

# Extending the Theory of Planned Behaviour to Examine Factors Influencing Intention to Purchase Halal Chocolate Among Malaysian Muslims

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## ABSTRACT

**Manuscript type:** Research paper

**Research aims:** The purpose of this study is to examine factors influencing intention to purchase halal chocolate among Muslim consumers in Malaysia by extending the classical Theory of Planned Behaviour (TPB). This study specifically investigates the influence of attitude, subjective norms, perceived behavioural control, halal knowledge, habit, and religiosity on the intention to purchase halal chocolate.

**Design/Methodology/Approach:** A total of 252 valid responses were obtained through convenience sampling and analysed using SmartPLS 4.0.

**Research findings:** The results indicate that attitude, subjective norms, and religiosity are the factors that influence purchase intention for halal chocolate, while perceived behavioural control, halal knowledge, and habit do not. Subjective norms have the strongest influence on purchase intention for halal chocolate, followed by attitude.

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**Theoretical contribution/Originality:** The findings contribute to the growing literature on halal food and consumer behaviour. In particular, the study provides empirical evidence on the importance of attitudes, subjective norms, and religiosity in influencing purchase intentions for halal chocolate.

**Practitioner/Policy implications:** This study could serve as a basis for halal chocolate manufacturers, retailers, exporters, and importers to better understand Malaysian Muslim customers and the factors that drive them to purchase halal chocolate. Furthermore, the government and related agencies, such as the Malaysian Cocoa Board (MCB), could devise strategies to re-establish and strengthen the country's cocoa industry, allowing Malaysia to reclaim its position as the world's leading cocoa producer.

**Research limitation/Implication:** This study includes six variables that influence halal chocolate purchase intention. Future studies could include other internal and external factors influencing purchase intention, such as the role of the halal certification logo.

**Keywords:** Halal Chocolate, Halal Food, Intention, Malaysia, Muslim  
**JEL Classification:** M30, M31

## 1. Introduction

Islam, as a religious belief, places great emphasis on the practises and lifestyle of its followers and specifies what is permitted and what is prohibited. Everything that is permissible for Muslims is called halal, while everything that is forbidden is called haram. Halal and haram have become two important ethical considerations for Muslims in their daily lives, which include guidelines and restrictions on food. The concept of halal food, which refers to food that is considered permissible and lawful according to Islamic dietary rules, has great significance within the Muslim community. The aforementioned act is generally considered a divine mandate and a concrete expression of their religious beliefs. In contrast, the term haram refers to foods that are categorically forbidden and should be avoided. Followers of Islam are therefore obliged to consume only foods that are classified as halal and to stay away from those that are classified as haram. The concept of halal food has resulted in a well-established and growing global halal food business.

The halal food business has reached a certain level of maturity, even as it continues to expand globally. According to Herminingsih (2023), the global halal food industry reached \$2,221.3 billion (RM10,590.05 billion) in 2022 and is expected to grow at a rate of 11.1% to reach \$4.1 trillion (RM19.55 trillion) by 2028. The data presented highlights the significant potential of the global halal

sector. The expansion of the halal food industry has led to a corresponding increase in scholarly attention to this subject matter. This is evidenced by the spate of research dealing with various aspects of halal food, as shown by the following works of Ali et al. (2018), Ali et al. (2020), Aslan (2023), Khan et al. (2021), Nursalwani and Zulariff (2017), and Syukur and Nimsai (2018). Despite the considerable expansion of this important industry, the scholarly discourse on halal food is still nascent (Haleem et al., 2020). Thus, there is still much room for further research to be explored.

This study focuses on chocolate consumption, which has received little attention among researchers. Chocolate is a staple food loved and enjoyed by many, and it is the most consumed sweet treat in the world. The global chocolate industry was estimated to be worth \$127.9 billion (RM609.76 billion) in 2023, with annual global chocolate consumption at 7.5 million tons (Dame Cacao, 2023). While Switzerland is recognised as the world's leading chocolate consumer, Malaysians are known for their sweet tooth and high chocolate consumption in Southeast Asia (Martinus, 2021). Malaysians consume an average of 0.5 kg per person per year, slightly higher than neighbouring countries like the Philippines and Indonesia, which report a consumption of 0.3 kg (Durai, 2022). This reflects Malaysia's high chocolate consumption, but the country's cocoa production is insufficient to keep up with the demand. In fact, Malaysia was once a significant cocoa producer in the 1980s, but now relies on over 98% of cocoa imports for domestic consumption (Grow Further, 2022). The increasing reliance on imported cocoa raises the volume and value of imported cocoa (The Malaysian Reserve, 2023). According to the Malaysian Cocoa Board (MCB) (2023), the amount of chocolate imported by Malaysia increased in both volume and ringgit from 28,951 tons equivalent to RM634,510 in 2021 to 35,524 tons equivalent to RM881,047 in 2022.

The increased import volume of chocolates into the country has exposed Malaysian Muslims to a variety of chocolates that are not known to be halal or haram. Although religion's influence on food consumption is contingent on how individuals perceive and adhere to their religious beliefs (Bonne & Verbeke, 2008), it is estimated that 70% of Muslims worldwide follow some restrictions related to halal foods (Minkus-McKenna, 2007). Those Malaysian Muslims who are heavily influenced by Islamic principles are highly selective and closely monitor the halal status of their food (Bukhari et al., 2019) and would hesitate to make a purchase if they were uncertain about its halal status (Susanty et al., 2023), including chocolate. Malaysian

Muslims are well-known for their religious zeal and dietary restrictions (Suki & Suki, 2023) and are quick to report and seek clarification on the halal status of imported chocolate (Abdul Mutalib, 2017; Bernama, 2016; Nik Min, 2023). This apprehension has caused the study to be conducted to address the concerns of Malaysian Muslims about the halal status of chocolate.

Due to the context of halal chocolate, this study seeks Malaysian Muslims' perspective on the subject. In addition, Malaysia has a sizable Muslim population, making the Muslim consumer group the most prominent within the country. According to the Department of Statistics Malaysia (2022), the Malaysian Muslim population constitutes 63.5%, or approximately 21.5 million individuals, out of the total population. Due to its substantial population and considerable purchasing power, this particular section emerges as an appealing subject for scholarly investigation, especially when it comes to halal issues.

With all that said, this study was conducted to assess the factors that contribute to the purchase intention of halal chocolate among Muslims in Malaysia. This study employs the extended framework of the Theory of Planned Behaviour (TPB) to investigate the factors that affect the intention to purchase halal chocolate among Malaysian Muslims. The concept under discussion, initially introduced by Ajzen in 1985, serves as an expansion of the Theory of Reasoned Action (TRA) developed by Fishbein and Ajzen (1975, 1980).

According to the TPB, behavioural intentions are shaped by three core factors: attitude towards the behaviour, subjective norms, and perceived behavioural control. Collectively, these three components exert an influence on individuals' intentions and subsequently mould their tangible actions by means of their convictions regarding the likelihood of desired results aligning with their personal values. Hence, it is crucial to do a deeper investigation in this domain, specifically emphasising halal chocolate, to acquire a more comprehensive comprehension of the fundamental factors that impact the purchasing intents of Malaysian Muslims.

The primary goal of this study is to extend the classical TPB model to examine the factors that influence Malaysian Muslims' purchase intentions toward halal chocolate. Specifically, the study investigates the relationship between attitudes, subjective norms, perceived behavioural control, halal knowledge, habit, and religiosity in influencing halal chocolate purchase intention. The findings of this study will contribute to the current academic understanding of halal food consumption, purchasing intention, and consumer

behaviour by conducting a thorough examination of the underlying elements that impact these phenomena. Furthermore, it is expected that the results will have practical implications for manufacturers and vendors of halal food, providing them with useful insights to enhance their understanding of customers and the factors that impact their decision-making process when purchasing halal chocolate.

The following section of this paper investigates the literature review, with a specific focus on prior research conducted on the topic of halal food. This study also investigates the TPB as a foundational framework and assesses the impact of attitudes, subjective norms, perceived behavioural control, halal knowledge, habit, and religion on customers' intentions to purchase halal foods. Subsequently, the upcoming part presents the research methodology, outlining the procedure of data collection and the analytical approach utilised to investigate the correlations between the stated parameters and the propensity of Malaysian Muslims to engage in the purchase of halal chocolate. The final component of this study discusses the conclusions, implications, and limitations, emphasising its significance for academic researchers and industry professionals in the dynamic halal food market.

## **2. Literature Review**

### **2.1 Theory of Planned Behaviour (TPB)**

Ajzen (1985) established the TPB, which builds on Fishbein and Ajzen's TRA (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). Both the TRA and the TPB are social psychological theories that are the best known and most widely used models of the relationship between attitude and behaviour. The TRA assumes that intention is a direct predictor of behaviour, and that intention is a direct function of individual and social variables. The TPB, on the other hand, is a theory composed of three key concepts: attitude towards behaviour, subjective norm, and perceived behavioural control, all of which contribute to the formation of a behavioural intention that influences actual behaviour. In short, according to both models, behaviour can be predicted by intention. People tend to behave in a certain way when they believe that certain behaviours will lead to certain outcomes that are consistent with their values.

Much of the research to date uses the TPB to investigate the intention to consume and purchase halal food (Ali et al., 2020; Ali et al., 2018; Aslan, 2023; Khan et al., 2021; Nursalwani & Zulariff, 2017; Syukur & Nimsai, 2018). However, within the TPB framework,

research findings are still mixed (Fachrurrozie et al., 2023). They differ in terms of research factors, measurement instruments, and sampling, resulting in disparate results. In view of the contradictory empirical research results, a study addressing this issue is still necessary and relevant. Therefore, further research using the TPB as an underpinning theory to study halal food consumption is needed.

Previous studies have identified three key predictors for understanding halal food: halal knowledge, habit, and religiosity. Halal knowledge has been included in studies by Salehudin (2010) and Krisna et al. (2023). While habit has been added to studies by Al-Banna (2019), Ali et al. (2020), and Fachrurrozie et al. (2023). Religiosity has been examined in studies by Alotaibi and Abbas (2022), Jensen et al. (2019), and Suleman et al. (2021). Following the preceding studies, the study expanded the TPB to include halal knowledge, habit, and religiosity as additional constructs relevant to the intention to consume halal chocolate.

## 2.2 *Intention*

As the driving force behind human behaviour, intention remains the focus of intensive research in a variety of disciplines (Nawang & Moess, 2023). The construct was originally developed in the context of TRA and TPB. Ajzen (1985) defines intention as attempting rather than actually performing a specific behaviour. It is the desire to do something in order to own, dispose of, or use goods or services. According to Fishbein and Ajzen (1975), the intention to enact a specific behaviour can predict that behaviour. A person who recognises that the outcome of performing a behaviour is positive will have a positive attitude, belief, and perspective on the behaviour, whereas a negative outcome will produce a negative attitude toward the motivating factors that influence a specific behaviour. The greater the desire to engage in the behaviour, the more likely it will occur.

Intention is defined in this study as the consumer's willingness or inclination to consume halal chocolate in the future. Additionally, attitude, subjective norms, perceived behavioural control, habit, halal knowledge, and religiosity are predicted to influence this intention.

## 2.3 *Attitude*

Attitude is the consumer's assessment of the behaviour under consideration. More specifically, it is the extent to which a person evaluates or appraises the behaviour in question positively or negatively (Fishbein & Ajzen, 1975, p. 6). The more positive the attitude, the more likely a person is to engage in the behaviour in

question. In this study, it is hypothesised that a person's attitude has a favourable or unfavourable influence on their intention to buy halal chocolate.

In halal food research, a plethora of studies have examined the association between attitude and intention (Ali et al., 2018; Ali et al., 2020; Nursalwani & Zulariff, 2017; Sari et al., 2022). Although there is ample evidence that attitude is the best predictor of intention (Ali et al., 2020; Fuadi et al., 2022; Nursalwani & Zulariff, 2017; Sari et al., 2022), however, Ali et al. (2018), Aslan (2023), and Harun et al. (2023) found that attitude did not predict intention in their study. Thus, due to the contradictory results, the impact of attitude on purchase intention should be further investigated. This leads to the following hypothesis:

*H<sub>1</sub>: Attitude has a positive relationship with the intention to purchase halal chocolate.*

## **2.4 Subjective Norms**

A subjective norm is social pressure to commit to or refrain from engaging in specific behaviours (Ajzen, 1991). Subjective norms are social in nature because a person's decision to act is influenced by the opinions of those who matter to him or her, as well as the perception of social pressure to act in a certain way (Lim & An, 2021). Parents, families, friends, and religious groups are examples of influential actors and groups. In this study context, subjective norms are intended to assess the extent to which the approval or disapproval of an important person or influential group would influence the intention to buy halal chocolate.

A wealth of studies has investigated the role of subjective norms in influencing purchase intention for halal food (Ali et al., 2020; Ali et al., 2018; Aslan, 2023; Khan et al., 2021; Nursalwani & Zulariff, 2017; Shah Alam & Mohamed Sayuti, 2011; Syukur & Nimsai, 2018). A number of studies have confirmed the influence of subjective norms on customer purchase intention (Ali et al., 2020; Ali et al., 2018; Fuadi et al., 2022), while Jang and Cho (2022), Kasri et al. (2023), Khan and Azam (2016), and Zayed et al. (2022), albeit not specifically concerned with halal chocolate, found that subjective norms do not predict intention. Therefore, the influence of subjective norms on the intention to buy halal chocolate should be further researched. Hence, the following hypothesis is put forth:

*H<sub>2</sub>: Subjective norms have a positive relationship with the intention to purchase halal chocolate.*

## 2.5 *Perceived Behavioural Control*

Perceived behavioural control refers to the individual's judgment of how simple or challenging it is to perform the desired behaviour Ajzen (1991). In other words, perceived behavioural control guides a person's perception of how to perform an intended behaviour. The likelihood of performing a particular activity is higher when the person feels that he or she has the necessary resources to perform that activity or behaviour. In the context of this study, this means that a person who feels they have more control over their behaviour when deciding to buy halal chocolate is more likely to do so.

Past scholars have examined the impact of perceived behavioural control on the intention to purchase halal food (Ali et al., 2020; Ali et al., 2018; Aslan, 2023; Bhutto et al., 2023; Damit et al., 2019; Khan et al., 2021; Nursalwani & Zulariff, 2017; Shah Alam & Mohamed Sayuti, 2011; Suleman et al., 2021; Syukur & Nimsai, 2018; Zayed et al., 2022). The results of previous studies examining the influence of perceived behavioural control on intention are complex, and these studies have provided mixed results. Damit et al. (2019) and Suleman et al. (2021) found that perceived behavioural control influences the intention to purchase halal food, but Aslan (2023), Bhutto et al. (2023), and Zayed et al. (2022) found otherwise. Because of the inconsistent results, the findings of one study cannot be extrapolated to others. The relationship between these two variables should therefore be further investigated. Consequently, the following hypothesis is forwarded:

*H<sub>3</sub>: Perceived behavioural control has a positive relationship with the intention to purchase halal chocolate.*

## 2.6 *Halal Knowledge*

Religious knowledge is a decisive factor influencing consumerism (Essoo & Dibb, 2010). For Muslims, knowledge about halal is an even more crucial factor that helps in making purchasing decisions for halal products and services. Khan et al. (2022) classified halal food purchasing knowledge into halal awareness (knowledge about halal products) and halal literacy. The former is related to companies' marketing efforts and product availability in the market, while the latter emerges as a result of religious teachings about what constitutes halal and what constitutes haram. Halal literacy refers to the perceived understanding of Shariah laws regarding what is halal and haram (Salehudin, 2010). Halal knowledge is essential because it encourages consumers to purchase halal food (Krisna et al., 2023).

A number of studies that have looked at halal foods have examined the influence of halal knowledge and purchase intention, but their studies have yielded inconsistent results. Elias et al. (2016) and Khan et al. (2022), for example, discovered that halal knowledge influences the intention to buy halal food, but Maichum et al. (2017), Pratiwi (2018), and Wibowo et al. (2020) found the opposite. Because of the contradictory results, further research is needed on the relationship between these two variables. As such, this hypothesis is postulated:

*H<sub>4</sub>: Halal knowledge has a positive relationship with the intention to purchase halal chocolate.*

## **2.7 Habit**

Scholars have given various definitions to define habits. Neal et al. (2006, p. 198) defined a habit as “a response disposition that is automatically activated by the context cue that has occurred in the past along with the response.” Other researchers have defined habit as a behaviour that occurs automatically and outside a person’s awareness (Bonne et al., 2007). In short, a habit is a habitual or routine behaviour that is repeated on a regular basis and often goes unconsciously or unnoticed by those who exhibit it because routine tasks do not require self-analysis. Conner and Armitage (1998) were the first to advocate for the inclusion of habit measurement as a predictor of behaviour in the TPB model. Following on from this, several subsequent studies applying TPB to food-related behaviours have successfully included habit as an independent predictor of intentions (Al-Banna, 2019; Ali et al., 2020; Ali et al., 2017; Bonne et al., 2007; Fachrurrozie et al., 2023; Hall & Sevim, 2017; Vanany et al., 2020).

However, results on the effect of habit on the intention to buy halal food are mixed. Al-Banna (2019) and Hall and Sevim (2017) found that these two variables were significant, while Ali et al. (2017), Bonne et al. (2007), Fachrurrozie et al. (2023), and Vanany et al. (2020) found otherwise. Due to the contradictory results, the influence of habit on purchase intention should therefore be further investigated. Accordingly, the following hypothesis is proposed:

*H<sub>5</sub>: Habit has a positive relationship with the intention to purchase halal chocolate.*

## 2.8 Religiosity

Religion is significant in social life because it contains attitudes that shape its members in all aspects of social life. Past studies have established that religion is an important indicator in any decision-making process, as it serves as a basis for lawful and ethical behaviour. In studying religion, scholars differentiate between religion and religiosity. In general, religion is of divine origin, while religiosity is a specifically humanistic approach and model of behaviour. Religiosity can also play a more dominant role than religion (Pace, 2014). Religiosity is defined as the degree to which a person engages in organised religious activities (religious practice), the degree to which their religion impacts their behaviour (religious influence), and the degree to which, in a religious sense, a person feels hopeful (religious hope) (Jensen et al., 2019). As such, religiosity is seen as a fundamental and underlying factor that influences people's attitudes and behaviours. Religious influences can also strongly affect consumer behaviour and purchasing decisions (M et al., 2022).

Religiosity consists of two dimensions: intrinsic and extrinsic. According to Allport and Ross (1967, p. 434), "an extrinsically motivated person uses his religion, while an intrinsically motivated person lives his religion." That is, for the former, religion is an instrumental value, whereas, for the latter, it is an ultimate value. People with extrinsic motivation use religion to further their own goals, whether hedonic (e.g., social contacts, distraction) or utilitarian (e.g., personal status, business interests), rather than to realise religious values. People who have intrinsic motives, on the other hand, evaluate religious teachings based on their intrinsic worth rather than tailoring their religious beliefs to their personal interests.

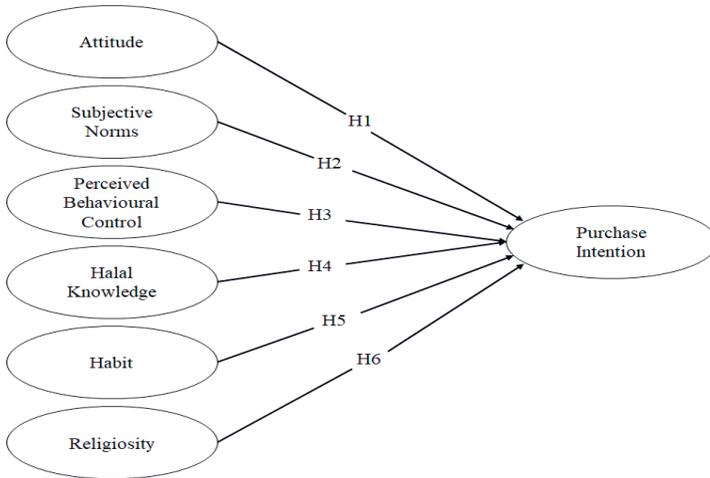
Several studies examine the relative importance of religiosity in halal food purchase decisions. Alotaibi and Abbas (2022) and Suleman et al. (2021) reported that religiosity has a significant impact on explaining purchase intention for halal food. In contrast, Khan et al. (2022) and Khan and Azam (2016) discovered that religiosity does not influence halal food purchase intentions. Therefore, the following hypothesis is purported:

*H<sub>6</sub>: Religiosity has a positive relationship with the intention to purchase halal chocolate.*

## 2.9 Conceptual Framework and Hypotheses

Figure 1 depicts the research model that was used to achieve the aim of the study and the hypotheses that were made. This model and its hypotheses were created and developed in response to the discussions in the literature review section.

Figure 1: Conceptual framework and hypotheses



## 3. Methodology

### 3.1 Sample and Data Collection

This study aims to examine factors that influence Malaysian Muslims' intention to purchase halal chocolate. Muslims in Malaysia were selected as the primary target population for the study because Muslims constitute the majority of the country's population (Department of Statistics Malaysia, 2022). To achieve the objective of the study, an online survey was conducted using a questionnaire. The survey was created in Google Forms, and the link to the survey was shared on various social media platforms, such as Facebook and WhatsApp. The online survey was chosen because it enables the quick, effective, and inexpensive gathering of large amounts of data from many people. In addition, the online survey has a validation feature to ensure that all responses are complete, and no values are missing.

In terms of this study's sample, Hair et al. (2018) recommend a minimum sample size of 100 if the model contains five or fewer

constructs and 150 if the model has seven or fewer constructs. Hair et al. (2018) also suggest the use of G-power software to determine the required sample size, considering effect size and predictive power analysis. In the case of this study, power analysis was conducted using G-power on six predictors:  $\alpha = 0.05$ , effect size  $f^2 = 0.15$ , and a power of 0.80 (Faul et al., 2007), resulting in the desired sample size of 55. By using non-probability sampling with convenience sampling techniques, 252 responses were generated in the data collection of this study, and the recommended sample size was achieved.

Responses in this study were restricted to Muslims only, as the study is interested in examining Muslims' intentions to purchase halal chocolate. Thus, the survey was designed specifically for Malaysian Muslims over the age of 18. Accordingly, two filtered questions, "Are you 18 years old and above?" and "Are you Muslim?" were included to ensure that only Muslim respondents aged 18 and above responded.

### **3.2 Research Instrument and Data Analysis**

This study used a questionnaire with three main sections. The first section asked general questions about the demographic data of the respondents (including gender, age, income, marital status, and highest education obtained). The second section of the questionnaire contained questions about the factors that determine the intention to purchase halal chocolate. All items were adopted and adapted from past studies to fit the Malaysian context. Respondents were asked questions on a five-point Likert scale ranging from "1" (strongly disagree) to "5" (strongly agree). The items were as follows: four items measuring attitude, four items measuring subjective norms, and four items measuring perceived behavioural control were all from Ajzen (1991), six items measuring halal knowledge were from Salehudin (2010), four items measuring habit were from Verplanken and Orbell (2003) and Honkanen et al. (2005), and four items measuring religiosity were from Ji et al. (2007). Also, three items measuring the intention to purchase halal chocolate were from Ajzen (1991). To verify the questionnaire's reliability, a pilot study was conducted with a small group of consumers at random, and no major changes were made.

This study used variance-based partial least squares structural equation modelling (PLS-SEM) to investigate the hypothesised relationship between the variables using SmartPLS 4.0 software in a two-stage approach – the measurement model and the structural model. From the literature, PLS path modelling is appropriate for

this study as it incorporates TPB theory. The framework had six independent variables that were tested for the dependent variable (intention to purchase halal chocolate). PLS-SEM is known for its robustness to data problems such as multicollinearity (Cassel et al., 2000) and non-normally distributed data (Semeijin et al., 2005).

## 4. Findings

### 4.1 Respondents' Profile

Table 1 shows the profiles of the respondents who participated in the survey. From the data, the majority of the respondents were female and constituted 75% of the total participants. Of the respondents, 61.5% were between 18 and 24 years of age, 19.8% fell in the 25 to 34 age group, and 13% were between 45 and 54 years of age. In terms of marital status, the largest group of respondents was single (74%), followed by married (25%), and divorced or widowed (1%). In terms of ethnicity, Malays formed the majority at 95.6%, while the remaining 3%, 1%, and 0.4% of respondents belonged to another minority, Indians and Chinese, respectively. In terms of monthly income, 62% of the respondents reported having a monthly income of less than RM1,000, while 38% earned more than RM1,001. In terms of education level, the majority of the respondents had a bachelor's degree (61%), followed by those with STPM/A-levels/certificate/foundation/matriculation/diploma at 26.5%, those with Master's/PhD at 11%, and those with primary/secondary/O-Level/IGCSE at 1.5%. None of the respondents had a professional qualification, but all had received formal education.

**Table 1: Respondents' profile**

Demographic		Sample	
		Frequency (N = 252)	Percentage (%)
Gender	Male	63	25.0
	Female	189	75.0
Age	18-24	155	61.5
	25-34	50	19.8
	35-44	13	5.0
	45-54	32	13.0
	55 and above	2	0.70

Demographic		Sample	
		Frequency (N = 252)	Percentage (%)
Marital Status	Single	186	74.0
	Married	64	25.0
	Divorced/widowed	2	1.0
Ethnicity	Malay	239	95.6
	Chinese	1	0.40
	Indian	4	1.0
	Others	8	3.0
Income	Less than RM1,000	156	62.0
	RM1,001 – RM2,000	25	10.0
	RM2,001 – RM3,000	15	6.0
	RM3,001 – RM4,000	12	4.8
	RM4,001 – RM5,000	6	2.3
	RM5,001 – RM7,500	20	7.8
	RM7,501 – RM10,000	11	4.4
	RM10,001 and above	7	2.7
Highest Education Level	No formal education	0	0.0
	Primary/Secondary/O-Level/IGCSE	4	1.5
	STPM/A-Levels/Certificate/Foundation/ Matriculation/Diploma	67	26.5
	Bachelor's Degree	154	61.0
	Masters/PhD	27	11.0
	Professional Certificate	0	0.0

## 4.2 Structural Equation Modelling Partial Least Squares (SEM-PLS)

### 4.2.1 Assessment of the Measurement Model

According to Hair et al. (2011; 2019), to examine the measurement model, the researcher must check the reliability of the individual items, internal consistency, content validity, convergent validity, and discriminant validity. Table 2 describes the reliability and convergent validity of the entire PLS path model. All indicators are above the recommended loading value of 0.70 (Hair et al., 2017), with the exception of Halal4 (0.667), which had a low loading and was deleted.

Cronbach's Alpha is the most common method for assessing reliability and is determined by the average intercorrelations between items that quantify the concept (Sekaran & Bougie, 2016). In general, a reliability of less than 0.60 is considered poor, a reliability in the range of 0.70 is considered acceptable, and a reliability above 0.80 is considered good (Sekaran & Bougie, 2016). Hair et al. (2018) proposed that the rule of thumb for reliability is 0.70 or higher. The Cronbach's Alpha values for this study, shown in Table 2, range from 0.835 to 0.932. The composite reliability is also above the satisfactory value of 0.80.

Fornell and Larcker (1981) also suggest assessing convergent validity with the average variance extracted (AVE). According to Chin (2010), AVE must have a value greater than 0.50 to establish the convergent validity of a concept. Table 2 shows the AVE values obtained for this study, indicating that the construct of this study has values between 0.670 and 0.881; therefore, it is concluded that this study has adequate convergent validity.

**Table 2: Measurement model**

<b>Constructs</b>	<b>Items</b>	<b>Loadings &gt; 0.70</b>	<b>AVE &gt; 0.50</b>	<b>Composite Reliability &gt; 0.80</b>	<b>Cronbach's Alpha &gt; 0.7</b>
Attitude			0.747	0.921	0.886
	Att1	0.860			
	Att2	0.740			
	Att3	0.922			
	Att4	0.922			
Subjective Norm			0.819	0.948	0.926
	SN1	0.900			
	SN2	0.887			
	SN3	0.902			
	SN4	0.931			
Perceived Behavioural Control			0.802	0.942	0.917
	PBC1	0.903			
	PBC2	0.930			
	PBC3	0.918			
	PBC4	0.827			

Constructs	Items	Loadings > 0.70	AVE > 0.50	Composite Reliability > 0.80	Cronbach's Alpha > 0.7
Halal Knowledge			0.727	0.930	0.908
	Halal1	0.847			
	Halal2	0.906			
	Halal3	0.890			
	Halal5	0.772			
	Halal6	0.843			
Habit			0.670	0.890	0.835
	Habit1	0.806			
	Habit2	0.765			
	Habit3	0.867			
	Habit4	0.833			
Religiosity			0.740	0.919	0.882
	REL1	0.884			
	REL2	0.883			
	REL3	0.772			
	REL4	0.896			
Purchase Intention			0.881	0.957	0.932
	INT1	0.951			
	INT2	0.956			
	INT3	0.908			

The discriminant validity of the model was then assessed using the Heterotrait-Monotrait (HTMT) criteria. The threshold for the HTMT between two latent constructs should be less than 0.90 (Henseler et al., 2009; Sarstedt et al., 2017) to demonstrate discriminant validity. In this study, the HTMT values ranged from 0.597 to 0.829, which is below the threshold of 0.90, indicating that the construct meets the criteria for discriminant validity (Hair et al., 2017; Henseler et al., 2015). The results of the discriminant validity assessment using the HTMT are presented in Table 3.

**Table 3: Assessment of discriminant validity**

Construct	1	2	3	4	5	6	7
1. Attitude	0.864						
2. Habit	0.654	0.819					
3. Halal Knowledge	0.602	0.656	0.853				
4. Perceived Behavioural Control	0.597	0.630	0.692	0.896			
5. Purchase Intention	0.690	0.757	0.693	0.656	0.938		
6. Religiosity	0.676	0.806	0.731	0.666	0.829	0.860	
7. Subjective Norm	0.728	0.745	0.720	0.698	0.801	0.798	0.905

#### 4.2.2 Assessment of the Structural Model

The estimates of path coefficients indicating the hypothesised relationships between the constructs were obtained. For this purpose, the researcher applied the bootstrapping procedure (n = 252, sample = 5000) as suggested by Hair et al. (2017). Figure 2 shows the full estimates of the structural model, and Table 4 describes the results of the proposed structural model in terms of the standard error of the path coefficients and the t-statistics.

**Table 4: Direct relationships for hypothesis testing**

Hypotheses	Std Beta	Std Error	t-values	p-values	5% (LLCI)	95% (ULCI)	Decision
H1 Attitude → Purchase Intention	0.102	0.108	2.022	0.043	0.026	0.190	Supported
H2 Subjective Norm → Purchase Intention	0.256	0.256	3.316	0.001	0.128	0.381	Supported
H3 Perceived Behavioural Control → Purchase Intention	0.043	0.041	0.844	0.398	-0.040	0.129	Not Supported

Hypotheses	Std Beta	Std Error	t-values	p-values	5% (LLCI)	95% (ULCI)	Decision
H4 Halal Knowledge → Purchase Intention	0.050	0.049	0.913	0.361	-0.036	0.140	Not Supported
H5 Habit → Purchase Intention	0.126	0.122	1.579	0.114	0.004	0.262	Not Supported
H6 Religiosity → Purchase Intention	0.389	0.389	4.512	0.000	0.245	0.530	Supported

Based on the results presented in Table 4, three hypotheses were supported with a t-value > 1.645,  $p < 0.05$ . The first hypothesis, H1, states that attitude is positively related to purchase intention. The results in Table 4 and Figure 2 show a significant positive relationship between attitude and purchase intention ( $\beta = 0.102$ ,  $t = 2.022$ ,  $p = 0.043$ ), supporting H1. The results also show a positive relationship between subjective norm and purchase intention ( $\beta = 0.256$ ,  $t = 3.316$ ,  $p = 0.001$ ). Thus, H2 was also supported. Similarly, hypothesis H6 states that religiosity and purchase intention are positively related ( $\beta = 0.389$ ,  $t = 4.512$ ,  $p = 0.000$ ). In contrast, three hypotheses were not supported, namely H3, H4, and H5. Perceived behavioural control, knowledge about halal, and habit are not significantly related to purchase intention, and the path coefficient is also somewhat low.

The assessment of how much of the variance in the endogenous latent variable is explained by the coefficient of determination, or R-squared ( $R^2$ ) (Hair et al., 2011, 2018; Henseler et al., 2015). Different experts have said that the value of  $R^2$  shows how much variation in the dependent variables can be explained by one or more predictor variables (Hair et al., 2018). Hair et al. (2018) note that the amount of  $R^2$  value that is acceptable depends on the context of the research being conducted.  $R^2$  values range from 0 to 1, with 1 being the highest (most accurate) value for predictive accuracy (Hair et al., 2017). A rule of thumb for an acceptable  $R^2$  of 0.75, 0.50, and 0.25 is generally described in academic marketing articles as substantial, moderate, and weak, respectively (Hair et al., 2017). In the present study, the  $R^2$  value was 0.75, which means that attitude, subjective norm, perceived behavioural control, halal knowledge, habit, and religiosity predicted 75% of the variance in intention.

Figure 2: Results of structural model

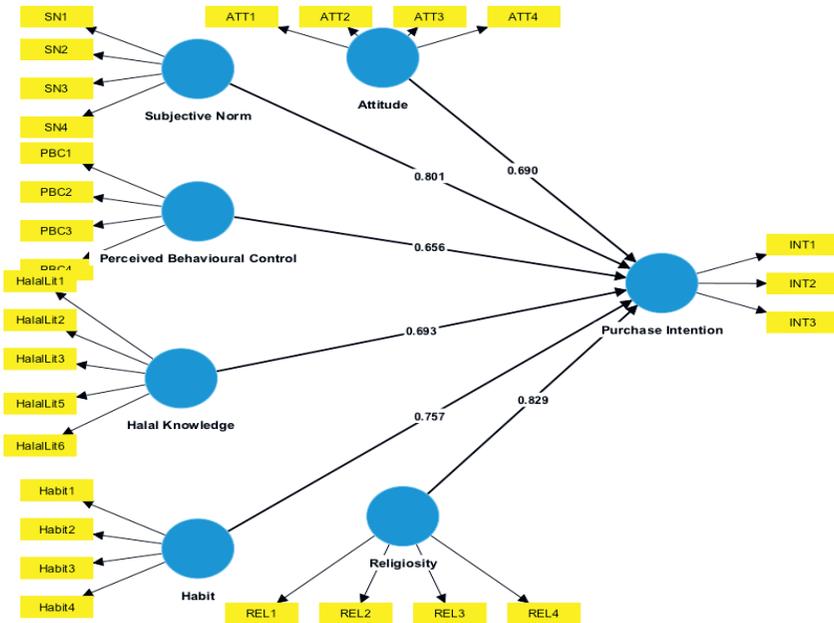


Table 5: Effect size

Construct	$f^2$	Effect
Attitude -> Purchase Intention	0.018	Medium
Subjective Norm -> Purchase Intention	0.069	Large
Perceived Behavioural Control -> Purchase Intention	0.003	Small
Halal Knowledge -> Purchase Intention	0.004	Small
Habit -> Purchase Intention	0.020	Small
Religiosity -> Purchase Intention	0.148	Small

The effect size of the predictor constructs may be determined by using Cohen’s f-squared or  $f^2$ . The effect size  $f^2$  defines how an independent latent variable shift is greatly affected by a change in  $R^2$  from the dependent latent variable, where it shows the power that contributed to an endogenous construct in explaining an exogenous construct (Ramayah et al., 2018). Generally, the  $f^2$  values of 0.35, 0.15, and 0.02 are respectively considered large, medium, and small in assessing the effect size (Cohen, 1988). Thus, Table 5 shows that all the constructs have a small effect size except for attitude (medium) and subjective norm (large).

## 5. Discussion

The current findings show that the factors that motivate Malaysian Muslim consumers to buy halal chocolate are influenced by their attitudes, subjective norms, and religiosity. Perceived behavioural control, halal knowledge, and habit, on the other hand, are not.

In this study, Malaysian Muslims place great importance on the opinions of others when buying halal chocolate. This study also shows that subjective norms are the most important factor in the intention to buy halal chocolate. In addition, Muslims in Malaysia, who predominantly have a collectivist culture, show great loyalty and cohesion towards their circles, which is important. This supports the study of Ali et al. (2020), Ali et al. (2018), and Fuadi et al. (2022), but contradicts the findings of Jang and Cho (2022), Kasri et al. (2023), Khan and Azam (2016), and Zayed et al. (2022), who found that subjective norms are not an important predictor of intention to purchase halal food.

Findings from this study also reveal that attitude significantly predicts Malaysian Muslims' purchase intentions for halal chocolate. Attitude is found to be the second most important determinant. This study confirms the findings of Ali et al. (2020), Fuadi et al. (2022), Nursalwani and Zulariff (2017), and Sari et al. (2022), all of which emphasised the importance of attitude in determining purchase intention. This study found that purchase intentions for halal chocolate are boosted by Malaysian Muslims' favourable evaluation of halal chocolate.

This study confirms that religiosity does indeed influence the intention to buy halal chocolate. The findings corroborate those of Alotaibi and Abbas (2022) and Suleman et al. (2021). Previous studies have confirmed the significance of people's religiosity, particularly that of Muslims. According to Nurhayati and Hendar (2020), religiosity is a powerful motivator for Muslims to always act in accordance with Islamic values and norms. As a result, religiosity determines individuals' ever-improving patterns of worship and religious practices. This divine expression manifests itself in the consumption of food, among other things, and influences the preference for halal food as a form of obedience.

With respect to perceived behavioural control, the result of this study shows a contrary result to previous research studies that confirm the significant relationship between perceived behavioural control and intention. This is contrary to the findings of Damit et al. (2019) and Suleman et al. (2021), who reported that Muslims are more willing to make significant efforts to obtain halal food. However, this

study confirms the findings of Aslan (2023), Bhutto et al. (2023), and Zayed et al. (2022), who found that perceived behavioural control does not influence intention to purchase halal food. This could mean that Muslims are unwilling to make a detour to find halal chocolate because halal chocolate is readily and widely available in this country.

Knowledge of halal is insignificant in predicting intention to purchase halal chocolate among Malaysian Muslims in this study, which supports the findings of Maichum et al. (2017), Pratiwi (2018), and Wibowo et al. (2020). However, this is contrary to Elias et al. (2016) and Khan et al. (2022), who found that knowledge of halal influences the intention to purchase halal food. This finding may suggest that halal knowledge may not directly influence an individual's intention to purchase halal but rather form a positive attitude towards the intention to purchase halal products (Rizkitysha & Hananto, 2022). Also, knowledge is already ingrained in every single Muslim in this country, and they are therefore confident in their knowledge of halal chocolate.

Habit is also not a predictor of intention to purchase halal chocolate among Muslim consumers in Malaysia. This study is in line with studies by Ali et al. (2017), Bonne et al. (2007), Fachrurrozie et al. (2023), and Vanany et al. (2020). Habit does not influence the intention to buy halal food among Muslims, and this may have been caused by consumer uncertainty about one of the items: "Eating halal chocolate is something that I do not have to think about doing it." When buying or consuming food, it is common for Muslim consumers to think carefully before purchasing halal food, for example, by reading labels or looking for halal indicators such as halal guarantee status, country of origin, and ingredients in the product (Ishak et al., 2016; Vanany et al., 2020).

## **6. Conclusion**

This study aims to investigate the factors that influence Malaysian Muslims' intention to purchase halal chocolate by expanding on the TPB-based model. Specifically, this study looks at the impact of attitude, subjective norms, perceived behavioural control, halal knowledge, habit, and religiosity on the intention to purchase halal chocolate. The findings indicate that the subjective norms, attitudes, and religiosity of the respondents have a positive influence on their intention to purchase halal chocolate. Although some studies suggest that perceived behavioural control, knowledge about halal chocolate, and habit may have an influence on purchase intention, this study found no significant effect in this regard.

In theory, the study's findings add to the growing literature on consumer behaviour, halal food, and TPB. In particular, this work contributes to a better understanding of the antecedents of halal chocolate purchase intention amongst Malaysian Muslim consumers. Furthermore, the extended TPB framework successfully predicts the intention to buy Halal chocolate, with attitude, subjective norms, perceived behavioural control, halal knowledge, habit, and religiosity explaining 75% of the variance.

This study helps to provide insights to marketers of halal chocolate in their effort to encourage the purchase of halal chocolate among Malaysian Muslims. As previously stated, findings reveal the importance of subjective norms in determining an individual's intention to purchase halal chocolate. Thus, the appearance of family and friends in advertisements promoting halal chocolate becomes crucial in encouraging intention to purchase the product. Other than that, as religiosity emerges as an important factor in determining the purchase intention of halal chocolate, halal chocolate producers should also emphasise the halal logo on the brand to increase purchase intention among religious Muslim consumers. The Malaysian Cocoa Board, in particular, can utilise this study's findings to understand Malaysian Muslim consumers' halal chocolate preferences, improve cocoa bean quality, and restore Malaysia's cocoa production glory as the world's top producer of cocoa.

However, it should be noted that this study investigated the role of personal factors such as attitude, subjective norms, perceived behavioural control, halal knowledge, habit, and religiosity in determining intention to purchase halal chocolate. Future research should examine external factors that include the role of the halal certification logo on purchase intention to strengthen the model. Additionally, while the current study only uses a survey questionnaire to collect data, a future study could use a mixed-methods approach that combines qualitative and quantitative methods to provide a more in-depth understanding of consumer purchasing of halal chocolate. Another limitation of the present study was that the data were collected from a single food sector, i.e., halal chocolate. Therefore, the results have limited generalisability and may not be transferable to other types of food and food industries such as kosher and organic food, halal clothing, and halal cosmetics.

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