

Behavioral Influence on Halal Food Consumption of Millennial Consumers in BARMM, Philippines

Jalaloden B. Marohom¹, Julito G. Fuerzas²

¹College of Business, Development Economics and Management, University of Southern Mindanao, Kabacan, Cotabato, Philippines, and
Graduate School of Business and Governance – Ateneo de Davao University, Davao City, Philippines;

²University of Southeastern Philippines, Davao City, Philippines

Abstract

Halal has caught the interest of customers worldwide, both Muslims and non-Muslims. The concepts and principles, however, were little understood, and the research was limited to Muslims. Hence, the study on the behavioral influence of halal food consumption was conducted considering two religions and the millennials. The validated and pre-tested survey instruments were distributed in selected cities and municipalities of the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), Philippines with a total of 536 participants. Following the standards of analysis, IBM SPSS software version 22 of the University was used to analyze the 519 valid questionnaires. Six-stages of CB-SEM was employed providing TPB models that are in good fit considering the satisfaction of measures including χ^2 statistic, root mean square error of estimate (RMSEA), standardized root mean square residual (SRMR), normed χ^2 , comparative fit index (CFI) and parsimony normed fit index (PNFI). The measurement model was confirmed to be applicable in the local setting and the proposed structural model is significant and acceptable. The re-specification generates the knowledge, subjective norms, and attitude that are positively related and statistically significant to intention to buy. The findings revealed also that the intention to buy and all variables pertaining to it highly explained the halal food consumption of millennials. Government and schools are encouraged to collaborate to intensify the promotion on halal food products and sustain the appreciation of consumers.

Keywords: Measurement Model, Structural Model, Subjective norms, Knowledge, Halal food consumption



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INTRODUCTION

People purchase food products to fulfill their needs and wants, thus behavioral factors must be taken into account. Social interactions, a significant environmental influence that may influence behavior and lead to purchases, are the focus of the behavioral impact in purchasing. Studying consumer behavior is essential to marketing in order to identify buying patterns and take strategic action. Due to consumer concerns over, among other things, food safety, health, and ethics, halal has drawn attention as a sector that is expanding. Its validity guarantees the purchase of food products that adhere to halal standards. A loss of respect for halal is the result of a lack of knowledge, education, and awareness of the concept among consumers and producers, according

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to Robin (2004). Alqudsi (2014) also claims that awareness of the benefits by consumers will let them search for it, regardless of faith.

The Philippine government established the Philippine Halal Export Development and Promotion Program making the nation a reputable country in the global halal ecosystem and stressed the importance of working for recognition by target consumers after realizing the potential for producing authentic halal food (Department of Trade and Industry, 2021). Concerns about halal food are common among millennial consumers. Previous studies revealed that millennials preferred halal food (Fadholi et al., 2020). Millennials in BARMM, however, are still unfamiliar with the concept of halal. The great majority of people are aware that halal simply denotes foods that are free of pork derivatives. A behavioral shift is described as a change in a person's behavior from past conduct, which can be either temporary or permanent. Halal, being a recent issue, could affect consumers' food product purchase behaviors.

By considering behavioral traits including religion, knowledge, habit, subjective norms, attitudes, perceived behavioral control, perceived political forces, and intention to buy, this paper aimed to determine if how millennials consume halal food products. The paper can help marketers and sellers develop a smart marketing strategy as issues about food safety and ethical concerns about consumed goods, particularly halal, are growing.

LITERATURE REVIEW

Muslims and non-Muslims shared the interests on organic food, nutrition, hygiene, and food safety. People are looking for more meaning in their food choices in the broader context of sustainability, which also has halal issues. The Theory of Planned Behavior by Ajzen (1991) served as the basis for the study. The fundamental tenet of the paradigm is that attitudes, subjective standards, and perceived behavioral control all have an effect on behavioral intention. The method emphasizes the importance of prior experience with the activity and knowledge of the skills needed to perform it. Arguments on the concepts, morals, and religious traditions were seen to increase the model's ability to predict the future. This was applied in several studies that employed the TPB model. In a study that included Islamic practices and beliefs, Rahim and Junos (2012) found that these elements significantly predict behavior. Another study that included respondents who were Muslims and non-Muslims as well as the variables religion and halal certification, was released. It was demonstrated that, despite non-Muslim customers having a higher r^2 , Muslim customers' shifting purchase intentions may be accounted for by religion, subjective norm, attitude, and perceived behavioral control.

The local approach of Acas and Isabelle looked into the factors influencing Filipino Muslims' intentions to buy halal cuisine (2020). It aimed to identify the most important elements that supported Islamic devotion and arbitrary standards. But the poll was conducted on Luzon, namely in Metro Manila, where non-Muslims are the majority. Customers who are not Muslims are urged to purchase halal products since they are sanitary and secure for consumption (Yusoff et al., 2015). No longer are Muslims the only ones who seek out halal food products. Additionally, it has increased awareness among non-Muslims, demonstrating that the concept of halal and its associated goods are now accepted globally which applies to everyone (Hussain et al., 2016).

These elements were important in the design of the paper with an objective to evaluate the significance of religiosity, knowledge, habit, subjective norms, attitudes, perceived behavioral

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control, and perceived political forces on the intention to buy and consumption of halal food as actual behavior.

RESEARCH METHODOLOGY

The paper was a descriptive and correlation research that focused on covariance-based structural equation modeling (CB-SEM) utilizing the six-stage model created by Hair et al (2010). The variables were assessed using a seven-point Likert scale. Based on the assessment of the validators, the questionnaire was excellently developed (mean = 4.50) and pre-survey was conducted with 50 participants, including Muslims and non-Muslims. These respondents were excluded from the survey in actual. The reliability requirements for the study were satisfied with a rating of 98.10%. The measured scales as behaving separately, was verified by a factor analysis. The Kaiser-Meyer-Olkin (KMO) measure is employed to evaluate the suitability of the indicating variables. The statistical value from 0.5 to 1 indicates that the factor analysis is suitable for the data (Latif, 2020). Frequently, values that are less than 0.50 are deleted. Through the varimax procedure, which was shown to be the best orthogonal rotation provided the factors were uncorrelated, these criteria were used to evaluate the observed scales as well as the factor rotation.

To administer survey instruments, the researcher asked for approval. But deploying enumerators was required under the COVID-19 and national election restrictions, especially in conflict areas. The enumerators attended orientations and use of actual instrument to become comfortable with the tool. They carried out the survey and, if necessary, provided a translation into the local dialect of the respondents. The 536 millennial consumers from BARMM's provinces and special geographic areas served as the respondents. They evenly distributed themselves around the designated areas as they systematically located in the households. The 519 valid survey questionnaires were analyzed using IBM SPSS version 22 of the University.

The CFA stages by Hair et al. (2010) was followed and it started with (1) individual constructs definition, (2) measurement model development and specification, (3) empirical data gathered to carry out the research, and (4) measurement model validity assessment. The analysis allowed the researcher to determine if the constructs were accurately represented by the measured variables. The χ^2 , RMSEA, SRMR, normed χ^2 , and CFI indices were used to assess how well the model matched the data as a whole. Additionally, the model diagnostics evaluation took into account the study's standardized residuals and examined the concept validity, construct reliability, discriminant validity, and standardized loadings. The specifications and validation of the structural model, which comprised the latter two (2) steps, both used metrics. The metrics and standards used in the model evaluation for goodness-of-fit are shown in the table.

Table 1. Goodness-of-fit indicators and Criteria

I. Absolute fit	Criteria
χ^2 statistics	Close to zero
RMSEA	between 0.03 to 0.08
SRMR	< 0.05
Normed χ^2	< 5.0

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II. Incremental fit	Criteria
CFI	> 0.90
III. Construct Validity	Criteria
Standardized loadings	0.50 - 0.70
Construct reliabilities	> 0.70
Discriminant validity (AVE)	> 0.50
IV. Model Diagnostics	Criteria
Standardized residuals	< 2.5
Modification index	> 10 (area for improvement)
<i>References: Hair et al. (2014), Hooper, Coughlan and Mullen (2008), Diamantopoulos and Siguaw (2000), Bentler (1990)</i>	

FINDINGS AND DISCUSSION

After the compliance of procedures and approval, the survey was conducted. After the survey, 519 (97%) were found to be valid, while 17 (3%) were found to be invalid and excluded from the analysis. Cotabato City (56%), Lanao del Sur (57%), Maguindanao (50%), Basilan (86%), Sulu (51%), and Tawi-tawi (57%) have the highest percentages of Muslims, whereas majority (51%) in North Cotabato are Christians. The province of Basilan has the highest proportion of Muslim participants and the lowest proportion of non-Muslim participants due to its predominance by Muslims and the difficulty of getting around the area. The data gathering was challenged due to high alert for the national election in 2022 which was observed in most of the survey sites.

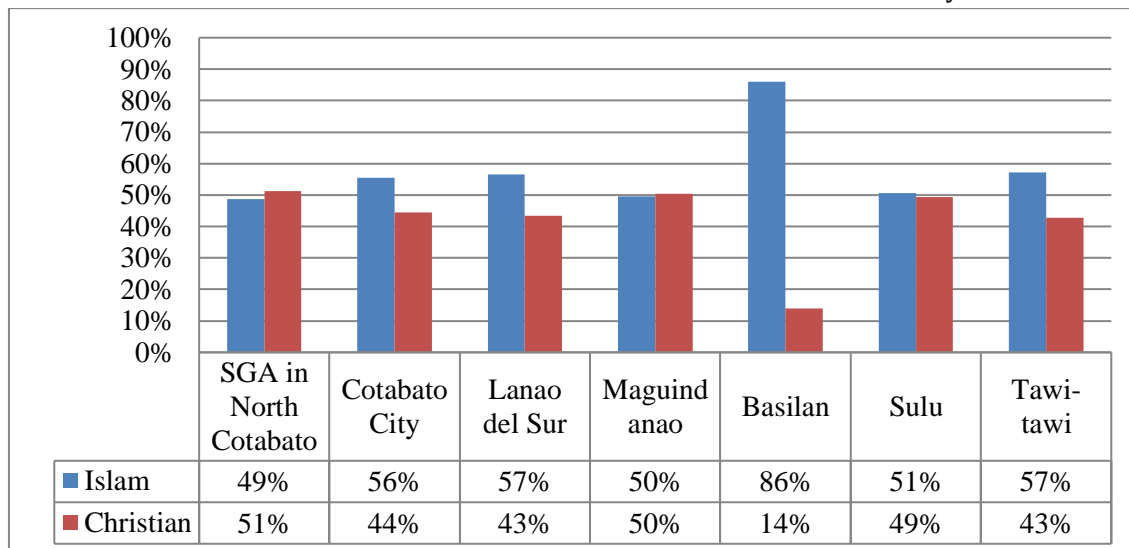


Figure 1. Distribution of Respondents by Religion per Province

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A number of examined scales of knowledge, subjective norm, perceived behavioral control and perceived political influences produced multicollinearity and cross-loadings during the assessment of adequacy and multicollinearity, prompting the removal of items with values lower than 0.50. the removal of scales was believed to improve the model. According to Hair et al. (2014), measured scales with higher loadings have a bigger impact and must be chosen to indicate a construct since the constructs formed in a single category and require a label. Ensuring that the problem was unfounded, another run was employed. The KMO values of 0.955, 0.947, and 0.950, demonstrate the appropriateness of the examined scales for attitude, intention to buy, and consumption of halal food, respectively. It is also important to note that the three components' AVE is 0.894, 0.865, and 0.831, respectively. Therefore, it is appropriate for further research. The proposed measurement model path diagram is shown in Figure 2 and the confirmatory factor analysis consisted of 8 exogenous path factors, 28 correlations, 54 factor loadings, 54 measured scales, and 54 error terms.

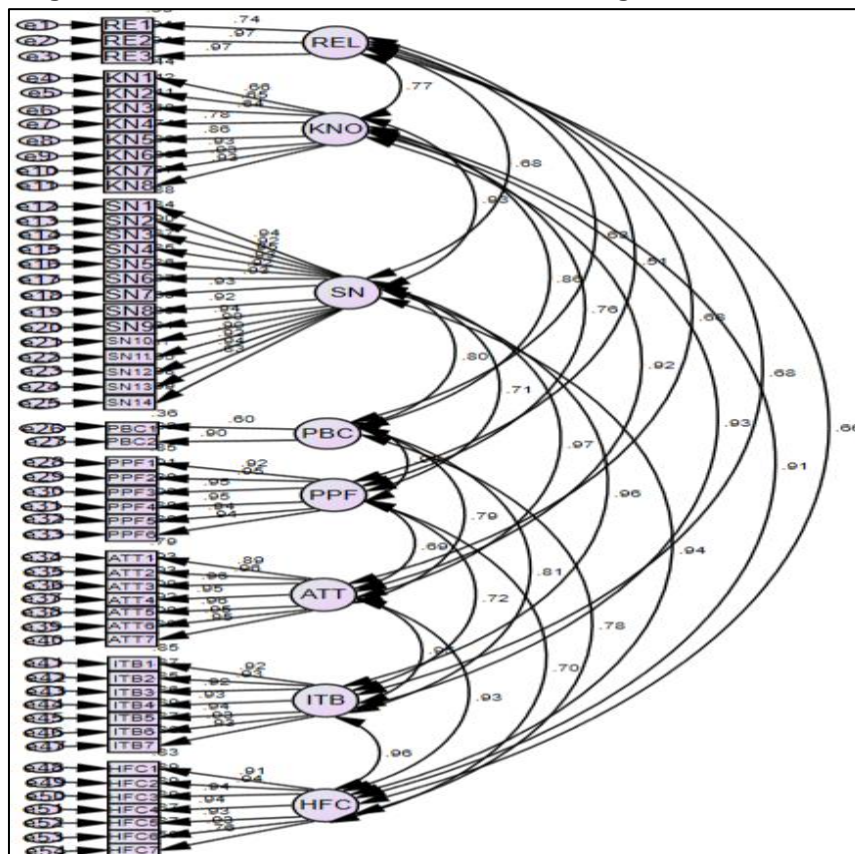


Figure 2. Proposed model with corresponding indicators

The results from AMOS version 22 are presented in Table 2. The value of χ^2 is 6337.5 and df is 1349. This yields a significant p-value of 0.000. In a chi-square (χ^2) test comparing the difference between estimated and observed covariance matrices, Hair et al. (2014) claim that a large p-value (0.05) confirms the model as a representation of the data. Remembering that there were other indicators to assess the model. When taking into account RMSEA of 0.08, which tries to correct the tendency of χ^2 to reject the proposed model because of its smaller p-value, SRMR of 0.046, which is important

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in comparing fit across models, normed χ^2 of 4.698, and CFI of 0.899, which identifies the incremental fit of the model, it was found to be a good fit. The SRMR must also be taken into account, even if a statistical threshold level cannot be established. Hair et al. (2014) added that smaller numbers indicate better fit whereas bigger values indicate worse fit.

Standardized loadings are moreover one of the methods used to assess the accuracy of the research. A value greater than 0.7 is desirable, while variables with values of 0.50 to 0.70 are regarded as reliable. Measurable scales like K1, K2, K3, and PBC1 may be disregarded since they do not meet the requirements and do not make a significant contribution to model fit. The variance may be explained by the remaining theories by a factor greater than 0.5, which is the maximum allowed. The variance of constructs may be explained, on average, by values greater than 0.7. The frameworks work well and may be used to further in-depth analysis.

Table 2. Proposed Measurement Model (PMM) Constructs Output

	Criteria	PMM
	(n=519, m = 54)	
1. Absolute fit		
χ^2 statistic	At least 0.05	χ^2 is 6337.5; df is 1349; <i>p-value</i> is 0.000
RMSEA	0.03 to 0.08	0.08
SRMR	< 0.05	0.046
Normed χ^2	< 5.0	4.698
2. Incremental fit		
CFI	> 0.9	0.899
3. Construct validity		
Standardized loadings	> 0.5 - 0.7	> 0.5
Construct reliabilities	> 0.7	> 0.7
Discriminant validity	> 0.5	K1 is 0.438
		K2 is 0.420
		K3 is 0.412
		PBC1 is 0.358

The measuring model was re-specified in order to create the final set of constructs and measured scales. Three trials and 2 re-specifications were completed and measured scales that were possible for exclusion are consistent, thus, deleted to determine the final measurement model. Figure 3 shows the path diagram of the re-specified model. The results also demonstrated a considerable improvement in absolute fit indices. With $RMSEA_{prop} = 0.084$ and $RMSEA_{resp} = 0.072$, the suggested model and re-specified version fit well. The normed χ^2 remains adequate for both models, however, SRMR improves significantly from 0.084 to 0.028 and CFI improves from 0.899 to 0.934. This indicates that following the second re-specification, the suggested measurement model is more acceptable.

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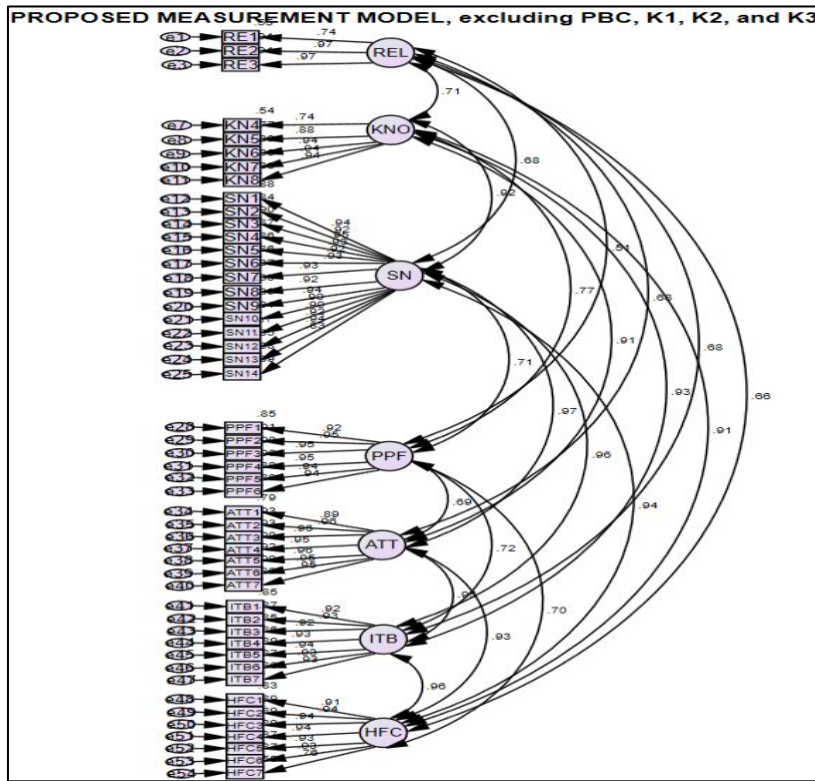
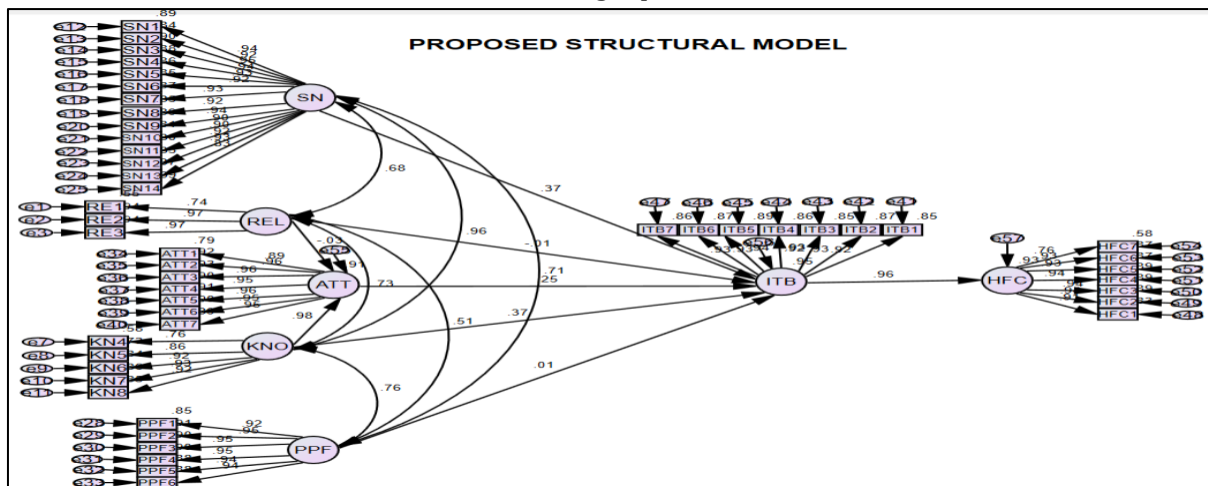


Figure 3. Re-specification of PMM, excluding PBC, K1, K2 and K3

The path diagram was organized following the framework conceptualized for SEM. Variables were treated as exogenous (independent) and endogenous (dependent), the relationships of latent constructs were redefined. The normed χ^2 , CFI, and PNFI indicators, together with the χ^2 statistic, were used to assess the model fit. The recommended structural paradigm for looking at millennial consumer behavior in BARMM is shown in Figure 4. The three measured scales of knowledge construct, as well as the PBC construct, are no longer part of the model.



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Figure 4. Proposed Structural Model of TPB in the local setting

Findings revealed that the proposed structural model has a small *p*-value, signifying the statistical difference between the observed and the estimated matrices. As mentioned earlier, the model should have no statistical difference in the matrices and a large *p*-value of 0.05 is acceptable to have a better model fit. Other measures are considered to test the acceptability of the model. As shown in table 3, the model is acceptable given the RMSEA of 0.076, SRMR of 0.031, and normed χ^2 of 3.992. There is a high value of CFI (0.927) observed and PNFI (0.856) in comparison with the tolerance limit of 0.90 and 0.50, respectively. Hence, acceptability of the proposed model was observed.

Table 3. Goodness-of-fit (GOF) of the Proposed Structural Model (PSM)

GOF (n=519, m = 54)	Criteria	PSM
1. Absolute fit		
χ^2 statistic	At least 0.05	χ^2 is 4443.1; df is 1113; <i>p</i> -value is 0.000
RMSEA	0.03 – 0.08	0.076
SRMR	< 0.05	0.031
Normed χ^2	< 5.0	3.992
2. Incremental fit		
CFI	> 0.9	0.927
3. Parsimony fit index		
PNFI	> 0.5	0.856

Table 4 reflects the relationships and standardized loadings. Table depicting the interaction of external and endogenous components. The results showed that knowledge is positively related and statistically significant to attitude. It was observed that 0.975 of attitude was explained by knowledge. Knowledge, subjective norms and attitude positively relates and statistically significant to intention to buy. The latter construct was highly explained by subjective norms (0.373), followed by knowledge (0.370) and the attitude (0.253). On the other hand, the halal food consumption of millennials was highly explained by the intention to buy (0.963) which can be attributed to the constructs pertaining to it. This supports the use of social media platforms in raising awareness and increasing knowledge on halal concepts and principles, as millennials are highly exposed in it.

Table 4. Proposed Structural Model and its Relationships and Standardized Loadings

Relationship	Estimate	p-value
ATT REL ←	-0.030	0.246
ATT KNO ←	0.975	0.000
ITB ←REL	-0.013	0.536



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ITB	KNO ←	0.370	0.000
ITB	← SN	0.373	0.000
ITB	← PPF	0.006	0.779
ITB	ATT ←	0.253	0.000
HFC	ITB	0.963	0.000

The model was re-specified to discover the optimal fit that may describe the consumption of BARMM millennials on halal. The double-headed arrow that was colored blue in the path diagram reflected the re-specification completed. Using the modification indices, it was done one at a time. Both models satisfied the model fit. Slight improvement in RMSEA (RMSEA_{prop} = 0.076, RMSEA_{MOD1} = 0.074); SRMR (SRMR_{prop} = 0.028, SRMR_{MOD1} = 0.031); CFI (CFI_{prop} = 0.927, CFI_{MOD1} = 0.931); and PNFI (PNFI_{prop} = 0.856, PNFI_{MOD1} = 0.859) were observed for the model 1.

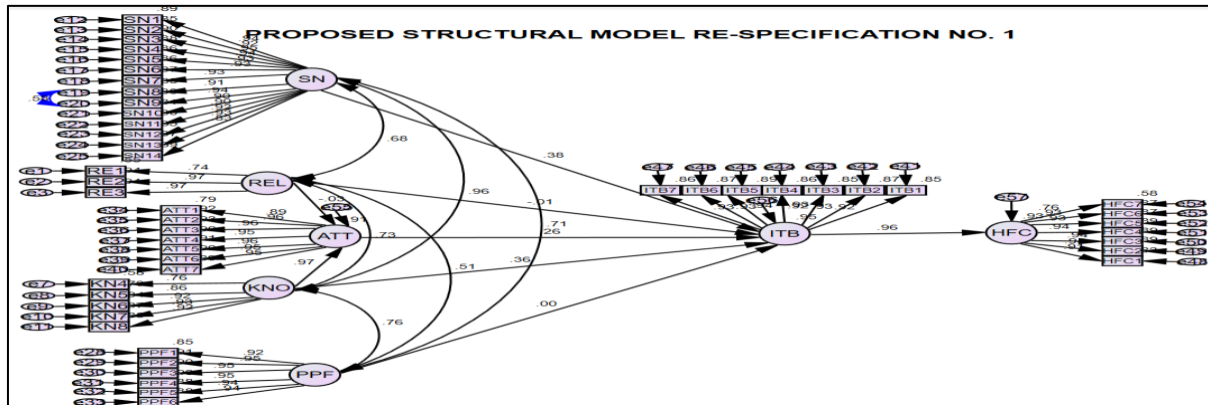


Figure 5 Re-specified Structural Model No. 1 (MOD1)

Table 5 compared the suggested TPB model with MOD1. The results showed that knowledge, subjective norms, and attitudes about purchasing and consuming halal food were statistically significant. The fact that subjective norms and knowledge assessment increases while the others barely changed was also observed.

Table 5 Comparison between PSM and MOD1

Relationship	PSM		MOD1	
	Estimate	p-value	Estimate	p-value
ATT ← REL	-0.030	0.246	-0.030	0.295
ATT ← KNO	0.975	0.000	1.084	0.000
ITB ← REL	-0.013	0.536	-0.013	0.537
ITB ← KNO	0.370	0.000	0.337	0.000
ITB ← SN	0.373	0.000	0.423	0.000
ITB ← PPF	0.006	0.779	0.004	0.829
ITB ← ATT	0.253	0.000	0.247	0.000
HFC ← ITB	0.963	0.000	0.838	0.000

Based on the results, the following equations were developed:

$$\text{Attitudes towards halal} = -0.151 + 1.084 * \text{Knowledge} \quad (1)$$

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$$\text{Intention to buy halal food} = 0.039 + (0.377 * \text{Knowledge}) + (0.423 * \text{Subjective norms}) + (0.247 * \text{Attitude}) \quad (2)$$

$$\text{Halal food consumption} = 0.263 + 0.838 * \text{Intention to buy} \quad (3)$$

The recommended TPB model and MOD1 are contrasted in Table 5. The findings demonstrated the statistical significance of knowledge, subjective criteria, and attitudes toward acquiring and consuming halal food. It was also interesting to see how subjective criteria and knowledge assessments improved while the others scarcely altered.

CONCLUSION

The suggested measurement model was modified and re-specified. The models are accurate and adhere to the necessary restrictions of a sound model. The biggest GOF indicator values were also obtained using the most recent re-specification of the suggested measurement model. The recommended TPB model is then found appropriate in the BARMM and may move on to specification and validation analysis.

The SEM step involved specifying and assessing the structural model validity. Eleven models resulted from the re-specifications. Only the first model, nevertheless, managed to achieve the desired results while also improving them slightly. Other elements from the initial structural model were less significant due to the subsequent re-specifications. The following conclusions were drawn from the analysis:

1. Knowledge was the only factor associated with a halal mindset that was statistically significant. The knowledge construct in the model accounted for 91% of the attitude;
2. The propensity to buy halal food was statistically predicted by knowledge, subjective norms, and attitudes. The accounted 95% of the inclination to purchase halal food items could be explained by the model's three (3) components; and
3. The probability that someone would buy halal cuisine was statistically significant. The 93% of those who eat halal food were described in the model, which included all factors that affect the intention to buy.

Finally, by taking into account different areas, it is possible to assess knowledge, subjective norms, and attitude as factors impacting purchase intention. To test generalizability, additional factors as an extension of the TPB model may be used for other studies connected to behavioral investigations.

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