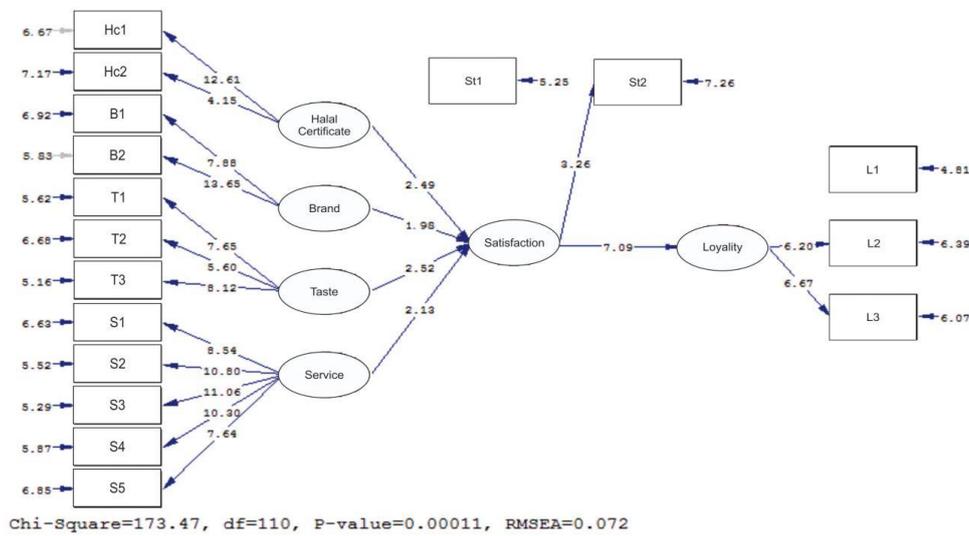


Figure 4. t-test of A2 Model

Based on t-test in Figure 4, each indicator in the measurement model has t-value ≥ 1.96 . Goodness of fit test (Table 2) confirmed that all fit measurements have been fulfilled and causal model was therefore fit.

Table 2. Goodness of Fit of A2 Model

Size Degree of Match	Output Value	Compatibility Levels Acceptable	Conclusion
Chi-Square (X ² /df)	P-value = 0,00230 159.82/119 = 1.34	P = close to 0 1 ≤ (X ² /df) ≤ 2	Fit
NCP	40.82	29.983 – 98.953	Fit
GFI	0.86	0.8 ≤ GFI ≤ 0.9	Fit
RMSEA	0.056	≤ 0.08	Fit
ECVI	ECVI = 2.40 ECVI Saturated = 3.11 ECVI Independence Model = 8.73	ECVI ≤ ECVI saturated & ECVI independence	Fit
CFI	0.93	≥ 0.9	Fit

3.3.2. Measurement Model Analysis (Reliability Test)

Reliability test was performed by calculating the value of the construct reliability (CR) and variance extracted. In [8] stated that the CR value ≥ 0.70 , while [9] stated that CR value between 0.5-0.6 could be accepted. The result of the calculation of the reliability test on certified meatball stalls showed that all values of construct reliability and variance has been fulfilled the recommended value (Table 3).

Table 3. Reliability test on certified meatball stalls

Variables	Construct Reliability	Variance Extracted
Halal certificate/label	0.73	0.58
Brand	0.81	0.69
Taste	0.71	0.45
Service	0.90	0.62
Satisfaction	0.57	0.41
loyalty	0.74	0.50

3.3.3. Structural Model Analysis

Based on the hypothesis that has been arranged showed that variable of satisfaction has two functions, namely as an endogenous latent variable (Hc, B, T, and S) and exogenous latent variable (customer loyalty, L). The test results were presented in Table 4. All hypotheses were accepted, and all relationship between variables were significant. Halal certificate/label, brand, taste, and service had effect at 4.84, 4, 20.25, and 9.61% to satisfaction, respectively, and satisfaction had effect at 79.21% to loyalty. Its mean that halal certicicate/label, brand, taste and service influence the consumer satisfaction significantly.

Table 4. The hypotheses test result of A2

Variable	Path Coefficient	t-value	Conclusion
Halal label \rightarrow Satisfaction	0.22	2.49	Significant
Brand \rightarrow Satisfaction	0.20	1.98	Significant
Taste \rightarrow Satisfaction	0.45	2.52	Significant
Service \rightarrow Satisfaction	0.31	2.13	Significant
Satisfaction \rightarrow loyalty	0.89	7.09	Significant

Consumer satisfaction variable has indirect effect on loyalty variable because the relationship between satisfaction and independent variables (halal certificate/label, brand, price, taste, and service). Indirect influence between variables showed in Table 5. The indirect effect of Hc, B, T, and S variable to loyalty was 0.20 (4%), 0.18 (3.24%), 0.40 (16%), and 0.28 (7.84%), respectively.

Table 5. Indirect influence between variables of A2

	Halal label	Brand	Taste	Service	Satisfaction
Satisfaction	0.22	0.20	0.45	0.31	0
loyalty	0.20	0.18	0.40	0.28	0.89

3.4. Model Analysis of Non Certified Meatball Stalls

3.4.1. Model Output of Non Certified Meatball Stalls

The model output of non certified meatball stalls showed on Figure 5. Based on Figure 5 and 6, standardize loading factor values was less than the standard (0.5) and therefore it should be removed by re-specification.

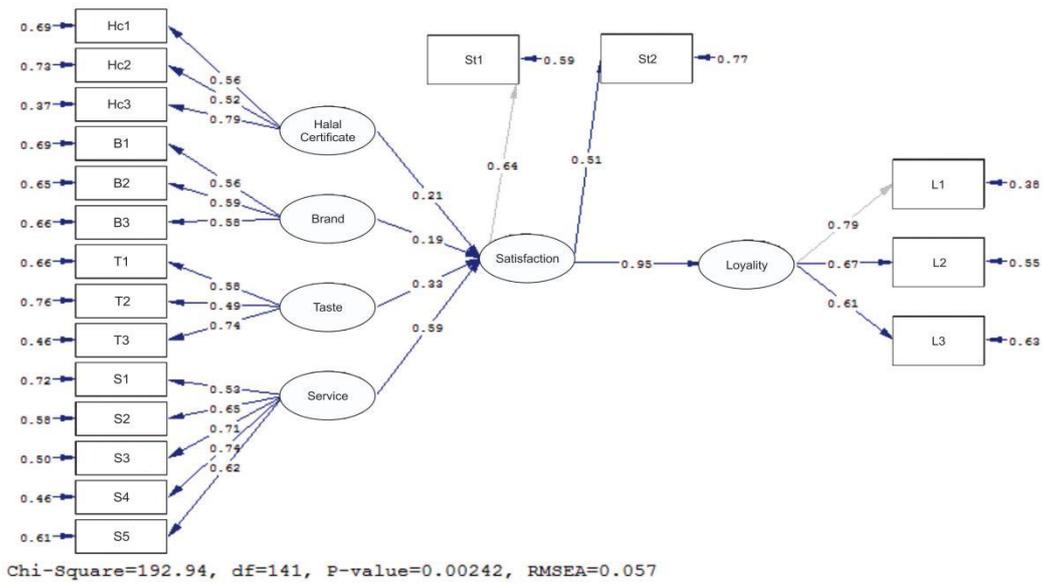


Figure 5. Path Diagram Model of B1

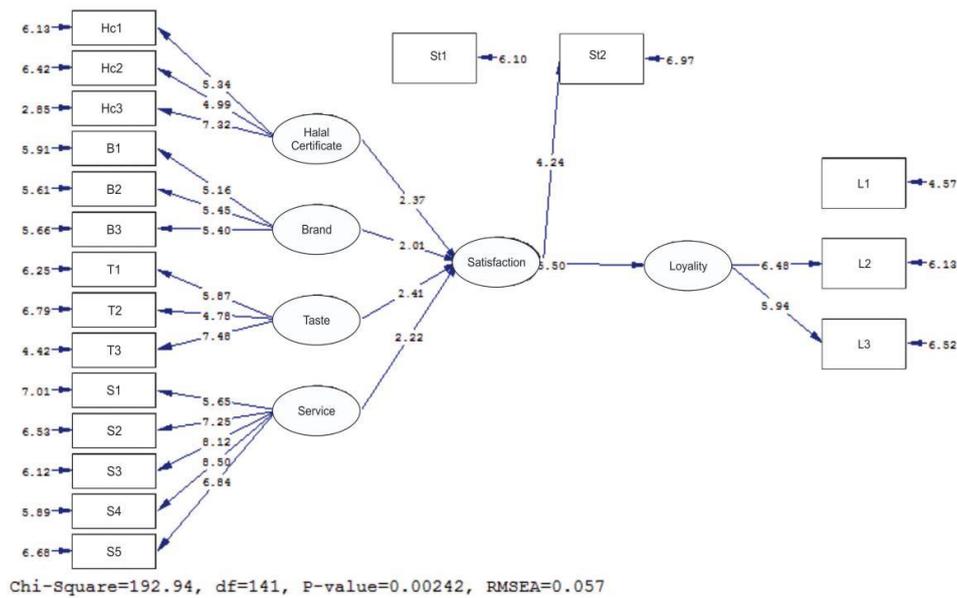


Figure 6. t-test of Model B1

The result of re-specification of B1 model showed on Figure 7 and 8. Figure 7 indicated there was no more standardize loading factor value less than 0.5 while Figure 8 showed that there was no t-value less than 1.96.

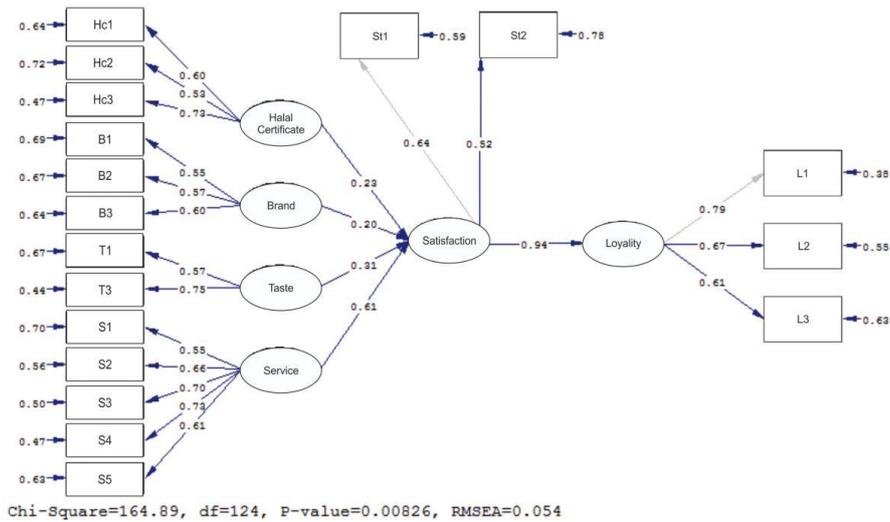


Figure 7. Path Diagram Model of B2

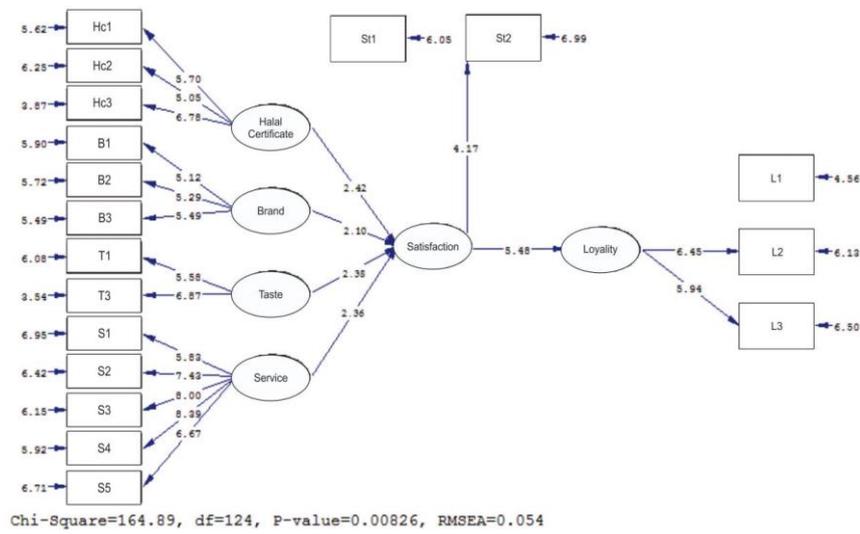


Figure 8. t-test of Model B2

The criteria was then fulfilled and performed by Goodness of Fit test as shown at Table 5. Table 6 confirmed that all fit measurements have been fulfilled and causal model was therefore fit.

Table 6. Goodness of Fit Model B2

Size Degree of Match	Output Value	Compatibility Levels Acceptable	Conclusion
Chi-Square (X2/df)	P-value = 0.0826 164.89/124 = 1.33	P = close to 0 1 ≤ (X2/df) ≤ 2	Fit
NCP	40.89	29.983 – 98.953	Fit
GFI	0.86	0.8 ≤ GFI ≤ 0.9	Fit
RMSEA	0.054	≤ 0.08	Fit
ECVI	ECVI = 2.27 ECVI Saturated = 3.00 ECVI Independence Model = 6.34	ECVI ≤ ECVI Saturated & ECVI independence	Fit
CFI	0.90	≥ 0.9	Fit

3.4.2. Measurement Model Analysis (Reliability Test)

Table 6 showed that all values of construct reliability and variance has been fulfilled the recommended value. Calculation result of the reliability test of non certified meatball stalls was shown in Table 7.

Table 7. Reliability test of non certified meatball stalls

Variables	Construct Reliability	Variance Extracted
Halal certificate/label	0.65	0.40
Brand	0.60	0.33
Taste	0.61	0.45
Service	0.79	0.43
Satisfaction	0.71	0.53
loyalty	0.67	0.41

3.4.3. Structural Model Analysis

The hypotheses test result showed in Table 8. All hypotheses were accepted, and all relationships of variable were significant. Halal certificate/label, brand, taste, and service had effect at 5.29, 4, 9.61, and 37.21% to satisfaction, respectively, and satisfaction had effect at 88.36% to loyalty. Its mean that halal certificate/label, brand, taste and service influence the consumer satisfaction significantly.

Consumer satisfaction variable had indirect effect on loyalty variable because the relationship between satisfaction and independent variables (halal certificate/label, brand, price, taste and service) was existed. Indirect influence between variables were shown in Table 9.

Table 8. The hypothesis test result of B2

Variable	Path Coefficient	t-value	Conclusion
Halal label →Satisfaction	0.23	2.42	Significant
Brand →Satisfaction	0.20	2.10	Significant
Taste →Satisfaction	0.31	2.38	Significant
Service →Satisfaction	0.61	2.36	Significant
Satisfaction →loyalty	0.94	5.48	Significant

Table 9. Indirect influence between variables of A2

	Halal label	Brand	Taste	Service	Satisfaction
Satisfaction	0.23	0.20	0.31	0.61	0
loyalty	0.22	0.19	0.29	0.57	0.94

As shown in Table 9, the indirect effect of Hc, B, T, and S variable to loyalty was 0.22 (4.84%), 0.19 (3.16%), 0.29 (8.41%), and 0.57 (32.49%), respectively.

3.5. Analysis of the Influence of Halal Label toward Sales Volume

The influence of halal certificate/label toward meatball stall sales volume was analysed by comparing the sales volume of each stalls, before and after they have halal certificate/label. Halal certificate/label has positive and significant influence on muslims and non-muslims consumer purchasing decisions [10]. Moreover, [11] showed that brand had positive effect on consumer purchasing decision. Product attributes consisting of flavor, aroma, texture, brand, price, label, and packaging has significant influence on consumer purchasing decisions as well [12]. Almost similarly, [13] showed that price, promotion, and service have the greatest effect in influencing consumer purchasing decisions.

Increasing of meatball selling volume was presented on Figure 9. There was an increase from each meatball stalls selling volume since they have halal certificate/label. Meatball stall "Bethesda '74

Jogja”, “Mas Kribo”, and “Telkom” had increasing by 100 portions (28.57%), 150 portions (37.5%), and 50 portions (25%) per day, respectively.

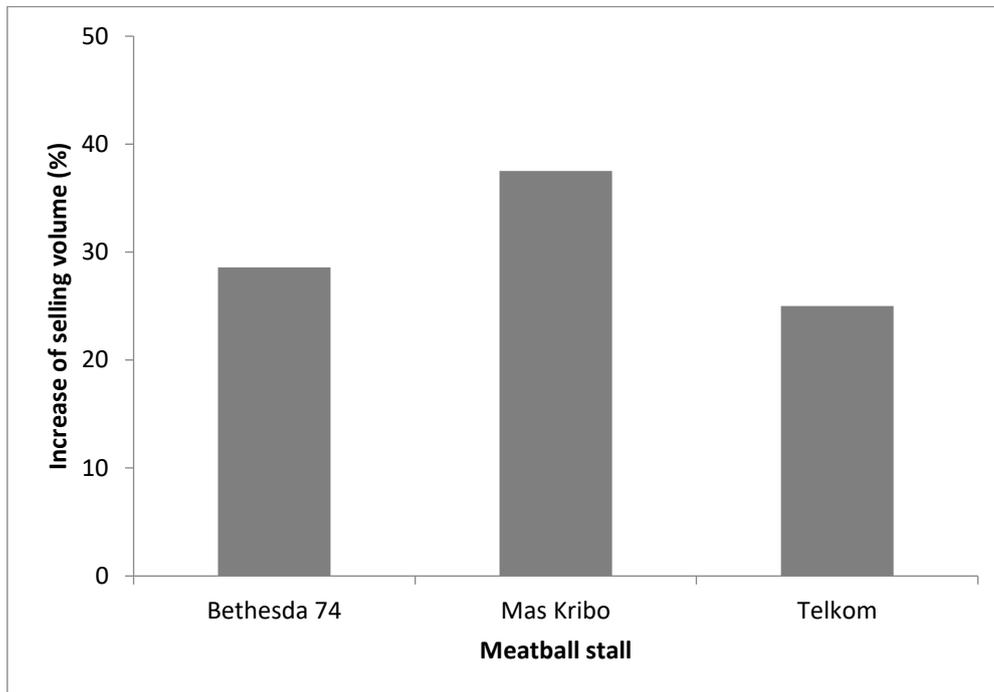


Figure 9. Increase of meatball selling volume (%)

3.6. Effect of Halal Label on Vegetable and Animal Product.

The effect of halal certification on comparison between animal products (meatball) and vegetable products (bakpia) was identified and presented at Table 10. Halal label of bakpia has path coefficient value of 0.73, as it lower than brand (0.77) and taste (1.00). Its mean that the influencing of taste and brand to consumer purchasing decision were higher than halal label. On the other hand, halal label of meatball has path coefficient value of 0.35, as it higher than brand (0.25) but lower than taste (0.49). The resulted data showed that the influence of halal label on the consumer purchasing decision of meatball was higher than that of bakpia. Meatball produced by ground the meat, as some of meatball stall owner have done it at the public grinder area, which was unknown whether it has halal certified or not. It became one of the factors considered by consumers in the consumption of meatball.

Table 10. Comparison of consumer purchasing decision factor on animal products (meatball) and vegetable products (bakpia)

Variable	Meatball		Conclusion	Bakpia		Conclusion
	Path coefficient	t-Value		Path coefficient	t-Value	
Halal label	0.35	2.87	Significant	0.73	7.92	Significant
Brand	0.20	2.00	Significant	0.77	8.84	Significant
Taste	0.49	2.52	Significant	1.00	11.30	Significant

Based on the research that has been performed, it can be seen that the halal label has significant effect both on animal and vegetable products in influencing purchasing decisions or customer satisfaction, as t-value >1.96. It was proved that consumers began to notice halal certificate contained in the products. These results should be considered by food manufacturers to certify halal their food products because it will affect the customer satisfaction.

4. CONCLUSION

Halal food manufacturers satisfaction index on halal certification renewal service by LPPOM MUI Yogyakarta is 81.13% which means that they are very satisfied with the service. In both certified meatball stalls and not certified meatball stalls, halal certificate/label, brand, taste, and service significantly influencing consumer satisfaction while consumer satisfaction also significantly influencing consumer loyalty. The dominant variable which influence consumer's satisfaction and loyalty in certified meatball stalls was taste, where as those in non certified meatball stalls was service. Halal certificate/label were have significant effect on the increasing of selling volume of meatball stalls.

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