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Original Research Article

Factors that Influence Acceptance of GM Labels on Halal Food among Muslim Consumers

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Abstract: Genetically modified (GM) foods are produced from the development of modern biotechnology and gene combinations of the same or different species. GM foods have become an important issue among Muslim consumers in consuming *halalan toyyiban* GM foods. This in line with the decision of Muslim consumers in the selection of *halal* food that is closely related to faith, religion and culture in the Islamic society. Labelling on food packaging is an important indicator of every food product in the market by Muslim consumers to determine the halalness of food products. Therefore, this study aimed to determine factors that influence acceptance of GM labels on *halal* food among Muslim consumers. By using purposive sampling, 320 Muslim consumers were selected from the Klang Valley region in Malaysia. An interviewer-administered questionnaire was distributed to the targeted consumers to obtain consumers' responses. Several analyses were employed to analyse the data namely descriptive analysis, Chi-square analysis, Pearson correlation analysis, and factor analysis. This study revealed that the majority of Muslim consumers were not aware of GM labels on *halal* food. The association between Muslim consumers' awareness and their socio-demographic profiles such as age, education level, occupation, and household income were significant. There were also significant associations between Muslim consumers' acceptance of GM labels on *halal* food and socio-demographic factors such as age, education level, and household income. The relationship between awareness and acceptance showed a weak positive relationship. This study also revealed that labelling characteristics, religious belief, and health concern are the three factors that influenced Muslim consumers' acceptance of GM labelling on *halal* food. This study emphasizes that a continuous encouragement to food manufacturers in providing and displaying proper labelling on the food products would assist Muslim consumers to enhance their awareness and acceptance of GM labels and foods.

Keyword: genetically modified food; Muslim; consumers; acceptance; *halal*

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1. Introduction

In today's modern era, various technologies have been created to meet the increasing demands of the world's population. Therefore, genetically modified (GM) foods are introduced as a measure to meet the growing demands of the world's population and to increase the quantity and quality of food. The adoption of GM technology is influenced by global food demand, food security, and ethical beliefs. Nowadays, many foods have been produced using biotechnology methods as GM foods to improve their quantity and quality. Biotechnology cultivation areas have shown an increase of 3%, which is from 444 million acres in 2015 to 457 million acres in 2016 by 28 countries, among others are the United States, Brazil, Canada, China, Argentina, and India (Arujanan & Teng, 2018; James, 2015). Among the main crops involved are corn, soybean, cotton, and canola, which are often imported by Malaysia. According to Wahab (2017), 25% of imported soybeans from Canada are used for tempe production (soy through fermentation process) and soy beverages.

Genetically modified (GM) foods labelled as *halal* means that these foods have been certified *halal* by the Department of Islamic Development Malaysia (JAKIM) and displayed a label or logo of the 'genetically modified food' on the packaging of the food products. However, the issues that are mostly faced by Muslim consumers about GM foods are the use of enzymes, additives, emulsification, and hormones in vegetables or animals in the food products (Khattak *et al.*, 2011). Genetically modified (GM) food products made from or contained substances such as liquor, pork and dead animal blood, are prohibited for Muslim consumers' consumption (Isa & Man, 2014; Mukhtar & Butt, 2012). However, almost all the products produced through biotechnology are said to be safe for consumption and good for health. How far this proclaim is true, lays a question to all of us, especially for those who hold fast to religion. The labelling information displayed on the food packaging serves as a reference to Muslim consumers (Mohayidin & Kamarulzaman, 2014). Most of the food sold in the Malaysian market requires a proper label on the packaging to provide product information to consumers. Malaysia indeed had shown a high commitment to GM foods by issuing policies regarding GM foods labelling. Other countries like Japan, Korea, the European Union and Australia are very obliged to GM labelling, however, countries like the United States and Canada are voluntary labelling countries.

The Ministry of Health Malaysia (MOH) has established the guidelines on the labelling of foods and food ingredients obtained through modern biotechnology (Regulations 11(3A), 11(6) and 11(7), Food Regulations 1985) in 2014. This guidance is to consumers, food manufacturers, and authorized officers under the Food Act 1983. In Malaysia, labelling regulations are applicable to the food which contains, consists of, or is produced from GMO in a proportion of more than the 3% threshold level of the food ingredients. Also, it applies to some products, which contain Genetically Modified Organism (GMO) if the gene is derived from an animal or substance that may cause hypersensitivity. The examples of the ingredient that can cause hypersensitivity are nut products, fish products, milk products, and

egg products. However, no exemption of labelling for some foods such as highly refined foods (corn syrup), food additives (dextrin), acidic food (vinegar), salty foods (soy sauce) and food produced with GM enzyme (cheese). Yet, it is difficult to determine whether the food is produced by genetic modification or conventionally produced. This is because some constituents such as those found in plants will go through purification processes such as sucrose and vegetable oils. The Malaysian Agricultural Research and Development Institute (MARDI) also experimented with producing GM crops such as papayas, bananas, pineapples and rice to extend life expectancy, virus infection and delay maturation (Ismail *et al*., 2012).

The GM foods issues have been widely discussed by the Islamic countries because it is closely related to the status of food based on the guidelines in the al-Quran. Some Islamic researchers debated that GM foods containing pigs or animals that are not slaughtered are prohibited for Muslim consumers. Before selecting food, Islam has outlined the Muslims to choose foods that have *halal* and *halalan toyyiban* criteria. The word *toyyiban* means good, which includes the meaning that the food must be wholesome and pure from its sources. Islam is very concerned about cleanliness and purity because it will affect the health and growth of human beings. The need for GM labels on *halal* foods is important as *halal* label requirements, especially for Muslim consumers to guarantee the foods are originated from *halal* sources. In light of the above issues, this study was conducted to determine the factors that influence acceptance of GM labels on *halal* food among Muslim consumers.

2. Literature Review

Labelling on food products is a primary measure for consumers, especially Muslim consumers to make *halal*, clean, and quality food choices. Baltas (2001) stated that food labelling should display relevant information to prevent chronic diseases and unlawful substances. Moreover, the main goal of food labelling is to protect the welfare of consumers by displaying information about the food in a complete and easy-to-understand way, especially if it affects the health of consumers and to prevent fraud cases (Balasubramanian & Cole, 2002; Cheftel, 2005). Labelling a food item is providing information for consumers to make the right choice and is one of the ways to educate consumers so they can make informed decisions (Wagner & Walchli, 2002). Food product labelling is one of the sources of knowledge to consumers about the use of ingredients, benefits, and effects of food on consumers. Labels also play a role in helping consumers to make nutrient comparisons over the same type of food products according to consumers' requirements and help consumers choose healthier foods (Darkwa *et al*., 2014). Intentions of purchase, product perception, and risk are influenced by the way the label is written (Hellier *et al.*, 2012). Labelling as a direct communication channel to consumers has created awareness and enhancement of information from producers, regulators, public health bodies and third-party certifiers. Also, there is an increase in labelling types related to ethics and morals such as organic, eco-label, and carbon footprint labels (Sirieix *et al.*, 2013; Tonkin *et al.*, 2015).

Understanding about GM foods has not been widely spread among Muslim consumers. Among the problems affecting the knowledge and awareness of GM foods, especially to the public is the information about GM foods, which are difficult to access and obtain (Stenholm & Waggoner, 1992). Besides, Amin *et al.* (2007) identified that the issue of biotechnology is complicated as the public has limited knowledge of GM food products. There are many GM foods in the market, but consumers fail to track their presence due to the absence of labels on the packaging. Moreover, the better knowledge and understanding of the public towards GM foods will facilitate consumers to make selection or rejection of food produced using biotechnology methods (Frewer *et al.*, 2015). The resistance of the Asian countries towards GM foods is lower because the majority of consumers are still unaware of the food using biotechnology advancement (Bongoni, 2016).

The acceptance of GM foods is different across countries. Studies on global GM foods intake revealed that consumers in Western Europe are easily opposed to GM foods intake as compared to consumers in developing countries (Goyal & Gurtoo, 2011; van den Heuvel *et al*., 2011). The availability of GM foods' information is closely related to awareness and consumers' acceptance of the foods (Tanius & Seng, 2015). Consumers' acceptance of GM foods is also influenced by the benefits derived from food technology (Frewer *et al*., 2015). GM foods technology acceptance is strongly influenced by the overall climate change, security and ethical beliefs of the community (Vecchione *et al*., 2015). Hence, awareness of GM foods is different in various aspects, including the country and the nature of the community itself.

3. Methodology

Figure 1 shows the established conceptual framework of this study, which was adapted from the Attitude Model by Bredahl (2001). The Attitude Model is commonly adapted by studies related to attitude and acceptability towards GM foods (Amin *et al*., 2006; Amin *et al*., 2011; Chen, 2008; Christoph *et al*., 2008). Some of the key variables measured by these studies were related to the public attitude, including the impact of technology, knowledge, the effect of labelling, attachment to the religion, moral concern and socio-demographic factors. As further described by the Attitude Model that consumer attitudes are influenced by the perception of benefit and risk as well as awareness and general attitude towards GM foods (Badrie *et al*., 2006).

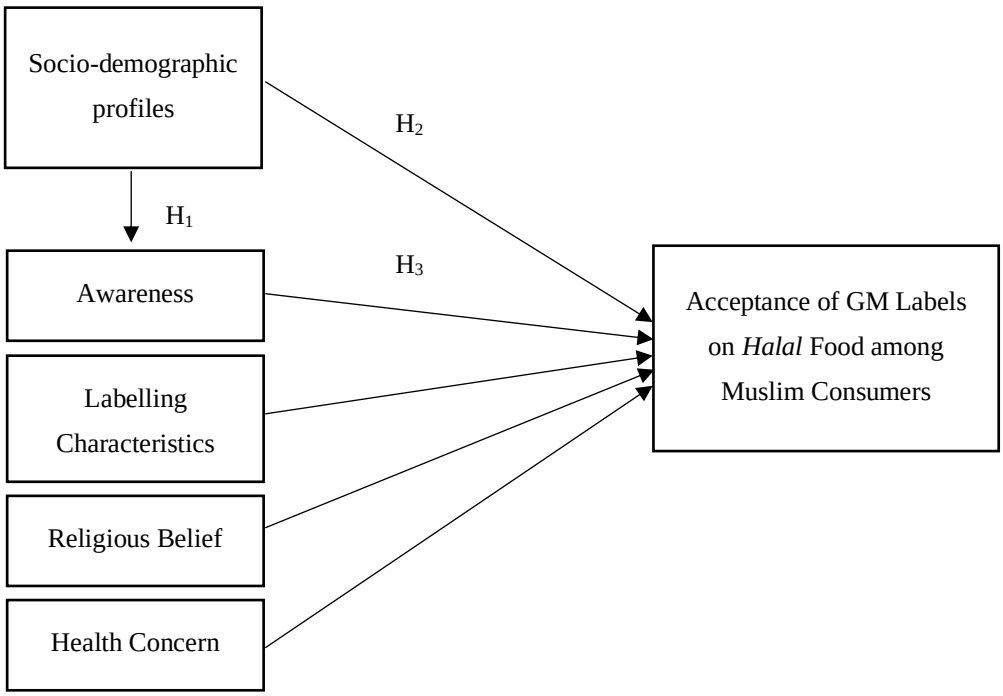

Figure 1. Conceptual framework of acceptance of GM labels on *halal* food among Muslim consumers.
Source: Adapted from Bredahl (2001); Christoph *et al*. (2008); Amin *et al*. (2011); Badrie *et al*. (2006); Chen (2008).

The conceptual framework in Figure 1 shows the independent variables were awareness, labelling characteristics, religious belief, health concern, and socio-demographic profiles, while the dependent variable was acceptance of GM labels on *halal* food among Muslim consumers. The awareness variable was used to measure the relationship with acceptance of GM labelling. The other independent variables such as labelling characteristics, religious belief, and health concern were used as the factors that influence the acceptance of GM labels on *halal* food among Muslim consumers. Besides, socio-demographic profiles such as age, gender, education level, household numbers, and household income were included in the conceptual framework to measure their associations with acceptance of Muslim consumers towards GM labels on *halal* food.

A quantitative survey was used to collect data from target respondents who were selected based on purposive sampling. A total of 320 Muslim consumers who live in Klang Valley, Malaysia were involved in the survey and their awareness and acceptance of GM labels on *halal* foods were measured. Klang Valley area was chosen as the targeted population because it is the center of economic and social development of Malaysia related to biotechnology (Amin *et al.*, 2011). The data for this study was collected via an interviewer-administered questionnaire to obtain responses from the target respondents. The

questionnaire consisted of questions and statements related to consumers' awareness and acceptance towards GM labelling and *halal* food and these questions were established using a 5-point Likert scale (ranging from 1 = strongly disagree to 5 = strongly agree). Data were analyzed using several analyses such as descriptive analysis, Chi-square analysis, and factor analysis. The descriptive analysis was carried out to summarize the socio-economic profiles of the respondents such as gender, age, marital status, household number, education level, occupation, and household income as well as awareness level towards GM foods labelling. Chi-square analysis was conducted to determine the association between socio-demographic profiles and awareness as well as acceptance towards genetically modified (GM) labels on *halal* food. Pearson correlation analysis was carried out to determine the relationship between two variables namely awareness and acceptance of Muslim consumers of GM labels on *halal* food. Factor analysis was conducted to extract factors that influence Muslim consumers' acceptance of GM labelling on *halal* food. The hypotheses established for this study were: -

H_1: There is an association between socio-demographic profiles and awareness of genetically modified (GM) labels on *halal* food among Muslim consumers.

H_2: There is an association between socio-demographic profiles and acceptance of genetically modified (GM) labels on *hala*l food among Muslim consumers.

H_3: There is a relationship between awareness and acceptance of genetically modified (GM) labels on *halal* food among Muslim consumers.

4. Results and Discussions

4.1 Socio-Demographic Profiles of Respondents

From the total of 320 respondents, the results in Table 1 showed that 62.5% of the respondents were female, while 37.5% were male. The respondents' age was around 18-27 years old accounted for 34.4%, followed by 28-37 years old accounted for 47.2% and 38-47 years old accounted for 18.4%, respectively. The marital status of the respondents involved in this study revealed that 54.7% of the respondents were single, 44.4% of them were married and 0.9% were divorced. Mostly, the Muslim respondents' household number consisted of 4-6 persons in every house accounted for 54.4%. The results indicated that on average respondents were well educated since more than half of the respondents have graduated from the university. In terms of occupation, most of the respondents were working in the private sector accounted for 34.9%, followed by students accounted for 30.0%, working in the government sector accounted for 28.8% and the self-employed accounted for 6.3%, respectively. The household income of the respondents indicated that 35.6% of the respondents have income less than RM 2,000 followed by 15.3% who have income RM 2,001 to RM 4,000 per month and 21.3% of the respondents indicated that they earned between RM 4,001 to RM 6,000 per month.

Table 1. Socio-demographic profiles of respondents.

Profiles	Frequency (*n*)	Percentage (%)
Gender		
Male	120	37.5
Female	200	62.5
Total	**320**	**100**
Age (years old)		
18–27	110	34.4
28–37	151	47.2
38–47	59	18.4
Total	**320**	**100**
Marital Status		
Single	175	54.7
Married	142	44.4
Divorced	3	0.9
Total	**320**	**100**
Household Number (people)	96	30.0
1–3	174	54.4
4–6	42	13.1
7–9	6	1.9
10–13	2	0.6
Total	**320**	**100**
Education Level		
SPM	58	18.1
Diploma	88	27.5
Degree	134	41.9
Master	40	12.5
Total	**320**	**100**
Occupation		
Government Sector	92	28.8
Private Sector	112	34.9
Self-employed	20	6.3
Student	96	30.0
Total	**320**	**100**
Household Income		
≤ RM 2,000	114	35.6
RM 2,001–RM 4,000	49	15.3
RM 4,001–RM 6,000	68	21.3

Profiles	Frequency (*n*)	Percentage (%)
RM 6,001–RM 8,000	35	10.9
RM 8,001–RM 10,000	21	6.6
RM 10,001–RM 12,000	18	5.6
RM 12,001–RM 14,000	15	4.7
Total	**320**	**100**

4.2 Awareness of Genetically Modified Labelling Regulation on Halal Food

Based on the results in Table 2, only 83 of the respondents (25.9%) were aware of GM labelling regulation, whereas the remaining 237 respondents (74.1%) were not aware of GM labelling regulation. This finding was similar to the findings of Tanius and Seng (2015) that the majority of consumers were unaware of GM food labelling.

Table 2. Awareness of GM labelling regulation on *halal* food.

Awareness	Frequency (n)	Percentage (%)
Yes	83	25.9
No	237	74.1
Total	**320**	**100**

4.3 Opinion of GM Labels on Halal Food

Based on the results in Table 3, 80.9% (259 respondents) of Muslim consumers responded that GM labels should be labelled on *halal* food packaging, while the remaining 19.1% (61 respondents) indicated that GM labels should not be labelled on *halal* food. As indicated by Tanius and Seng (2015), providing the labels on the products will increase Muslim consumers' awareness of GM foods. The labelling characteristic has two different ways which indicate the absence of GM (negative labelling) for example, 'GM Free', 'Non-GM', or 'All non-GM ingredients'. Meanwhile, labels that indicate the presence of GM (positive labelling), for example, 'Genetically Modified' or 'Genetically Modified: Gene derived from Cow' (Albert, 2009). In this study, Muslim consumers were more preferred positive labelling which showed the presence of GM in the foods. However, according to Runge and Jackson (2000), negative labelling is best suited to inform consumers about GM contents in food.

Table 4. Respondents' opinion of GM labels on *halal* food.

	Frequency (*n*)	Percentage (%)
1. GM *should be* labelled on *halal* food packaging. (positive labelling)	259	80.9
2. GM *should not be* labelled on *halal* food packaging. (negative labelling)	61	19.1
Total	**320**	**100**

4.4 Associations between Respondents' Socio-Demographic Profiles and Awareness of GM Labels on Halal Food

Chi-square analysis was used to determine the association between socio-demographic profiles and respondents' awareness of GM labels on *halal* food. Based on the results of Chi-square analysis in Table 3, four socio-demographic variables namely age (χ^2 = 9.580, p = 0.008), education level (χ^2 = 11.784, p = 0.067), occupation (χ^2 = 16.470, p = 0.011), and household income (χ^2 = 26.144, p = 0.004) were found to have significant associations with respondents' awareness. These variables were significant at 1% and 10% levels of significance, respectively. These findings were similar to the findings of Vecchione *et al.* (2015), who measured the relationship between demographic factors and consumers' knowledge and attitude on GM food products. Further, Tanius and Seng (2015) indicated in their study that consumers' awareness of GM foods was associated with their socio-demographic factors. Meanwhile, other variables such as gender, marital status, and household number were found not significant.

Table 3. Associations between socio-demographic profiles and respondents' awareness of GM labels on *halal* food.

Variable	χ^2	*df*	Significant	Decision
Gender	2.604	1	0.107	Fail to reject H_o
Age	9.580	2	0.008**	Reject H_o
Marital Status	8.783	2	0.132	Fail to reject H_o
Household Number	3.239	3	0.519	Fail to reject H_o
Education Level	11.784	4	0.067*	Reject H_o
Occupation	16.470	3	0.011*	Reject H_o
Household Income	26.144	6	0.000**	Reject H_o

Note: **, * Significant at 1% and 5% levels of significance

4.5 Associations between Socio-Demographic Profiles and Respondents' Acceptance of GM Labels on Halal Food

Chi-square analysis was used to determine the association between socio-demographic profiles and respondents' acceptance of GM labels on *halal* food. The results of Chi-square analysis in Table 4 revealed that out of seven socio-demographic profiles measured, three variables showed significant associations with respondents' acceptance of GM labels on halal food. The three variables were age (χ^2 = 1.592, p = 0.002), education level (χ^2 = 23.719, p = 0.012), and household income (χ^2 = 22.501, p = 0.014). These variables were significant at 5% and 10% levels of significance, respectively. These findings are in line with Font (2009) who revealed socio-economic and demographic profiles such as age, ethnicity, income level, and residence are closely related to GM's perception and acceptance of GM food worldwide. It is further supported by Smigic (2016) that education influenced the attitude towards labelling information on food packaging, while Ali and Kapoor (2009) described that income level makes a difference when consumers looking at information on

labels where low-income consumers are more concerned with product price information and high-income consumers give more emphasis to other information. Meanwhile, other variables such as gender, marital status, household number, and occupation were found not significant.

Table 4. Associations between socio-demographic profiles and respondents' acceptance of GM labels on *halal* food.

Variable	χ^2	df	Significant	Decision
Gender	1.592	1	0.451	Fail to reject H_o
Age	8.480	2	0.076*	Reject H_o
Marital Status	4.740	2	0.578	Fail to reject H_o
Household Number	6.797	3	0.559	Fail to reject H_o
Education Level	23.719	4	0.022**	Reject H_o
Occupation	12.239	3	0.427	Fail to reject H_o
Household Income	22.501	6	0.069*	Reject H_o

Note: **, * Significant at 5% and 10% levels of significance

4.5 Relationship between Respondents' Awareness and Acceptance of GM Labels on Halal Food

Table 5 shows the value of the Pearson coefficient, r = 0.252, indicating a weak positive relationship between awareness and acceptance, but statistically significant (p<0.01) at 1% level of significance. Based on the result, it showed that the relationship between the two variables that exist between the awareness and acceptance of GM labels on *halal* food among Muslim consumers was relatively weak. This finding was in line with a similar study by Hamdan *et al.* (2013) that a weak positive relationship between awareness and acceptance among consumers could be because of the level of education that the consumers possessed.

Table 5. Relationship between respondents' awareness and acceptance of GM labels on *halal* food.

	Correlation	
	Awareness	**Acceptance**
Awareness	1	0.252
Sig. (2-tailed)		0.000***
N	320	320

Note: *** Correlation is significant at the 0.01 level (2-tailed)

4.6 Factors that Influence Muslim Consumers' Acceptance of GM Labels on Halal Food

Factor analysis was used to measure the factors that influence Muslim consumers' acceptance of GM labels on *halal* food. The result of Kaiser-Meyer-Olkin (KMO) obtained was 0.782, which above 0.6 and the Barlett's Test showed the significant level was significant at 0.000. The three factors that influenced Muslim consumers' acceptance of GM labelling on *halal* food were extracted namely labelling characteristics, religious belief, and health concern (Table 6). The cumulative percentage (%) of the variance for the three factors explained by 60.553%, while Cronbach's alpha coefficients were ranged from 0.716 to 0.787 to indicate the internal reliability of the factors.

Table 6. Factors that influence Muslim consumers' acceptance of GM labels on *halal* food.

Items		**Factor Loading**		
		F1	F2	F3
Labelling Characteristics				
i.	I will buy *halal* GM foods if the label is easily understood in terms of the font type and size.	0.788		
ii.	I will buy *halal* GM foods if the label is easily seen and read.	0.824		
iii.	The label serves as an identification card for *halal* GM foods.	0.807		
iv.	The label 'Genetically Modified' is important for me to distinguish between foods based on biotechnology and natural food.	0.675		
Religious Belief				
i.	I am sure that the GM foods that have JAKIM *halal* logo are *halal* to eat even if it has the label 'Genetically Modified'.		0.781	
ii.	I believe food products that have the label 'Genetically Modified' is allowed in Islam.		0.859	
iii.	As a Muslim consumer, I believe that GM foods are *halal* to eat.		0.751	
iv.	The selection of food products that are lawful and good is important for Muslim consumers as outlined by Islam.		0.734	
Health Concern				
i.	I would buy *halal* GM foods if it is good for the health of my family.			0.750
ii.	I need a label 'Genetically Modified' to prevent allergies (allergic to nuts, seafood, milk, eggs).			0.723
iii.	The label 'Genetically Modified' is important for me to ensure it is from a source that is clean, healthy, and holy.			0.704
Eigenvalue		2.877	2.362	1.421
% of variance		26.155	21.477	12.921
Cumulative % of variance		26.155	47.632	60.553
Cronbach's alpha		0.787	0.752	0.716

The first factor extracted was labelling characteristics, which explained about 26.155% of the total variance. This factor consisted of four sub-variables namely "*I will buy halal GM foods if the label is easily understood in terms of the font type and size*" (0.788), "*I*

will buy halal GM foods if the label is easily seen and read" (0.824), "*The label serves as an identification card for halal GM foods*" (0.807), and "*The label 'Genetically Modified' is important for me to distinguish between foods based on biotechnology and natural food*" (0.675). The Cronbach's alpha for the factor was 0.787.

The second factor extracted was religious belief which explained 21.477% of the total variance. The four sub-variables under this factor were "*I am sure that the GM foods that have JAKIM halal logo are halal to eat even if it has the label 'Genetically Modified'"* (0.781), "*I believe food products that have the label 'Genetically Modified' is allowed in Islam*" (0.859), "*As a Muslim consumer, I believe that GM foods are halal to eat*" (0.751), and "*The selection of food products which are lawful and good is important for Muslim consumers as outlined by Islam*" (0.734). The Cronbach's alpha for the factor was 0.752.

The third factor extracted was health concern, which explained 12.921% of the total variance and consisted of three sub-variables. The sub-variables were "*I would buy halal GM foods if it is good for the health of my family*" (0.750), "*I need a label 'Genetically Modified' to prevent allergies (allergic to nuts, seafood, milk, eggs)*" (0.723), and "*The label 'Genetically Modified' is important for me to ensure it is from a source that is clean, healthy and holy*" (0.704). The Cronbach's alpha for the factor was 0.716.

5. Conclusion

Genetically modified (GM) foods have been developed extensively to accommodate world population growth and food supplies including Islamic countries. This has caused Muslim consumers to become more alert and aggressively obtaining information from each food product they consume. This study aimed to determine factors that influence Muslim consumers' awareness and acceptance of GM labels on *halal* food. The findings of this study showed that the majority of Muslim consumers are not aware of the existence of GM labels on *halal* food. The associations between socio-demographic profiles (age, education level, occupation, and household income) and awareness of GM labels on *halal* food showed significant associations. Furthermore, the results of the associations between socio-demographic profiles and acceptance of GM labels on *halal* food indicated that age, education level and household income indicated significant associations. There was a weak positive relationship, but statistically significant between awareness and acceptance of GM labels on *halal* food among Muslim consumers. This study also revealed labelling characteristics, religious belief and health concern are the three factors that influenced Muslim consumers' acceptance of GM labels on *halal* food. These factors are very crucial and could become early indicators for relevant authorities particularly the Ministry of Health Malaysia (MOH) to take necessary actions towards improving Muslim consumers' knowledge on GM labelling. This study emphasizes that a continuous encouragement to food manufacturers in providing and displaying proper labels on food products would assist Muslim consumers to enhance their awareness and thus, accept the GM labels. Furthermore, the information on GM labelling should be channeled through various platforms such as the

internet, television, or radio advertising. By disseminating the right information, it will create high awareness among Muslim consumers before making their purchasing decision on *halal* GM foods that are available in the market. The results of this study are described based on Muslim consumers in Klang Valley only, thus it is suggested that the target respondents should be extended not only among Muslim consumers, but also it could be carried out among non-Muslim consumers in all states in Malaysia.

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