

Malaysian Halal Certification: A Study of Compliance Behavior of Muslim Entrepreneurs

Siti Khalilah Basarud-din

Faculty of Muamalat and Islamic Finance, Kolej Universiti Islam Perlis, Malaysia
E-mail: khalilah@kuips.edu.my

Ram Al Jaffri Saad

Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia, Malaysia
E-mail: ram@uum.edu.my

Abdulrasheed Abdullah Aminullah

School of Business Management, Universiti Utara Malaysia, Malaysia
E-mail: alfarasheed@yahoo.com

Abstract

The halal industry in Malaysia plays a very significant role in its economic growth. It contributed about 8.1% to Malaysia's GDP in 2020. Notwithstanding that, the applications of and compliance with halal certification among Muslim entrepreneurs remains significantly low. Ironically, Muslim entrepreneurs stand to suffer losses of up to 60% due to the absence of the halal logo on their products resulting from their low halal compliance behavior. This study proposes to identify factors affecting the compliance behavior among Muslim entrepreneurs in relation to the Malaysian halal certification. Data were collected through personally administered questionnaires that were distributed to 400 selected Muslim entrepreneurs in Malaysia. Research samples were chosen using random sampling techniques from the list provided by Small and Medium Enterprise Corporation Malaysia (SME Corp). This study used the structural equation model (PLS-SEM) analysis to process the effects of independent and mediator variables on the compliance behavior of the Muslim entrepreneurs. Result shows that there is a positive and significant effect of attitude, social influence, and awareness on the behavioral intention to comply with the Malaysian halal certification. Mediating factors of

attitude and awareness show positive and significant relationships between social influences and the intention to comply with halal certification. Finally, intention also has a significant and positive effect on the compliance behavior of Malaysian Muslim entrepreneurs on halal certification. Research outcomes highlight the importance of local authorities and policymakers enhancing their strategies to ensure more Muslim entrepreneurs comply with the Malaysian halal certification. This study hopes to contribute to existing scholarship particularly on the compliance behavior of halal certification among Muslim entrepreneurs.

Keywords: *Malaysian Halal Certification; Compliance Behavior; Behavioral Intention; Muslim Entrepreneurs; Influencers.*

Introduction

The world has seen Islam as the fastest-growing religion in recent years and the Muslim population is estimated to be at nearly 3 billion by 2060 (Nag, 2020). Currently, the *CIA World Fact Book* (July 2022 est.) records the world population at almost 8 billion people, and out of these, about 25% are Muslims at 1.968 billion. Given this number, the halal market

therefore has a very significant financial value and it is said to be growing exponentially over the past few years. By 2024, it is estimated to be worth USD2.4 trillion (Statista, 2020). In Malaysia, the halal industry is expected to grow by US\$113.2 billion (approx. RM474.53 billion) by 2030 (Nur Haziqah, 2021). As it stands now, the Malaysian HDC (Halal Industry Development Corporation) projected the industry market value to reach USD147.4 billion by 2025. Malaysia has been among the leading countries in the halal industry and the Malaysian Halal Standard has become the forerunner for the development of the world's halal food industries (Islamic Tourism Centre, 2021).

The halal food industry is expected to grow more in the coming years because of the strengthening trend of Muslim consumers' purchasing power as well as the increasing number of Muslim population in Malaysia. The United Nations and Codex Alimentarius Commission referred to Malaysia as the world's best example of benchmarking of halal food (Zakaria, Musa & Abd Gani, 2019; Ngah, Zainuddin & Thurasamy, 2014).

Halal is an Arabic term referring to that which is permissible to be used or consumed under Islamic law. In producing a halal product, there are two aspects to be considered, and they are, the substance and the process. Islamic law prohibits the consumption of some substances, such as, dog meat, pork and blood. These substances are intrinsically unlawful by themselves. There are, on the other hand, substances that are not intrinsically by nature prohibited in Islam, such as, cows and chicken. However, these non-prohibited substances must go through several halal processes in order to be halal. For example, livestock must be slaughtered by following Islamic procedures before being consumed by Muslim. In Malaysia, there are agencies such as Institute of Islamic Understanding Malaysia (JAKIM),

Department of Standards Malaysia (DSM) and Malaysian Institute of Industrial Research and Standard (SIRIM) responsible in developing a comprehensive halal food standard called MS 1500:2004. It is the government's mission to put forward Malaysia as an international halal hub.

Currently, not many food and service providers in Malaysia comply with the established halal standard. Some tend to abuse the halal logo at their premises or on their products (Ibrahim and Othman, 2014). Halal food and service providers need to ensure the provision of "halalan toyyiban" (permissible and good) is implemented on their products and services. Halal service quality instrument that suits with the Malaysian food and service industry can be used by researchers and practitioners across the country in identifying behavior and satisfaction of Muslim consumers and entrepreneurs.

Further, the increasing demand for halal products has become a business phenomenon. Globally, it was reported that the spending on halal products is forecasted to reach USD2.4 trillion by 2024 at a 5-year Cumulative Annual Growth Rate (CAGR) of 3.1% (DinarStandard, 2020). There is a high potential for halal products to expand in the global market as it records the vast value of about USD3 trillion a year (Kamaruldaud, 2016). Recent developments in 2019 revealed that the small and medium enterprises (SMEs) in Malaysia had contributed a total of RM749 billion or 76% of total halal food export (Malaysian Investment Development Authority, 2020). This shows that SME entrepreneurs are considered among the important contributors to the halal market in Malaysia.

Halal certification refers to the process of confirmation with halal standards during the production which covers the preparation, abattoir, materials used,

cleaning, handling, processing, transportation and distribution (Jusmaliani and Nasution, 2010). Halal certification plays significant roles as it gives confidence especially to Muslim consumers and it also increases the revenue of the manufacturers and consequently improves the country economy. Many business industries in Malaysia reap the economic benefits from the Malaysian Halal Standard that facilitates them to trade globally and boost Malaysian economy (Selim, Zailani, Aziz, and Rahman, 2019). Further, Hasan, Sulong and Tanakinjal (2020) stated that halal certification is part of the requirements to be fulfilled by Malaysian SME entrepreneurs in thriving their business either locally or globally. Although halal certification is not mandatory for non-Muslim food providers, the influence of Muslim consumers has nudged them to apply for halal certifications. It has witnessed that about 60% of non-Muslim food operators applied for Malaysian halal certification in 2020. Pertinent to this fact, Muslim entrepreneurs need to adhere to the Malaysian halal

certification issued by the JAKIM to meet the halal market demands.

Despite the high demands for halal products and the efforts by the Malaysian government to realize its goal as the world halal hub, the propensity of Muslim entrepreneurial behavior towards obtaining Malaysian halal certification is at a dismal level (Hasan, Sulong, & Tanakinjal, 2020; Ahmed, Najmi, Faizan & Ahmed, 2019). Table I shows the different numbers between the Muslim and non-Muslim entrepreneurs holding a halal certificate from the year 2015 to 2019. Noticeably, Muslim entrepreneurs who hold halal certification is significantly lower than non-Muslim entrepreneurs. The reason for having halal certificate by non-Muslim entrepreneurs is that halal certificate gives their business a bigger market opportunity and beyond the domestic market. The presence of halal logo on their products provides confidence to Muslim consumers to buy their products and also it able them to compete in the growing market of halal industry.

Table 1. Statistics of Malaysian Halal Certification Holder for Muslim and Non-Muslim Small Medium Entreprises (2015 – 2019)

Year	Muslim	Non-Muslim
2015	263	956
2016	215	1,035
2017	213	1,288
2018	251	1,317
2019	275	1,591
Total	1,217	6,187

Source: JAKIM (2020).

The lower number of Muslim entrepreneurs holding halal certificate is an embarrassing phenomenon and it leads to the question of entrepreneurs' intentions towards compliance with the Malaysian halal certification. Although halal certification is not mandatory for non-Muslim food suppliers, the heightened number of Muslim consumers has increased the number of food operators to apply for halal logo and certifications. Subsequently, in

2020, 60% of non-Muslim food operators held halal certification from the JAKIM. By offering halal products, numerous business organizations attempt to win the Muslim hearts and minds (Wilson and Liu, 2010). There is no distinction between Muslim and non-Muslim consumers in terms of their demand for perfection, reliability and high-quality products other than that, the Muslims adhere to Islamic rules and compliances (Al-Harran and Low, 2008).

This situation should be addressed by Muslim entrepreneurs seriously because all Muslims are obliged to consume halal products. In Malaysia, Muslim entrepreneurs often deal with halal informally. They assume and know the rules at least locally may have the respect of their customers without formal halal. This assumption will be detrimental to Muslim entrepreneurs as there are lot of benefits will be obtained with the halal certification. Among them is the opportunity to export their products to other Islamic countries. The halal logo will be a symbol of responsibility and trust among Muslim consumers. It is also becoming more prevalent and demonstration of product quality in non Muslim market. Thus, as compared to non-Muslim entrepreneurs, they should be more aware of the needs of halal certification for all of their products. The question arises here despite Islamic obligatory to consume halal food and a consumer's needs for halal certification, why is the number of Muslim entrepreneurs holding the halal certification so low compared to their counterparts? Hence, the objective of this research is to identify the factors affecting the behavior of Muslim entrepreneurs to comply with Malaysian halal certification.

Previous research on halal certification is sparse and has only been done by a few studies such as Hasan, Sulong and Tanakinjal (2020), Muda, Rahim, Rahim, Muhammad and Aziz (2020), Othman, Shaarani, Bahron and Nawi (2019), Abu Bakar et al. (2019), Ilyia Nur, Rosli, Suhaimi and Dzulkifly (2012), Mohani, Hashanah, Haslina and Juliana (2009), Mohani, Hashanah and Mazlina (2013), Suhaiza, Azizah and Kopong, (2011) and Sharifah Zannierah, Hall and Ballantine (2012). However, the review of these studies shows that some vital aspects have been neglected. Most of the earlier studies focused on SMEs perception regarding the halal certificate. A few studies by Ilyia Nur

et al. (2012) and Suhaiza *et al.* (2011) only focused on non-compliance behavior among hoteliers.

This study, however, tries to focus on compliance behavior among Muslim entrepreneurs. Other than that, this research also realizes the roles of awareness and attitudes as the mediating factors between social influence and behavioral intentions. To the best of the researchers' knowledge, investigating this relationship has received less attention from previous halal researchers. Finally, insufficient conclusion has been reached by earlier researchers in the halal environment on the matter and it is still difficult to conclude the relationship between intentions and behavior especially towards halal certification compliance behavior. Theoretically, this study aims to test the theoretical model by identifying how entrepreneurs adhere to halal certification. The findings from this study are expected to provide a solid base for understandings among academics, universities, students and Muslim entrepreneurs on certification compliance.

Literature Review

Underpinning theory

To address the research objectives of this paper, we develop a theoretical framework (see Figure 1) based on the theory of planned behavior (TPB) (Ajzen, 1985; Ajzen, 1991). The TPB, which is an extension of the theory of reasoned action (TRA) (Ajzen and Fishbein, 1975) attempts to explain and understand why an individual may undertake a certain behavior (McEachan *et al.*, 2016). According to the TPB, the intention is the most important predictor of behavior, which relates to an individual's motivation or willingness to invest an effort in performing the behavior (Ajzen, 2002). The greater the intention, the more likely an individual is to enact the behavior. The

intention, in turn, is determined by three socio-psychological constructs: attitude, subjective norm and perceived behavioral control (Ajzen, 1991).

The intentions to comply with halal certification should increase as the degree of their awareness and attitude in performing this behavior becomes greater (Adnan *et al.*, 2017). As a general rule of thumb, the more positive the attitude, awareness and social influence, the greater the likelihood of adopting the behavior in question (Ajzen, 1991).

Previous research has shown that attitude, social influence and awareness are positively associated with intentions to comply with halal certification in Malaysia. Haque *et al.* (2015) indicated that the perception of non-Muslim consumers about halal food products is influenced by their attitude, subjective norm and perceived behavioral control, specifically in the context of Malaysia. However, Rezai, Mohamed, and Shamsudin (2012) found various socio-economic/demographic and attitudinal characteristics significantly influenced the likelihood of the respondents' confidence in the degree of halal of manufactured food products that carry the halal logo. Typically, the influence of the TPB constructs on intentions varies depending on the behavior and context of the study (Ajzen, 1991).

Compliance Behavior

Several attempts have been made by previous researchers to understand compliance behavior (see for example Hassan, Naeem & Gulzar, 2021; Badaj & Radi, 2018; Maulana, Razak, & Adeyemi, 2018). Ilyia Nur *et al.* (2012) stated that non-compliance with halal standards is a failure in implementing the halal laws and policies that have been set. Hence, in the context of this study, the behavior of the halal certification compliance is defined as compliance towards the halal regulations or

standards set by conformity to Islamic principles in producing their products.

In the course of examining this line of reasoning, Lada, Harvey Tanakinjal, and Amin (2009) tested the applicability of the TRA in predicting the intention to choose a halal product among Malaysian consumers. Prior works examined many aspects of compliance behavior but did not focus on halal certification and its effect on the behavior of Muslim entrepreneurs in Malaysia (see for example Amin, 2012; 2013; Amin *et al.*, 2013 and Amin *et al.*, 2014).

Malaysia as a role model of an Islamic country is well known for its contribution to the growth of halal industry (Abdul Rahman *et al.*, 2013). Malaysia was a pioneer in the halal food research and it was the first country to introduce halal logo status for a halal product in 1971. Some years ago, the states in Malaysia were able to do their own halal inspections and use the same halal logo issued by JAKIM. Later in 2004, the country issued Halal Standards of MS1500 and became the global halal hub since 2006 in its response to the rapid growth of the global halal market (Ambali and Bakar, 2013).

The full support from the Malaysian government towards the halal industry development facilitates various agencies like JAKIM, DSM and SIRIM to develop its halal certification in accordance with Islamic laws prescriptions (Abdul Aziz and Chok, 2013). This is a government program with a fee for service and a set of rules reflecting the ideas of the government of Malaysia. The government also has made it mandatory for all food products which are claimed as halal to have the JAKIM's halal logo and certifications. Hence, this research focuses on the factors that affect Muslim entrepreneurs' compliance behavior with Malaysian halal certification which is believed to be under the control of entrepreneurs' intentions.

Intention

Intentions are intent to do or do something (Seman, 2013) and it comes before an action that is taken later (Asyqar, 2002). Intention is an essential factor that has to be understood before behavior and actions are interpreted. Ajzen and Fishbein (1980) stated that the leading cause of behavior is the intention. In other words, the intention is the best predictor of behavior (Ajzen, 1991). According to Soesilawati (2010), intention dominates the motivational factors that influence behavior and it shows how one is eager to perform his or her actions or behavior.

In Islam, the intention is very important as the Messenger of Allah (pbuh) once said:

“Verily, the reward of deeds depends upon intentions. And indeed, for every person is his reward according to what he intended. So, whoever migrated for Allah and His Messenger then his migration is to Allah and His Messenger. Whoever migrated for worldly benefits, he gets the world, or for a woman, he gets to marry her. For one’s migration is what he migrated for.” (Muhammad bin Ismail Abu Abdullah al-Bukhari al-Ja’fari (2003), Kitab al- Aiman Wa al-Nazar, no. Hadis 6689).

Several studies in zakat compliance behavior (such as Majeed, Ghuman Abbas & Ahmad, 2021; Saad, Farouk & Abdul Kadir, 2020; Saad *et al.*, 2019;) found that intention have a positive and significant relationship with behavior. Therefore, this research looked into the intention of Muslim entrepreneurs towards complying with Malaysian halal certification as well as how it affects their behavior to comply with halal certification. We state our hypotheses as follows:

H1: The intention to comply should have a significant positive

relationship with compliance behavior.

Social Influences

Social influences refer to social pressure perceived by an individual, whether he/she is going to perform or not such a behavior (Ajzen, 1991). Social influences also refer to one’s beliefs that are influenced by others’ perception of behavioral being either excellent or vice versa (Ajzen and Fishbein, 1980). These influences can come from various referral groups such as spouses, parents or friends who are most likely advise, give opinion and support individual to act. TBP recognizes the importance of social norms in influencing individual behavior in general.

However, it can be noted that the role of social influence has rarely been examined in the context of compliance behavior. An earlier study by Davis (1989) investigated the conditions and mechanisms governing the impact of social influences on behavior. Other studies have modified social influence to predict customer-oriented outcomes (Sakib, Zolfagharian, and Yazdanparast, 2019; and Liu and Qu, 2019). Previous studies discusse more on personal compliance rather than business compliance (includes all form of business eg. sole proprietorship, partnership or corporation) towards the social influence. It is quite difficult to see directly, the impact of social influence on business compliance as the buisnesses are not a human entity. Business owners however, are human beings. They will certainly be exposed to social influences that will influence them in making decisions for the business.

This study appoints that social influence is expected to affect Muslim entrepreneurs’ beliefs on the compliance of Malaysian halal certification in the form of consent, opinion, supports and advice period. The following hypothesis is proposed and will be further tested in this research:

H2: Social influences should have a significant positive relationship with the compliance behavioral intention.

Attitude

Attitude is an essential determinant in influencing an individual's intention to behave (Ajzen and Fishbein, 1980). Ajzen (1991) defines attitudes towards behavior as the favorable or unfavorable judgments of an individual towards an object of attitudes. Fishbein and Ajzen (1975) defined attitude as a tendency to act consistently, being it is favorable or unfavorable, to an object or thing. Attitude towards behavior in the opinion of Ajzen and Fishbein (1980), is the individual's favorable or unfavorable evaluations of the behavior in question. In TBP, attitude is considered as the first determinant of individual intention to act or otherwise. Therefore, attitude towards behavior is the estimation of positive or negative self-evaluation towards certain behavior which also largely depends on whether such behavior is positively or negatively honored, and it is determined by a total set of permissible behavioral beliefs associating it to many outcomes (Abbas and Abdurrahman, 2013; Fishbein and Ajzen, 1975).

The review of existing literature showed that only a few studies had adopted a research model which examined attitude towards compliance behavior within the context of TPB (D'Arcy and Lowry, 2019). Even though many studies examined the relationship between attitude and willingness to use of a particular product, only a few of them focused on the antecedents of attitude that influence its formation towards compliance behavior (Kornilaki and Font, 2019). Previous studies by Pampel, Andrighetto, and Steinmo (2019) and Farouk, Md Idris and Saad (2018) had established the

relationship between attitude and zakat compliance behavior.

In this research, social influence is seen to have a relationship with the intention of compliance behavior through attitudes as a mediating variable. Previous studies found that social influence is positively and significantly associated with behavioral intentions through attitudes in various fields (see for example Peng, Lu and Kang 2013 and Hamari and Koivisto (2015)). In this regard, this research examines the mediating effect of attitude on the relationship between social influence and the entrepreneurs' compliance behavior with Malaysian halal certification. Hence, we test the following hypothesis:

H3: Attitude should have a significant positive relationship with the compliance behavioral intention.

H4: Attitude will mediate the relationship between social influence and compliance behavioral intention.

Awareness

Awareness is defined as having or showing realization, perception or knowledge of the states or facts (Aida and Rosidah, 2013). Awareness can also be described as contextual attention to oneself or others (Sheldon, 1996). In other words, one is aware of himself and others (Nor Ardyanti, Tunku Nashril and Mohd Helmi, 2013). The word of awareness in the context of halal means someone who is having a special interest, experiencing and/or being well informed with halal foods, drinks and products. As such, awareness is described as human perception and cognitive reaction to a condition of what they consume. Furthermore, awareness is a concept where a person may be partially aware, subconsciously aware or may be acutely aware of issues relating to the halal aspect

that is permissible by Allah. It may focus on an internal state, such as a visceral feeling about external events or issues by way of sensory perception. Awareness becomes the source to develop subjective ideas about one's experience related to a subject matter (Omar *et al.*, 2017). Awareness, therefore, is an essential part of human life.

In other words, awareness is the processes of notifying the general population about a subject matter such as to increase the level of consciousness about risks that could endanger human life and how people react to it. So, awareness in the context of halal can be conceptualized as the informing process to increase the level of consciousness toward what is permitted for a Muslim to consume. For a better understanding of this concept, it is interesting to discuss it from different sources of how human beings can be conscious of something in the next section of the paper. Awareness is one's concern for what is happening around him which can affect one's intentions to do something.

Further, awareness in this study was also tested as a mediator. Several areas of research have examined awareness variable as a mediator. Haeussinger and Kranz (2013) found that the awareness of information systems control will mediate the relationship between the background of

the institution, the individual and the environment and the intention to comply with the information system security. Sharifi (2014) also found that brand awareness is positively related to consumers' intention to buy branded products. Meanwhile, Shabbir, Khan and Khan (2017) clarified that brand equity is linked to brand loyalty and brand image through brand awareness. Though few previous researches tested the awareness variable as a mediator connecting between social influence and behavioral intentions, it is hard to find a similar test in the halal context. Therefore, it is desirable to test this relationship in this study. Hence, the hypothesis is tested as follows:

H5: Awareness should have a significant positive relationship with the compliance behavioral intention.

H6: Awareness will mediate the relationship between social influence and compliance behavioral intention.

The framework of the study was developed based on the proposed hypothesis from literature highlights. The framework in Figure 1 clarifies the relationship between independent variables, mediators and dependent variables.

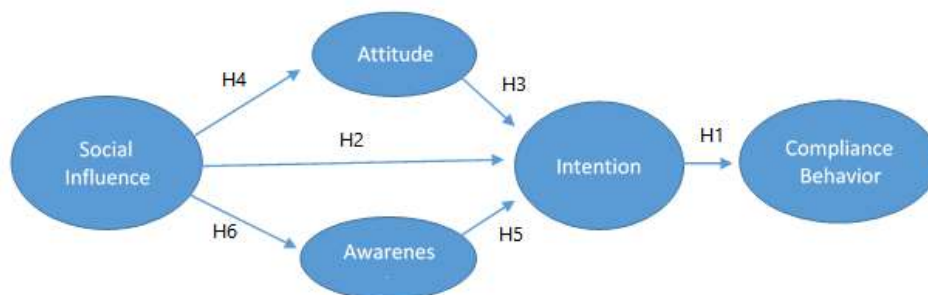


Figure 1. Research framework of the study. H1, H2, H3, H4, H5 and H6 = Hypothesis 1, Hypothesis 2, Hypothesis 3, Hypothesis 4, Hypothesis 5 and Hypothesis 6.

Methodology

Data Collection Procedures

The data were collected through a survey instrument. The questionnaire comprised of 64 questions in 8 pages covered the variables emphasized in the proposed model about the determinants that affect the compliance behavior with Malaysian halal certification among Muslim entrepreneurs.

The research utilised a simple random sampling technique to select the samples from 5,866 Muslims SMEs listed by SME Corp. Simple random sampling is a procedure that each element in the population has an equal chance to be selected as a sample (Sekaran and Bougie, 2011). In total, 400 questionnaires were distributed for this study, and a total of 389 responses were returned. The huge return rate was due to the collection of the data through a personally administered questionnaire and it was sent to the business owner by hand. Out of the 389 responses, 17 were discarded because of the questionnaires were incompleting thus, leaving a total of 372 valid responses or a 93% usable response rate. Sample of the study comprised of Muslim entrepreneurs who produce halal food or beverage products in the market. Due to its exploratory nature of this study, the research model was tested by applying the most appropriate technique which is the PLS-SEM (Hair, Ringle and Sarstedt, 2011). This study used the software named Smart PLS version 3.0 to run the PLS-SEM.

There are two steps involved to analyze the data. The first step is to analyze the model for measurement purposes and the second step is to evaluate the relationships among the structures of the underlying constructs (Awang *et al.*, 2016). The reliability and validity analyses were done to measure the relationships within the model. The respondents were asked to indicate the

extent of their agreement with the statements presented in the questionnaire using five-point Likert scale (from strongly disagree = 1 to strongly agree =5). The pretest was conducted with three academicians who were not part of the authors had confirmed the face validity and content validity of the variables. They were expert in language, field of halal study and finally expert with questionnaire technique. They commented on the appropriateness of the language used and ensure the questions were free from ambiguity so that the content validity is satisfied.

Next, the variables of intention behavior and attitude were assessed by adapting the four and six instrument items respectively from Saad *et al.* (2010). Adapting here means the instruments were modified from previous study to suit with halal environment and context of the study. Meanwhile, the awareness variable was measured by adapting the 5 instrument items from Salman and Siddiqui (2011) and lastly, the four instrument items to measure the social influence was adapted from Saad *et al.* (2010).

Respondents' Profile

The final sample consisted of 372 respondents of which the majority were between 21-30 years (34%), the male population was (55%) and owning fast food businesses (25%). In term of education background, 50% of respondents have a diploma (2-3 years educational program generally offered by collages and educational institutions), 18% of respondents have a degree course (3-4 years of academic course awarded by a university), 9% have a master degree and other qualifications of 24%. All respondents were Muslim.

Results and Discussion

Measurement Model

This study follows the three-stage procedures for assessing the measurement model of PLS-SEM approach for its data analysis which comprises of convergent and discriminant validities. Hair, Ringle, and Sarstedt (2011) suggested that the indicator loadings (factor loadings) ought to be greater 0.70 (Hair *et al.*, 2014). Relying on the above recommendations, this study adopts the threshold of 0.70 for

the loadings. Table 2 shows factor loading for all constructs are above 0.70 and ranging from 0.787 (Attitude) to 0.885 (Awareness). Convergent validity was measured by scrutinizing the average variance extracted (AVE) and the composite reliability (CR) of 0.70 (Sarstedt *et al.*, 2014). It was justified by Chin (1998) that an AVE of more than 0.5 and a CR of 0.7 or beyond are reckoned as satisfactory.

Table 2. Validity and Reliability Analysis

Construct	No. Item	Factors Load	AVE	CR
Attitude	6	0.787-0.858	0.666	0.923
Social Influences	4	0.815-0.883	0.787	0.916
Awareness	4	0.802-0.885	0.696	0.902
Intention	5	0.817-0.862	0.718	0.927
Behavior	4	0.836-0.859	0.724	0.913

Note: N = 372

Table 3. Discriminant Validity

	Behavior	Awareness	Intention	Social Influence	Attitude
Behavior	0.851				
Awareness	0.547	0.834			
Intention	0.683	0.603	0.847		
Social Influence	0.387	0.368	0.479	0.855	
Attitude	0.494	0.663	0.666	0.400	0.816

Note: The bold value is the load for each item that exceeds the recommended value of 0.5.

Table 3 displays the results of the discriminant validity proposed by Fornell and Larcker (1981). The value of the discriminant validity test which is highlighted in bold indicates that the average value of the two-dimensional variant extracted for all constructs has a higher value than the other construct observed either in the same column or row.

For example, the average value of the two-dimensional variant for Intention of 0.847 is higher than other value of 0.683 and 0.603 observed in the same row and also higher than the value of 0.479 and 0.666 found in the same column. This suggests that discriminant validity has been achieved in this study.

Table 4. Hypothesis Testing Results

Hypothesis	Path Hypothesis	Path Coefficient	Error	T-Value	P-Value	Decision
H1	Intention->Behavior	0.683	0.087	4.573	0.000*	Accepted
H2	Social Influences->Intention	0.206	0.059	3.474	0.001*	Accepted
H3	Attitude->Intention	0.396	0.396	4.984	0.000*	Accepted
H4	Awareness->Intention	0.177	0.086	2.045	0.041**	Accepted

Note: *significant at $p < 0.01$, **significant at $p < 0.05$

Structural Model

Table 4 shows that for the hypothesis H1, there is a positive and significant relationship ($\beta = 0.683$; $t = 4.573$; $p < 0.01$) between the intention and the compliance behavioral. It also witnessed that social

influences ($\beta = 0.206$; $t = 3.474$; $p < 0.01$), attitude ($\beta = 0.396$; $t = 4.984$; $p < 0.01$) and awareness ($\beta = 0.177$; $t = 2.045$; $p < 0.05$) are positively and significantly associated with intention. This indicates that the hypotheses H1, H2, H3 and H5 were accepted and supported in this study.

Table 5. Test of Mediation

Hypothesis	Path	Coefficient	T-Value	Mediator
H4	Social Influences->Attitude->Intention	0.400	8.141***	Accepted
H6	Social Influence->Awareness->Intention	0.370	7.473***	Accepted

Note: significantly at *** $p < 0.001$.

In Table 5, the results show that attitude ($\beta = 0.400$; $t = 8.141$; $p < 0.001$) and awareness ($\beta = 0.037$; $t = 7.473$; $p < 0.001$) as

mediators have a positive and significant relationship in this study and thus, these findings support hypotheses H4 and H6.

Table 6. Mediator Effect of Attitudes And Awareness

Hypothesis	Path	Mediator Effect
H4	Social Influences->Attitude->Intention 0.400 0.396	Partial
H6	Social Influences->Awareness->Intention 0.370 0.177	Partial

The mediator effect can be calculated through variance accounted for (VAF) as suggested by Hayes and Preacher (2014) and Preacher and Hayes (2004; 2008). The VAF value is useful in determining the level of mediating effects. If the VAF value is less than 20%, it indicates that there is no mediating effect taken place. On the other hand, if the VAF value is over than 80%, the variable is considered to have fully mediated in the relationship of study. However, if the VAF value is in between 20% and 80%, it is categorized as having a partial mediating effect.

$$\text{VAF} = \frac{\text{Indirect effect}}{\text{Total effect}}$$

Table 6 shows the results of the mediating effect which is derived from the above formulae for VAF. It is found that the VAF value for the H4 and H6 are 0.43 and 0.24 respectively. Both VAF values of 0.43 (43%) and 0.24 (24%) fall in the range of 20% to 80% or categorized as partially mediated. This means that social influences have 43% of the impact on intentions through attitudes and 24% of the impact on intentions through awareness. In conclusion, the hypotheses of *H4:Attitude will mediate the relationship between social influence and compliance behavioral intention* and *H6:Awareness will mediate the relationship between social influence and compliance behavioral intention* in this study are accepted and reveals that attitudes and awareness have mediated the

relationship between social influence and intention.

Conclusion and Limitations

Understanding the socio-psychology in the decision-making process of Muslim entrepreneurs is critical to encourage them to comply with halal certification (Golnaz, Zainalabidin, Mad Nasir, and Eddie Chiew, 2010; Nursalwani and Zulariff, 2017; Rezai, Zainalabidin, Nasir, and Chong, 2010). However, failure to understand attitudes, awareness and social influence and how they impact on intention, may cause a challenge in designing an effective policy and offering a behavioral change solution (Khalek, 2014; Perdana, Jan, Altunişik, Jaswir, and Kartika, 2019; Teng, Heng, and Abdullah, 2019). The results of this study show the majority hypotheses are validated, and they confirm the importance of intention, attitude, social influence and awareness as the driving factors influencing Muslim entrepreneur's decision making processes (Khalek, 2014; Mohamad Azizan and Mohd Suki, 2013; Othman, Md. Shaarani, and Bahron, 2017; Rahim, Shafii, and Shahwan, 2013).

The results of the analysis show that all of the hypotheses (H1, H2, H3, H4, H5 and H6) in this study are supported. Results also show that all of the factors discussed have a positive and significant impact on compliance behavior which contribute to halal certification implementation. This means that there is a positive and significant effect of Muslim entrepreneurs' attitude, social influence and awareness on intention to comply with Malaysian halal certification. Meanwhile, attitude and awareness as mediating factors have a positive and significant relationship between social influences and intention. Finally, intention is also found to have a significant and positive effect on the compliance behavior with Malaysian halal certification among Muslim entrepreneurs.

The findings of the study are hoped could assist government authorities and policymakers to propose policies and strategies that will enhance awareness and attract Muslim entrepreneurs to comply with Malaysian halal certification. High compliance among Muslim entrepreneurs with Malaysian halal certification is expected to boost their business and may consequently contribute to national economic growth.

This study extends the literature by examining the socio-psychological determinants of Muslim entrepreneur's intentions in engaging with halal markets and also by examining the causal relationships between social influences and the TPB constructs. We argue that this approach is better suited to understand the complexities of Muslim entrepreneur's decision making and to prescribe potential policy and behavioral intervention strategies.

As a whole, this study provides some significant implications. First, it clearly shows that the attitudinal factors can be prioritized to absorb human attitudinal considerations in strengthening the implementation of halal practice in Malaysia. The awareness to comply with halal requirement should also be supported by the government through its underlined policies and agencies and/or organizations that cater to the issues of halal. Besides that the increasing demand for halal food products has become a business phenomenon that influences local and international markets to meet high demand of halal product.

What is happening now is that the compliance behavior with halal certification by product manufacturers in Malaysia is still low. This give a negative impact on the development of the halal industry where if they fail to comply with halal certification, their products will not be able to compete in the halal market abroad.

In order to change this situation, the finding of this study could give the idea to the government on how to increase the intention of the product manufacturers to comply with the halal certification.

Entrepreneurs with strong intentions are more likely to comply with Malaysian halal certification. Therefore, halal institutions need to organize strategies to increase compliance behavior among entrepreneurs so that appropriate measures can be taken to increase the level of compliance behavior. Increasing the level of compliance behavior will affect the halal industry by producing many products and entrepreneurs who can market their goods to other countries.

Therefore, halal institutions need to organize effective measures continuously to encourage entrepreneurs to have a strong determination to comply with Malaysian halal certification. Disclosure of knowledge on the importance of halal certification needs to be done so that they are ready to implement and comply with Malaysian halal certification. In addition, halal institutions can work with government institutions or NGOs that are always in touch with these entrepreneurs such as FAMA, MADA, Amanah Ikhtiar, MARA, MARDI, Tekun and so on. Through this collaboration, halal institutions can gather these entrepreneurs to participate in programs such as mentor-mentee programs, dakwah programs, halal consolidation classes, halal entrepreneur courses and so on to channel information directly to entrepreneurs. Such programs are directly expected to increase the understanding and intention of entrepreneurs to comply with Malaysian halal certification.

Second, for the implication to the theory and literature, this study has supported that the TPB is suitable for the study in halal food-based industry in Malaysia. These findings are consistent with past literature, where the application of the theory yielded

impressive outcomes. In the TPB theory, it proves that attitude, social influence, and perceived behavioral control are suggested to influence behavioral intentions directly. Additionally, this research finds that there are relationships between social influence and intention to comply with Malaysian halal certification through attitudes and awareness. However, indirect relationships are still poorly tested in the halal field especially in the halal certification context. The findings of this research are different from the original theory of TPB which suggested that attitude and social influences are the only constructs that have a direct relationship with behavioral intentions. This study can add to the literature in areas related to the performance of Muslim entrepreneurs in compliance with halal certification based on human factors ranging from intention, attitude and social influence.

However, there are some limitations related to this research, such as this study only covers a few variables, and the survey sample was limited only to Muslim entrepreneurs. Thus, it is recommended that future studies include other variables like religiosity, legal consciousness, and perceived behavioral control in their research. The survey also can include non-Muslim entrepreneurs as the sample of the study, which is expected to produce a different result of analysis.

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