

# Applying the Theory of the Planned Behavior on Halal Logistics Services Adoption among Food & Beverages Small and Medium Enterprises

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**Abstract** – The objective of the study is to determine the main behavior affecting the adoption of halal food logistics (HFL) services among the SMEs - food and beverages manufacturers in Malaysia. Presently, the demand for halal products by Muslim consumers has increased exponentially as well as the concerned on the transportation services status. Thus, the existing of the HFL is designed especially to meet the demand from halal manufacturers to maintain the integrity of their halal products along the supply chain. Unfortunately, the demand of these services among the SMEs are moderately small. Based on TPB model, the study utilize survey questionnaires to obtain data from 596 respondents from listed database. The useful questionnaires which are 128 responses were analyzed by SPSS and the Smart SEM-PLS. From the analysis, subjective norms were found to have a significant relationship with an intention to adopt the HFL services but variables of attitude and perceived behavior control are not significant. The results has provided an understandings on the behavioural among these SMEs to adopt HFL services in Malaysia. In this context, the HFL services can be a part of a business strategies in protecting the halal integrity either from perspective of manufacturers, logistics providers towards the consumers' needs. The implication, limitation and suggestion for the future study are also be discussed in the conclusion paragraph.

**Keywords:** adoption, F&B, halal, logistics, SMEs, TPB

## 1. Introduction

The expansion of halal product demand has actually gained attention from the industry due to a drastic increased from various layers of consumers either Muslim or non-Muslim globally. The expansion on the halal consumption mainly on halal food and beverages (F&B) is associated with quality, cleanliness and safety as underlines by the Shariah Law [1].

Halal is defined as permissible and cited from holy Quran and the Sunnah and becomes most important dietary obligation for Muslims. As according to [2], the important principles to halal is the permissibility of things in making a lawful and to prohibit is the right of Allah alone. Presently, the unified of halal standard is not only limited in ingredients or F&B but also includes all activities along the supply chain [3]. Therefore if understanding of the halal concept is directly digested, it will support the industry, especially the F&B sector, to grasp a huge opportunity and benefit from the rise of the market demand for the halal products [4].

As mentioned by [5], the global halal food market has a massive potential for growth and is projected to rise from about 1.25 trillion U.S dollars in 2016 to approximately 2.57 trillion dollars in 2014. And also some of biggest development opportunities for the global halal market include the branding of halal food as healthy and producing organic halal food. Interestingly, halal is not limited for F&B products only, but it extends to pharmaceuticals, cosmetics, healthcare products and services such as logistics, banking and tourism [6]. Specifically, products with halal status must be kept from all things that may affect the product starting from the original sources such as farms until they are served to consumers. During this process, all parties in the supply chains must act proactively to verify all its activities to be careful about being exposed to whatever potential cross-contamination with non-halal items [7].

In a particular for halal industry security, JAKIM Malaysia has issued certified halal certificate and logo legally. While the Department of Standards Malaysia (MS) has issued the halal guidelines specifically for the production of F&B products namely MS1500: 2009 and logistics activities namely MS2400: 2010 (Table 1).

**Table 1.** Description of MS

Malaysian Standards	Details – Halal Standards
MS 1900:2005	<ul style="list-style-type: none"> <li>Quality Management System-Islamic Perspectives</li> </ul>
MS 2200-1:2008,	<ul style="list-style-type: none"> <li>Islamic Consumer Goods-Part1: Cosmetics and Personal Care-General Guidelines.</li> </ul>
MS 1500:2004	<ul style="list-style-type: none"> <li>Halal Food-Production, Preparation, Handling and Storage-General Guidelines.</li> </ul>
MS1500:2009	<ul style="list-style-type: none"> <li>Is a comprehensive halal food standard covering the sources of halal F&amp;B; the slaughtering; product processing, handling and distribution; product storage, display and serving; hygiene, sanitation and food safety; and the packaging and labelling.</li> </ul>
MS2400:2010	<ul style="list-style-type: none"> <li>MS 2400-1:2010 (P) Halalan-Toyyiban Assurance Pipeline – Part 1: Management System Requirements for Transportation of Goods and/or Cargo Chain Services</li> <li>MS 2400-2:2010 (P) Halalan-Toyyiban Assurance Pipeline – Part 2: Management System Requirements for Warehousing and Related Activities</li> <li>MS 2400-3:2010(P) Halalan-Toyyiban Assurance Pipeline – Part 3: Management System Requirements for Retailing</li> </ul>

According to Halal Development Corporation (HDC), the halal F&B industry is so important and becomes one of key components in giving contribution of 8.7% to Malaysia’s GDP in year 2020 [8]. On the other hand, halal industry in Malaysia provides a great opportunity for F&B manufacturers to expand their businesses, globally. The halal export products from both major players; large companies and the Small-Medium Enterprises (SMEs) has increased from RM39.4 billion in 2015 to RM43.4 billion in 2017. Hence, contributions made by the these halal F&B industry to Malaysia are indispensable for economic development while at the same time providing the legal status to halal products in terms of Shariah law to its Muslim population which is approximately 65% out of 32 million population. On the other hand, the halal logistics industry has been affected by the development of the halal F&B products industry. The strong demand from Muslim users has given pressure to entrepreneurs from the halal supply chain including the F&B sector to make use of the halal transportation [4].

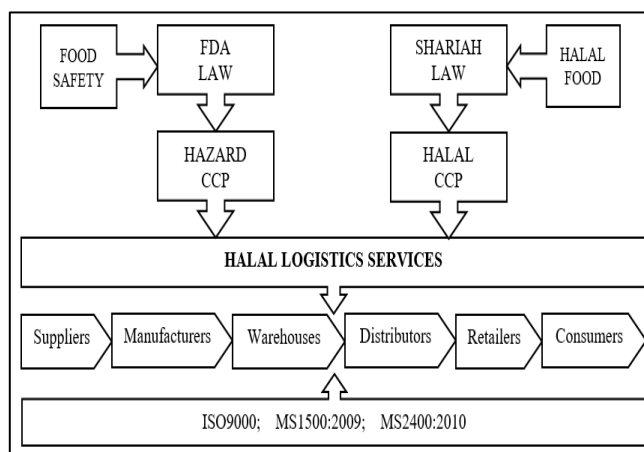
**2. Literature Review**

Halal F&B products are not only used by Muslim consumers but also non-Muslim around the world also enjoy it because these products are assured of their status as clean, safe and of quality. This is a

concept presented by Islam, "Islam is a Way of Life" - dietary, lifestyle, and consumption requirements [1]. Unfortunately, products with a halal logo do not necessarily mean it is halal certified until the processes end. This is due to the possibility of contamination during distribution, warehousing, and storage, or at the point of sale [9].

Hence, to accommodate the needs of the industry, the halal food logistics (HFL) has introduced, a new concept that has been given to halal products not only in Malaysia but in many regions around the world. Therefore, both the industry players as well as the Malaysian consumers need to be exposed to the awareness of HFL [10]. Moreover, this will become a driving agent for F&B manufacturers in Malaysia to produce more halal products for international markets and deliver their merchandise to customers through HFL services. Conventional logistics is one of the main components in the supply chain activities starting from the suppliers, manufacturers, warehouses, distributors, retailers and consumers (SMWDR). Customarily, both halal and non-halal products are deposited together in the same containers and this might contribute to cross-contamination. On the other hand, halal logistics is an approach to avoid any halal products to be mixed with haram products [11] during transportation of the products along the supply chain activities to end consumers. Thus, other than SMWDR, the HLS is also involved processing, handling, distribution, transportation, storage, display, serving, packaging, labelling and product returns. Foremost, all processes are conducted under the influence of HACCP and Halal ACCP which is aligned with the Shariah Laws and other regulations; ISO and Malaysian Standards (Figure 1).

**Figure 1.** Halal Logistics Services



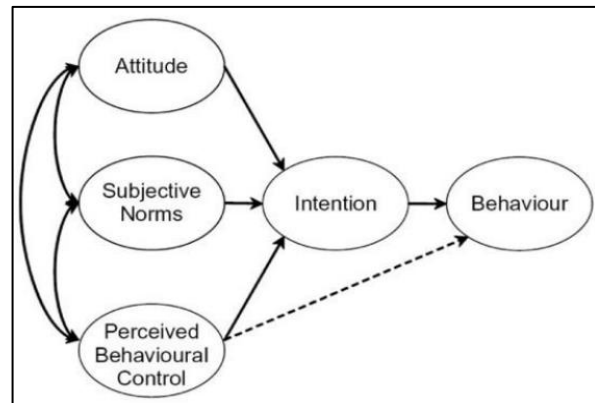
## 2.1 The Problem

In Malaysia's context as according to [12] [13], most parts of the F&B supply chain, including agri-business, F&B manufacturers, food logistics and retail-food chains as well as the logistics service providers are dominated by non-Muslim enterprises. Even as claimed by [14], more than 80% of the F&B products in the Malaysian markets are produced non-Muslim industrialised background. Therefore, this situation has created a barrier to the adoption of the HLS among the halal F&B manufacturers [10] especially from the Muslim owned enterprises. A part of that, [15], also mentioned in their study that many of F&B manufacturers are disorganised to interpret the concept of HLS (based on Shariah Laws), even so, merely a small number of them had decided to adopt the HFL services.

According to [16], the market value of halal products keeps on growing not only among the Muslim but also from non-Muslim consumers. However, the main issue related to the halal logistics today is when the F&B manufacturers have not clearly understand the concept of halal logistics and the process of the adoption as mentioned by [17]. Therefore, the rate of HFL adoption was not growing as fast as expected by many parties in the halal industry players. It is supposed to be a new tool in a business strategies or a business opportunity, moreover as a source of competitive advantages [18]. However, most of them (SMEs F&B halal manufacturers) are still reluctant to adopt the HFL services as a part of their business operations. Thus, to compete and increase the productivity in the domestic and global halal market, SMEs top level management will have to undergo radical changes [19] such as becoming the entrepreneur that has behavior which able to adopt new technology and innovation to their own advantage. In addition, the elements that manufacture need to consider is to adjust their organizational members' beliefs, attitudes and intention to change. According to [20], manufacturers for example can accept the new technology and innovations based on factors such as availability of technology, convenience, consumers' need, security and others.

The study is guided by a Theory of Planned Behaviour (TPB) which developed by [21] which focused on the behavioural intention of the person's attitudes toward that behaviour (Figure 2). The first two factors are the same as Theory of Reasonable Action [22]. The third factor that is known as the perceived control behaviour is the control which users perceive that may limit their behaviour (*e.g.*, Can I adopts the HLS and what are the requirements?). The present study examined the probability of using the primary components of the TPB (i.e. attitudes, social norms and PBC) to predict

intention of SMEs halal manufacturers (*e.g.*, owner, managers) to engage in adopting the HLS.



**Figure 2.** Theory of Planned Behaviour

## 3. Theory Planned Behavior

The Theory of Planned Behaviour (TPB) is a model that has been used to predict and explain a wide range of human behaviour. It's seeks to address individual motivational factors (in this study the individual will the owner/manager) within unique backgrounds to enlighten the overall execution of a specific behavior [21]. He also assumed that intentions will capture motivational factors that influence behavior, following that an intention is an indication both of how hard the individual is willing to work, and how much determination that individual will perform, in order to accomplish the behavior. The model is composed of three primary components, include the individual's; (a) attitude towards the behaviour, (b) his/her perception of social norms associated with the behaviour, and (c) his/her perceived behavioural control (PBC) to engage in the behaviour. The attitude is relate to whether the individual has a positive or negative view towards the behaviour (*e.g.*, like/dislike, good/bad), social norms are the individual beliefs that other people think that they should engage in the behaviour and, PBC is the extent to which the individual believes they have the ability or resources to be able to engage in the behaviour. These three components are used to predict the individual's intention to engage in the behaviour. Intention has consistently been demonstrated to be a reliable predictor of actual behaviour [22].

In many studies, the TPB model has well been accepted as a model with a strong predictive utility and a well-established model for prediction of intention and adoption behavior. Despite its valid prediction, some researchers still have suggested relevant external factors beyond the three component model to support in enhancing the predictive ability on the intention and adoption [23]

[24]. Therefore, [21] suggested the effectiveness of attitude, subjective norms and perceived behavioral control in the expectation of the intention may be affected by the behaviors and situations. He suggests as a general rule, the stronger a person's intention to engage in a behavior, the more likely the behavior will be performed. This refers to the consideration of the outcomes of performing the behavior.

### 3.1 Attitude

Attitude is the results of some beliefs. It is constantly applied as a single concept and interchangeably [22]. This refers to the degree to which a person has a favorable or unfavorable valuation of the behavior of interest. It involves a consideration of the outcomes of performing the behavior. Indeed, [24] mentioned that an individual has more possibility to implement a particular behavior when they have a positive attitude. This research also supported by [25] which mentioned that if the individual has a favourable attitude, the outcome can be considered positive or that individual's that have a positive attitude the result of an intention to perform the behavior is also strong [24].

Regarding such definitions, for this study the SMEs F&B manufacturers (e.g., owners/managers) attitudes towards an intention to adopt the HLS is an ideal movement. Among the drivers that influence the attitudes are the pressure from the environment factors such as encouragement from government agencies, modern infrastructures and capital loans. In addition, the high demand from domestic and international consumers are also the factors that influenced the attitude of these SMEs (owners/managers) to adopt HLS. They are also influenced by the growing application of F&B technology as well as online marketing. As such, the following hypothesis is developed:

*H1:* Attitude of SMEs top level management has a significant relationship with an intention to adopt the HLS.

### 3.2 Subjective Norm

In TPB model, subjective norms refers to the belief about whether most people approve or disapprove the way of the behavior took place. It relates to an individual's own perception of a particular behavior and the strength of motivation to comply with relevant others' beliefs. Subjective norms or social influences can be explained by assessing the social pressure on individuals to perform or not to perform a certain behaviours and also as consumers' perception towards social normative push [24]. In addition, [24] also stated that the subjective norms are an opinion from the family members or surrounding friends that could also impacted the

individual's attitude and intention. In addition, subjective norms can also be described as the individual believer to accept or refuse the behavior and important people to support them engaging in the behavior. The HLS is a situation where the F&B manufacturers make use it for maintaining the halal integrity of their products that cross along the supply chain and also to avoid any cross contamination incidents [16]. On the other hand, based on [26], the subjective norms was a significant factor in predicting halal consumption by the consumers. Therefore, the manufacturers have seen this phenomenon as one of the most important factors from consumers who wanted the halal products to be maintained with a method that they are believed to be halal (halal integrity). In addition, it was an internal sense of responsibility from the Muslim and non-Muslim F&B manufacturers towards the society regarding of food that complies with halal requirements [11]. Therefore, this study aims to determine the relationship between the subjective norms and intention to adopt HLS among the SMEs in producing halal F&B products. Accordingly, this study hypothesizes the following:

*H2:* Subjective norms of SMEs top level management has a significant relationship with an intention to adopt of HLS.

### 3.3 Perceived Behavioural Control

Perceived behavioral control (PBC) refers to a person's perception of the ease or difficulty of performing the behavior of interest [21]. Perceived behavioral control varies across situations and actions, which results in a person having varying perceptions of behavioral control depending on the situation which leads to different actions.

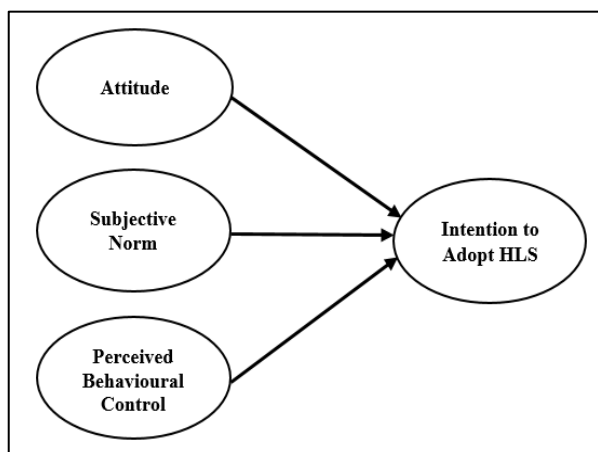
For example, the halal market growth rate in Malaysia is actually due to several factors which are caused by the development of knowledge and the dissemination of information relating to Shariah Laws especially in the halal and illegal chapter on nutrition and application. According to [27] the increasing demand for halal products is also driven by continued demand and strong pressure by consumers and the general public to compulsory requirements to producers. Additionally, the F&B sector is supported and supported by various parties such as government agencies (e.g., HDC, JAKIM, SMIDEC, etc.) and private sector such as providing modern infrastructure, finance loans, tax exemptions and halal industrial parks [28].

At the same time, the implementation of good regulatory and standard systems by government agencies, especially JAKIM, KKM and Malaysia Standards which issued halal and quality related certificates such as MeSTI (Food Safety Industry

Responsibility) Good Manufacturing Practice (GMP), Good Hygiene Practice (GHP), HACCP, MS1500: 2009, MS2400: 2010 and others have made a significant impact. For example, increase in the ownership of halal certificates, quality-related certificates, and increased demand for halal and continuous products, improved packaging and diversification of high-quality products via new product development, innovation and commercialization processes [29]. Therefore, for the third hypothesis, this study intends to examine the respective personnel's relationship between PBC and its effect on the intention to adopt the HFL services. Hence, for the third hypothesis, this study intends to examine the respective personnel's relationship between PBC and its effect on the intention to adopt the HFL services.

*H3:* Perceived behavioural control of SMEs top level management has a significant relationship with an intention to adopt of HLS.

The effects of these variables via the TPB model towards the intention to adopt the HLS were examined in the present study (Figure 3).



**Figure 3.** TPB towards adoption of HLS

#### 4. Research Methodology

The study employed a quantitative survey with a standard questionnaire. There are three sections namely; respondent's personal and enterprises' background, TPB's variables and the HLS adoption. All items in the survey questionnaires were measured by using a five-point Likert scale except for the respondent and enterprise information. All items were adopted from previous studies with Cronbach alpha of above 0.75. Thus the validity of the question used are within the acceptable range. The items for TPB variables were adapted from [29] [30] [11] [24], and items for HLS adoption were adapted from [31] [12] [32] [33] and which were

developed based on MS1500:2009 and MS2400:2010.

#### 4.1 Data collection, sample and analysis

The sampling frame consisted of all halal F&B manufacturers in Malaysia. The sampling list was gathered from the JAKIM's online database 2018. The total number of manufacturers on the database was 596. Based on previous studies related to the halal industry in Malaysia, the response rate is usually low, and therefore as according to [34], the survey questionnaire was sent to all manufacturers. The targeted respondents must hold the managerial position in the top level management; owners and managers. The survey was conducted by using a structured online questionnaire via email. Out of the 596 distributed questionnaires, 128 usable responses were received, and this resulting in an effective response rate of 21.5%.

All relationships between constructs were analysed through structural equation modelling (SEM). This can be done via SEM because it allowed all path to be analysed in a single analysis [35]. In addition, the partial least squares (PLS) approach was chosen because the study's has a small sampling size and the sample size of 128 has exceeded the minimum sample requirement as recommended by [35].

#### 5. Findings

The current studies has obtained the following response rate from three category of SMEs; 20.5% from micro level, 46.7% from small level and 32.8% from the medium level. Out of the total responding F&B manufacturers, Muslims owned 38.9%, while non-Muslims owned 61.1%. On the other hand, 69.2% of them have been established more than 10 years, followed by 30.8% that less than five years. In term of production category, 49.7% of manufacturers belonged to food processed, ready-to-eat food (28.5%), frozen food (15.2%), and beverage (6.6%).

The results from the analysis were presented in the table 2. From overall hypothesis, only subjective norms (H2) has a significant impact to the intention in adopting the HLS among the manufacturers ( $p$ -value 0.03;  $t$ -statistics 1.82) while the other two hypothesis were not supported; (H1 and H3).

**Table 2.** Hypothesis, *t*-Statistics, and *p*-value

Hypothesis	Relations	<i>t</i> -Stat	<i>p</i> -value	Decision
H1	*ATT → INT	0.89	0.19	Not Supported
H2	*SN → INT	1.82	0.03	Supported
H3	*PBC → INT	0.58	0.28	Not Supported

\*ATT (Attitude) SN (Subjective norms)  
PBC (Perceived Behaviour Control)

## 6. Discussions and Implications

The objective of the study was to determine the main behavior that have affected the adoption of HLS among the SMEs – F&B manufacturers in Malaysia. All the manufacturers in this study have shown a high determination in complying with halal practices by obtaining the halal certification from JAKIM and other certificates of quality. On the other hand, the results of the study shown that the SMEs in halal F&B industry in Malaysia have a significant impact relationship between subjective norms towards the intention to adopt the HLS. This has proven that they have a high level of belief, awareness as well as trust shared among the managers in the enterprises and also from their respective Muslim consumers. The findings of this study is in line with [30], which indicated that subjective norms was a significant factor in determining the intention of adopting halal requirements. This is also similar with the study conducted by [31] who also confirmed that the subjective norms has significant and positive impact in applying halal requirements among the food truck traders. Their research has also verified that the application of halal logistics is one of a business strategies that capable to attract more consumers and at the same time fulfil the requirement of Shariah Law.

Meanwhile, findings from the study show that perceived behavioural control is not significant in determining the HLS adoption among the SMEs F&B manufacturers. This shows that the intention to adopt the HLS by them are not determined by items outside of their control, such as government agencies and private sector assistance including the regulatory and quality standards. Moreover, the attitude also be found not a significant factor for those SMEs to adopt the HLS. Based on previous studies, the halal F&B industry has some challenges in terms of adopting the halal requirements (halal logistics) such as high costs [9] and lack of government supports [16]. Even some of them really need the motivation [36] to successfully implement HLS in their companies. Perhaps by that, it will lead to gain some of competitive advantages in domestics' halal markets.

## 7. Limitation and future studies

The present study only explored the intention towards adopting HLS among the SMEs manufacturers in halal F&B industry. It is possible to get some understanding from the point of view of large companies in the same industry. In addition, this study only applies survey questionnaire via the emails with cross-sectional in nature. Therefore, the method is limited the ability to imply causality in the relationships among the variables. On the other hand, this study has outlined some evidences in supporting and enriching more research in the scope of HLS adoption in Malaysia. Future studies may be applied to this platform to explore other types of halal industry such as pharmaceutical, ingredient, cosmetics, and personal care products. Perhaps by doing that, the variety of sampling frame will improve the conceptualisation, measurement scale, and general accessibility of the discovery. Despite this, replication of this study will further enhance the knowledge of this subject, as the study model is still considered to be renewed in the context of HLS research.

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