

Influencing Factor of Malaysian Consumer Attitude toward Halal Online Food Delivery and Their Intention to Use

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How to cite this article: Chai Yee Ting, Shaizatulaqma Kamalul Ariffin, Fifiana (2024). Influencing Factor of Malaysian Consumer Attitude Toward Halal Online Food Delivery and Their Intention to Use. *Library Progress International*, 44(3), 6116-6131.

ABSTRACT

Halal online food delivery service (HOFD) is an emerging new wave in the food and beverage industry. This market is continuing to rise and soar after the Covid-19 pandemic. HOFD is essential to Muslims to ensure the Halal integrity of Halal Food. It is important to make sure that the food delivery to consumers is clean, safe, Halal. The purpose of this paper is to examine the key factors that explain intention to use HOFD (perceived ease of use, perceived usefulness, Halal knowledge, Halal awareness, attitude, subjective norms, and perceived behavioural control). The moderating role of Halal certification in the relationship between consumer attitude toward HOFD and intention to use HOFD is also examined. A total of 195 Malaysian Online food delivery users participated in an online survey and hypotheses were tested with SPSS/PLS-SEM. The constructs Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB), and Halal Awareness affect intention to use. However, Halal knowledge is found to be insignificant toward attitude. In addition, Halal certificates do not strengthen the relationship between consumer attitudes and intention to use HOFD. The TAM, TPB, Halal knowledge and Halal awareness constructs help explain the use of HOFD services. These results will help the providers of these services to understand Muslim consumer behaviour and to design their marketing strategies more appropriately to ensure consumer favourable attitudes and their intention to use HOFD services.

Keywords: Perceived Usefulness, Perceived Ease-of-use, Halal Knowledge, Halal Awareness, Attitude, Subjective Norms, Perceived Behavioural Control, Halal Certification, Intention to Use

I. INTRODUCTION

Malaysia is a multicultural country in which Islam is the official religion. There are 69.9 percent of Bumiputera, 22.8 percent of Chinese, and 6.6 percent of Indians, and others as of July 2022 [1]. There are approximately 20.6 million Muslim adherents in Malaysia which is 63.5% of Malaysia's population. Halal food delivery service is essential to ensure halal integrity for halal food. It is important to make sure the food delivery to consumers is clean, safe and halal. In Malaysia, online food delivery (OFD) service is an emerging new wave in the food and beverage industry [2]. This market is still continuing to rise and soar after the pandemic. There are signs indicating that the online food delivery market is becoming an entrenched part of Malaysia's daily life. In 2017, Malaysia's online food delivery market was estimated at USD 66.3 million [3]

Halal means lawful or permitted in Arabic. As the Quran stated, "eat what is lawful and wholesome on the earth." Halal can apply to food and life choice, but it is widely associated with drink and food. Halal food is any food which is not forbidden by the Quran. Halal food is any food which is hygienic and free of harmful ingredients, alcohol, intoxicants and swine products. For any meat to be considered halal, the meat must go through halal slaughter and preparation which is known as dhabihah(zabiha). For meat accepted by halal regulations, for example poultry, sheep or cow, it is not considered as halal food if bought from non-halal slaughterhouses. For meat killed by hunter gunshot or arrow or natural causes is not considered halal food. Exotic meat like rattlesnake and alligator are not halal food [4].

In Malaysia, the Department of Islamic Development Malaysia (JAKIM) is responsible for implementing, monitoring, and enforcing halal certification system and halal compliance within Malaysia. In 1974, national halal certification was introduced by Malaysia. The Research Centre for the Islamic Affairs Division implemented the certification under the auspices of the Prime Minister’s office. As a member of Organisation of Islamic Conference (OIC), Malaysia halal certification system and internationally standardised logo agreed for use by all Muslim nations. To improve halal commercial and industry development and branding, Halal Industry Development Corporation (HDC) was established in 2006 [5]. This helps strengthen Malaysia as a leading global halal hub and improve Malaysia halal standards. A blueprint named Halal Industry Master Plan for 2008-2020 is introduced and implemented by the Malaysia government. Several halal related sectors included in this master plan include processed foods, pharmaceutical ingredients, clothes, cosmetic and personal care, livestock, healthcare, logistics, tourism and others service sector [6].

Halal supply chain management (HSCM) is a supply chain that needs special endorsement and attention to ensure halal integrity throughout the network. HSCM is a supply chain management adherent to elements of Shariah law and proper halal process. Conventional supply chain is a series of interconnected processes from raw material to final products and sent to end consumers. Halal and conventional supply chains operate in similar ways, process and serve the same function. But halal logistics requires halal dedicated equipment and facilities while conventional logistics can have mixed delivery. Halal consumer spending amount is projected to exceed three trillion U.S.dollars by 2023. In 2017, it accounted for 4.5 percent of the global total consumer spending for halal related services and products [7]. Halal supply chain management is important in ensuring the sustainability of halal products.

Nowaday, there are many different online food delivery platforms in Malaysia. FoodPanda and GrabFood are two mains dominant OFD service providers in Malaysia. Others included Airasia Food, Lalamove, Smartbite, DeliveryEat, Beep. Foodpanda is the first OFD service provider in Malaysia which entered the Malaysia market in 2012. GrabFood launched their OFD service in Malaysia in May 2018. Airasia Food launched in May 2020 in the middle of Covid-19 pandemic to support the small and middle F&B industry in Malaysia. According to [8], OFD market revenue is projected to reach USD 2.3bn in 2023. Compound annual growth rate (CAGR) 2023-2027 is 14.24% which projected market volume of USD 3.94bn in 2027. For the grocery delivery segment, there is a projected market volume of USD 1.79bn in 2023 and expected revenue growth of 19.9% in 2024. USD 263.00 is projected as an average revenue per user (ARPU) in 2023. For the meal delivery segment, 13.04m users is expected to be reached in 2027. 30.5% user penetration rate in 2023 [8].

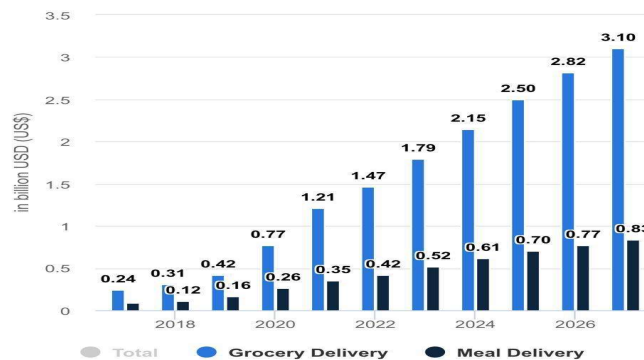


Figure 1 Online Food Delivery Revenue in Malaysia

Source: Statista market Insight

Foodpanda is the first online food and grocery delivery platform in Malaysia has launched a newly delivered fleet ‘bekal by foodpanda’ in April 2023. The is the first and only global brand certified halal by the Department of Islamic Development (Jakim). Delivery Hero Group’s delivery fleet ‘bekal by foodpanda’ mission is to safeguard every single step within the delivery process to ensure the product purity and halal integrity. The moment a consumer order is placed with halal certified restaurant on foodpanda to the moment the product is delivered to the consumer doorstep by halal certified delivery services, the product is halal compliant. The delivery riders are equipped with the halal-compliant delivery bag to separate the halal and haram food. Special training is provided to ensure delivery partners have halal awareness and sertu(ritual cleansing). With the introduction of bekal by foodpanda, the delivery stage in OFD service is guaranteed. Consumers can have peace of mind and trust the food they ordered is halal-complianced and strict to high standards of food safety and hygiene.

Most of the previous research examines the consumer intention toward online food delivery services [9], key success factors of online food ordering service [10], halal food purchase intention [11], determinants of halal purchase intention [12], halal food supply chain integrity enhancement [13]. There is limited research study regarding halal online food delivery service. Hence, this research will fill the gap to examine factors influencing consumer attitude toward halal online food delivery in Malaysia since many consumers voice out their concern about halal integrity issues during food delivery to their doorstep. Knowledge of halal and halal awareness are two independent variables added into the proposed framework.

II. LITERATURE REVIEW

(a) Technology Acceptance Model (TAM)

Technology acceptance model is revised from the Theory of Reasoned Action (TRA) which is used in the Information System (IS) area. TAM and TRA assumed that when a person has an intention to perform, they will be free to perform without restraint [14]. There are two primary factors influencing a person's intention to use a new technology in Technology Acceptance Model (TAM) which are perceived usefulness and perceived ease of use [15]. TAM is most tested and influential [15]. This theory implies when a new information system is given to the users, perceived usefulness and perceived ease of use will have an impact on their determination about when and how they will use the new information system [14]. TAM theory is still widely recognized and used by most researchers [16]. The goal of TAM is to provide interpretation of the factor of computer acceptance. A person is more likely to use the technology if the person's intention to use the technology increases. There is not always the same percentage contribution from perceived usefulness and perceived ease of use. In TAM, a person's intention is predicted to lead to a person's behaviour. Besides that, the stability of a person's intention influences the relationship between a person's intention and their behaviour. If a person's intention is not stable all the time, the intention may not predict the actual behaviour of the person. As the stability of a person's intention increases, the actual behaviour can be well predicted.

(b) Theory of Planned Behavior (TPB)

TPB is a theory used to predict a person's intention to perform certain behaviour at a specific place and time. Behavioural intentions are influenced by attitude, subjective norms, perceived behavioural control of the person [17]. TPB believes people's behavioural intention is influenced by their attitude about the behaviour they performed will bring the expected outcome and evaluation of the benefit and risk of the outcome. This theory has been used to explain a wide range of behavioural intentions and health related behaviour. Examples are health services utilisation, drinking, smoking, breastfeeding and others. Attitude is the degree of a person's positive or negative evaluation of certain behaviour and the outcomes of performing that behaviour. Subjective norm is a belief about whether most people agree or disagree with the behaviour. It is a belief regarding people of importance to that person or their peers who think they should engage or not with the behaviour. Perceived behaviour control is a person feeling of the ease or difficulty to carry out the behaviour of interest. Actions are controlled by a person's behavioural intention. Some behavioural intentions are totally abandoned or changed due to the changing environment. Behavioural intention is a person's commitment to act which is the outcome of a combination of several constructs [18]. The stronger the person to perform the behaviour if they have greater favour toward the behaviour, subjective norm and perceived control [19].

(C) Variables of Study and Hypotheses Development

Perceived Usefulness (PU)

Perceived usefulness is the extent to which a person thinks that his or her job performance will be enhanced by using a particular system [15]. According to [20], perceived usefulness is a person's feeling that a certain technology or technology system can help them enhance their roles or tasks in terms of effectiveness and efficiency. Each person is not the same and has a different reaction toward the change. Perceived usefulness arises when consumers think that the new technology will improve their job. In a previous study, perceived usefulness has been proved positively influenced the adoption of technology in different fields. For example, healthcare wearable technology, mobile phone adoption for shopping, hotel self-service kiosk and online food delivery service [21]. To apply perceived usefulness in online food delivery service, perceived usefulness is defined as the extent a person feels that using online food delivery service will be the useful way for them [21]. The perception of usefulness directly affects their intention to use the system. Otherwise, they will not use the system if they cannot feel the benefit of the system [22]. Perceived usefulness influences an individual's attitudes toward banking technology [23]. The perceived usefulness of mobile food apps influence consumer attitude toward online shopping [24]. Consumers have a positive attitude to perform banking transactions because of the perceived usefulness of self-service technology (Jahangir & Begum, 2008). Thus, this paper posits that:

H1: There is a positive and significant relationship between perceived usefulness and attitude toward halal online food delivery service.

Perceived Ease of Use (PEOU)

Perceived ease of use is the extent to which a person thinks that he or she is free of effort by using a certain technology system [15]. Perceived ease of use and perceived usefulness is not parallel, both are causal antecedent with each and others in the determination of the system use [15]. Perceived usefulness is a situation or level when a person feels that using a particular technology system does not require any effort. The indication of perceived ease of use can be examined by easy to learn, easy to operate and easy for users. A person will be more likely to adopt the technology system if they think the adoption is easy for them. It is not about ease of use or learning the system but also ease of doing a job or their task as compared to doing it manually [22]. Perceived ease of use is one of the important influence factors in new technology acceptance. Due to mixed findings of earlier research, it is needed for this research to study perceived ease of use on attitude toward halal online food delivery service. Perceived ease of use in making payment and product information finding make consumers have a preference attitude toward the use of mobile apps and online shopping [24]. Perceived ease of use has a significant effect on individual attitudes to use banking technology [23]. Thus, this paper posits that:

H2: There is a positive and significant relationship between perceived ease of use and attitude toward halal online food delivery service.

Halal Knowledge

Halal knowledge refers to the way Muslim individuals practise and digest the Islamic teaching in halal and haram aspect. The Halalan toyyiban concept should be devoured by every Muslim entrepreneur. This concept can be applied into procurement, production, packaging, storage and logistics. In Malaysia, muslim consumers have become more concerned and knowledgeable about halalness and cleanliness of food intake. Interactive platforms such as radio, news, social media and others play an important role in conveying halal-related information to consumers. With more knowledge and information about halal and hygiene food, consumers are more aware of the food ingredient intake. This increases consumer awareness toward halal products and services in the market. Integrity, hygiene and cleanliness are the top priorities for muslim consumers to choose food intake. They are careful to ensure the food they buy is halal. Quality and safety of the food delivered to them is also their main concern. Consumers will refer to restaurant description, previous consumer review and restaurant rating before they choose the product [25]. Halal knowledge increases halal awareness and their attitude toward halal products. Consumers are interested in investigating the halal status of their food and beverage as the knowledge of halal is the first stage for persuasion. Halal knowledge is a predictor of consumer attitude and purchase intention toward halal products [26].

Having Halal knowledge increases Muslim consumers' sensitivity and awareness in choosing their food and beverage. Muslim consumers have a positive attitude toward halal products by having halal knowledge [27]. Thus, this paper posits that:

H3: There is a positive and significant relationship between halal knowledge and attitude toward halal online food delivery service.

Halal Awareness

Halal awareness toward halal principles and halal food products has found a significant effect in a person's attitude. Halal awareness is defined as the ability to feel, to perceive and conscious toward a halal food, objects and events. Halal awareness plays an important role in a person's intention to choose. Halal awareness is important in production of halal products or services which must follow Sharia Law. Every Entrepreneur and consumer have a different degree of halal awareness because they have different religion, education, culture, background and social interaction. Halal awareness is defined as the degree of realisation or attentiveness for an entrepreneur to produce product and service which can be consumed by Muslim society. Halal awareness is defined as the ability of a person to perceive and understand an object and event that Muslim be aware of under the clause of islamic law which is allowed to eat, drink and consume [28]. A person has a positive attitude to consumer halal products when they are aware that consuming halal products is important for them [29]. Halal awareness guides muslims consumers during their decision-making process. Muslim consumers have a proper mindset and attitude toward halal product purchasing when they have halal awareness. Awareness of halal food influences the attitude halal foods even to non-muslim [27]. Thus, this paper posits that:

H4: There is a positive and significant relationship between halal awareness and attitude toward halal online food delivery service.

Attitude

Attitude is a positive and negative perception toward behaviour. A person's attitude is the sum of all their attitudes, prejudices and knowledge. For example, a person's attitude toward smoking behaviour might be that tobacco is relaxing and feels good but smoking causes coughing in the morning, smells bad and costs a lot of money to buy cigarettes [30]. Attitude is a person continuously and comprehensively making judgement toward a person, object or action. Attitude has a direct effect when a person makes a purchase intention. Attitude is

resulting from knowing and learning about a phenomenon, object and person. [27]. A person's attitude toward certain behaviour is formed from a set of a person's behavioural beliefs linked to the outcome of the performed behaviour. Attitude plays an important role in predicting a person's intention and behaviour [31]. A person is more likely to perform the behaviour if they have strong belief toward the result of their behaviour. There is a significant positive effect of consumer attitude toward online food delivery service. Attitude toward online purchase has an effect on the intention of a person to perform online purchase [32]. Attitude toward halal food is an evaluation of a person's favour or unfavourable toward halal food consumption [33]. Attitude was a variable to predict muslim consumers' intention to purchase halal food [26]. Attitude toward halal food is linked to intention of halal food consumption [27]. Thus, this paper posits that:

H5: There is a positive and significant relationship between attitude and intention to use toward halal online food delivery service.

Subjective Norm

Subjective norms refer to the perceived social pressure to perform or not to perform a certain behaviour. This could be the attitude of family, friends and colleagues [30]. Subjective norms influence a person's intention to engage or not to engage the behaviour. The person is more likely to implement the behaviour if social expectations think that the person should perform the behaviour. Halal food purchase is a socially desirable behaviour, a person is more likely to make a halal food purchase based on people important to the person who thinks he/she should perform the behaviour [31]. Subjective norms have a significant effect on a person's online purchase intention [32]. Subjective norm is a social pressure for a person to implement or not implement a particular behaviour. Subjective norm which is also defined as social norm is highly related to a person's culture. It is an important predictor of food consumption in food literature. There is a significant relationship between subjective norms and halal food purchase intention. A person's culture is shaped by a person's geography, race and religion. There is high intention to purchase halal food among Muslim living in Islamic countries [33]. Subjective norms have an effect on intention to buy halal food [29]. People will be more likely to have intention to buy halal products if halal food purchase is a socially desirable behaviour [28]. Thus, this paper posits that:

H6: There is a positive and significant relationship between subjective norms and intention to use toward halal online food delivery service.

Perceived Behavioural Control

Perceived behavioural control is the extent that a person thinks he/she can control their own behaviour. It depends on a person's perception of their internal factors such as a person's determination and ability and external factors such as support and resources. The stronger a person's intention to perform a behaviour if they think they have greater control over their behaviour [30]. Perceived behavioural control is the degree a person thinks that they are capable of engaging in the behaviour. Perceived behavioural control is about how much a person thinks they have control over the behaviour and how confident a person thinks they are able to perform or not perform the behaviour. A person's belief regarding the power of external and internal factors is important in determining whether a person performs relevant behaviour. A person will purchase halal food if the person thinks they have control over the halal food purchase [31]. Consumer perceived behavioural control will affect their intention toward halal online food delivery service [32]. Consumers will not perform the behaviour if they feel they cannot control the situation. In the halal status of the Cadbury scandal, consumers more likely will do their purchase if they feel they have more control in making the purchase [33]. People have positive intentions to purchase halal food products if they think they have perceived behaviour control on the halal food product purchasing [28]. Thus, this paper posits that:

H7: There is a positive and significant relationship between perceived behaviour control and intention to use toward halal online food delivery service.

Halal Certificate as moderator

Halal certificate is referring as official recognition of the process of preparation, slaughtering, handling, cleaning and other practices by approved Islamic organisations, for example Jakim in Malaysia. Halal certification, also called halal image, refers to the use of the logo, symbol, image and trademark of halal which means that the product is in compliance with Islamic guidance [34]. Halal Certificate is a document that guarantees that the product and service go through a process of preparation, slaughtering, cleaning, handling, storage and logistics that meet the requirements of Islamic law. With the halal certificate, the product and service are suitable to be a consumptive Muslim consumer [35]. In Malaysia, Department of Islamic Development Malaysia (JAKIM) is the agency responsible for the Islamic affairs including halal certification in Malaysia. JAKIM will make sure the halal status of raw material is monitored and maintained in every stage and every process (Halal Malaysian Portal, n.d.). Halal food is accepted by Muslim and non-Muslim consumers. Food with halal certificates adheres to high standards in hygiene and sanitation. Non-Muslims have a positive attitude toward food with halal certificates due to their concern with food cleanliness and safety. For halal certificates issued by a reputable

agency, halal food gives the confidence and trust to the consumer that the food they purchase follows sharia Law. Halal certificate applied to product and service [13]. Halal Certificates influence a person's attitude and level of confidence toward intention to purchase halal food [36]. Halal-conscious Muslim have high attitudinal loyalty and intention to buy food with halal certificates [34]. Thus, this paper posits that:

H8: Halal Certificate strengthens the relationship between attitude and intention to use toward halal online food delivery service.

The proposed theoretical framework is illustrated as below Figure 2. It shows the conceptual framework for factors influencing consumer attitude toward halal online food delivery service in Malaysia.

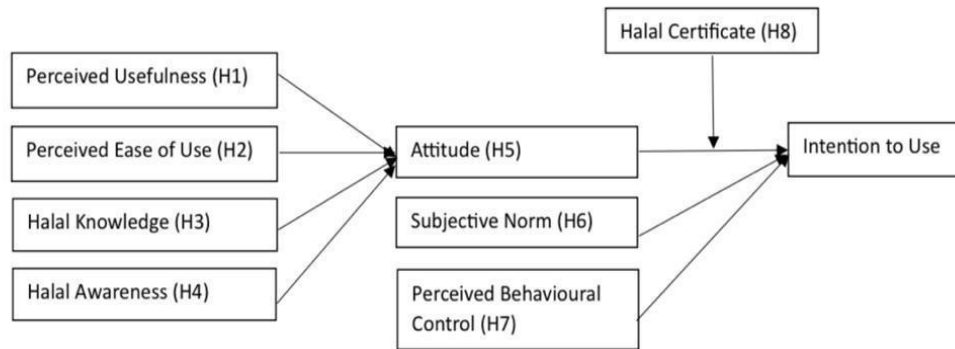


Figure 2 Conceptual framework

III. METHOD

This research uses a quantitative technique to examine factors influencing consumer attitude toward halal online food delivery service in Malaysia. Technology Acceptance Model (TAM) and Theory of Planned Behaviour (TPB) are used as a proposed theoretical framework in this research. Perceived usefulness, perceived ease of use, halal knowledge, halal awareness, attitude, subjective norms and perceived behaviour control are independent variables in the research. Halal certificate as a moderator while intention to use as a dependent variable. A 5-point likert scale is used in measurement of variables. The unit of analysis in this research in Malaysian consumers of online food delivery services. Cross-sectional study and quantitative study have been used in this research. Cross-sectional study allowed data collection from many different participants at a point of time. Questionnaires are used as a research tool to gather information from participants. Questionnaire allowed a lot of data to gather in a short time in the most cost-effective way. A closed-ended self-administered questionnaire survey in google form was posted in social media, email and whatsapp to consumers in Malaysia. Unbiased and simple wording used in questionnaires so consumers can understand the question easily. Besides that, there is less chance of bias if a standard set of questions is provided. Question with minor modification is adopted from previous study. Items used to measure perceived usefulness (PU), perceived ease of use (PEOU) and intention to use (IU) adapted from [21]. Items used to measure halal knowledge adapted from [37]. Items used to measure halal awareness and halal certificates adapted from [38]. Items used to measure attitude (AT), subjective norms (SN) and perceived behaviour Control (PBC) adapted from [39]. All the constructs were measured using a 5-point Likert scale from strongly disagree - 1 to strongly agree - 5. All data collected is transferred to SPSS in excel format. The data is transferred to Smartpls 4.0 in comma delimited format. Partial Least Squares-Structural Equation Model (PLS-SEM) is used to analyse data and test cause-effect relationship among the variables in the research. The relationship among the research variables and measurement items can be concurrent analysed.

(a) Population and Sampling

The population targeted in this research are consumers from Generation Z, Millennials, Generation X, and Baby Boomers as they are leading consumers in online food delivery service. They are more willing to try new technology and pay a little bit extra for their convenience. Generation Z and Millennials make up almost two-thirds of all consumers according to the analysis of Uber Eats in 2020. Generation X, Baby Boomers and the Silent Generation make up 20 percent, 11 percent and 6 percent respectively. Generation Z refers to people born between 1997-2012 who are aged 11-26 years. Millennials refer to people born between 1981-1996 who are aged 27-42 years. Generation X refers to people born between 1965-1980 who are aged 43-58 years. Baby Boomers refers to people born between 1946-1964 who are aged 59-77 years. The Silent generation refers to people born between 1928-1945 who are aged 78-95 years [40]. Sampling is a method of targeting participants

in research from a population. Sampling is a cost-effective and time convenient way used to estimate and know the characteristics and behaviour of the whole population. Purposive sampling is used in this research which targeted the consumers aged 11-77 years old, from Malaysia and used online food delivery service before. Purposive sampling is formed when the researcher knows the target participant needed in the research for the purpose of the research [41].

(b) Sample Size

Sample Size is the number of participants used in the research. The precision of the estimation and the power of the research to conclude are the two statistical properties influenced by sample size. To determine sample size, G*Power software is used in this research. G*Power software is used due to a wide variety of tests that can be used to determine statistical power. The type of test, alpha level and desired level of power can be specified in the software. Based on G*Power, the total sample size we need in this research is 103 participants. In this research, a total of 196 participants answered the questionnaire but only 165 participants fit the analysis.

(c) Research Instrument

Questionnaires are used in the research to collect data from participants. It is a research instrument composed of a set of pre-formulated questions to collect data from participants. The questionnaire aims to collect a lot of data in a short time with cost effectiveness [42].

The questionnaire must be valid and reliable and in line with the research objective. In the research, 5-point likert type questions to collect interval data. It is one of the types of closed-ended questions [43]. A 5-point likert scale from strongly disagree to strongly agree are used in the question. In the research, the cover letter which states the aim of the research is placed in the first page. The letter helps in assuring that the data collected is confidential. Research question is adapted from a previous study [21]; [37]; [39]

(d) Data Collection

Data collection is a process of collecting measurements and observations which help to get first-hand information and data into the research problem. The aim of the research needs to be clarified before data collection. The type of data and the procedure to be used in data collection need to be clarified [43]. In the research, an online questionnaire in google form is distributed via social media to collect the data. Social media is a type of communication interaction among the people by means to create, exchange, share ideas and information via virtual networks. Social media used in the research is email, whatsapp, and facebook. By using the online questionnaire, it enables a large set of data to be collected in a short time with cost effectiveness. An Internet link which can be accessed to the questionnaire is provided to participants. The purpose of research to examine factors influencing consumer attitude toward halal online food delivery service in Malaysia is highlighted in the questionnaire.

(e) Partial Least Squares - Structural Equation Modelling (PLS-SEM)

Structural Equation Modelling (SEM) is a multivariate statistical analysis which examines the structural relationship between measured item and latent variables. SEM is composed of factor analysis and multiple regression analysis. Multiple and interrelated dependence can be examined in a single analysis by using SEM. There are two types of variables used in the analysis which are exogenous and endogenous variables. Exogenous variable is equal to independent variable while endogenous variable is equal to dependent variables. SEM is a set of relationships which provide comprehensive and consistency of the actual phenomena. Measurement model theory and structural model theory are examined in SEM. Since SEM is suitable for use in the research, Partial Least Squares - Structural Equation Modelling (PLS-SEM) will be used to examine the research outcome. Partial Least Squares - Structural Equation Modelling (PLS-SEM) is designed to predict causal-predictive in the models. Path models are developed, and theoretical relationships are tested. Measurement theory and structural theory are used to develop path models. In measurement theory, variables are specified, and some theoretical concepts are measured. In structural theory, the way the variables related to one another are specified. There are two steps when PLS-SEM is used to test the theory. Firstly, measurement theory is tested to examine the reliability and validity of the measurement model. Next, structural theory is tested [44].

IV. RESULTS

(a) Descriptive Analysis

Descriptive analysis helps in demonstrating, describing and summarising the data in a logical and constructive way so that the patterns can fulfil every condition of the data [45]. It provides a conclusion of a data distribution pattern from data collected in questionnaire [46]. In this research, there were 195 participants who participated in the questionnaire. 30 participants are rejected due to 3 screening questions as the targeted participants are the individuals who are aged 11 - 77 years old, Malaysian and have used online food delivery service before. So, data is collected from a sample of 165 participants.

Majority of them are male (53%), married (56%), between 31 -40 years old (33.3%). Based on the race, majority of them are Malay (56%), from Pulau Pinang (29.3%) and possess bachelor's degree (33.3%) with monthly income RM3001 - RM5000 (33.3%). Most of the food delivery service platforms they like to use is GrabFood (49.4%) and mostly they use the OFD service oftenly (48.8%).

(b) Assessment of the Measurement Model (Stage-1)

The relationship between a latent variable and its items are ascertained by factor loadings, composite reliability (CR) and average variance extracted (AVE). Convergent validity and discriminant validity are the two types of measurement model analysis used to assess the quality of the variables from the aspect of reliability and validity.

Factor Analysis

Factor analysis is used in research to help researchers to condense data from large numbers of variables to smaller numbers of variables. The factor analysis is reliable. Factor loading ranges from -1 to 1 which is used to describe how much an item explains a variable. Factor loading close to -1 and 1 showed that item has a strong influence on variables. Factor loading close to 0 showed that the item has low influence on variables [47]. The relationship of each item to the variables is assessed by factor loadings [48]. Factor loading is assessed first when we want to report the measurement model. The result in Table 1 shows that all outer loadings are higher than 0.7. As a rule of thumb, for outer loading 0.7 or higher, it means that the variance extracts sufficient variance from the item.

Composite Reliability

Composite reliability (CR) is used to determine the internal consistency of the item load on the variables. It is used to determine the scale's reliability of the measurement model. For composite reliability higher than 0.7, it is a good indication that all our items constantly measure the same variable. In this research, we can see the composite reliability of the constructs range from 0.881 to 0.932 which indicates all the constructs are constantly measured by their items.

Convergent and Discriminant Validity

To assess the validity of the measurement model, convergent and discriminant validity are used. Convergent validity used to examine whether the item measure converges to represent the variables. When Average Variance Extracted (AVE) is more than 0.50, convergent validity is established. In our research, the average variance extracted is higher than 0.5. To determine the distinctiveness of the variable in our research, we can use Heterotrait- Monotrait (HTMT) Ratio. According to [47], for HTMT value above 0.90 is lack of discriminant validity which means the variables are conceptually very similar. For HTMT below 0.90, discriminant validity is established between the two variables. According to Table 2, there is 0.904 between Halal Awareness and Halal Certificate. This finding means that these two variables are conceptually similar.

Construct and Items	Outer loadings	CR	AVE
Perceived Usefulness (PU)			
Using an halal online food delivery service is an efficient method to order my meals (PU1)	0.929	0.918	0.858
Using an halal online food delivery service makes my life easier (PU2)	0.923		
Using an halal online food delivery service is a useful (PU3)	0.927		
Perceived Ease of Use (PEOU)			
I find it easy to find what I want via halal online food delivery service (PEOU1)	0.869	0.886	0.814
My interaction with an halal online food delivery service is clear and understandable (PEOU2)	0.932		
It is easy for me to navigate via an halal online food delivery service (PEOU3)	0.904		
Halal Knowledge (HK)			
I understand the halal logo on halal food before purchase (HK1)	0.886	0.89	0.809
I understand the ingredient, process and impacts of halal food before I purchase (HK2)	0.907		
I will get enough information on halal food before purchase (HK3)	0.906		
Halal Awareness (HA)			
I will make sure the product has gone through halal process before I purchase it (HA1)	0.924	0.932	0.847
I will only purchase the product if I know it is halal (HA2)	0.930		
I will only purchase the product if the halal process follows Sharia laws (HA3)	0.907		
Attitude (AT)			
For me, using the halal online food delivery service is good (AT1)	0.891	0.904	0.769
For me, using the halal online food delivery service is rewarding (AT2)	0.888		
For me, using the halal online food delivery service is wise (AT3)	0.862		
For me, using the halal online food delivery service is favourable (AT4)	0.867		
Subjective Norm (SN)			
People who are important to me think that I should use halal online food delivery service (SN1)	0.949	0.914	0.85
People who influence me would think that I should use halal online food delivery service (SN2)	0.931		
People who opinions are valued to me would think that I should use halal online food delivery service (SN3)	0.884		
Perceived Behavioral Control (PBC)			
I have time, opportunity, and resources to use halal online food delivery (PBC1)	0.885	0.881	0.79
I know how to use halal online food delivery service (PBC2)	0.896		
I am confident that I can use halal online food delivery service if I want (PBC3)	0.886		
Halal Certificate (HC)			
Halal Certificate is important in meal selection (HC1)	0.918	0.942	0.843
I will choose the product with halal certificate (HC2)	0.923		
I will be careful when choosing products with halal certificate service if I want (HC3)	0.947		
I am aware of genuine and non genuine halal certificates (HC4)	0.883		
Intention To Use			
I plan to use an halal online food delivery service in the near future (IU1)	0.925	0.899	0.832
I will try to use an halal online food delivery service if I have the chance (IU2)	0.926		
I will try to use an halal online food delivery service if I need it (IU3)	0.886		

Table 1 Measurement Model

	AT	HA	HC	HK	IU	PBC	PEOU	SN	PU	HC x AT
AT										
HA	0.526									
HC	0.495	0.904								
HK	0.419	0.736	0.746							
IU	0.782	0.532	0.562	0.463						
PBC	0.738	0.47	0.517	0.532	0.75					
PEOU	0.698	0.397	0.4	0.445	0.647	0.713				
SN	0.886	0.608	0.585	0.451	0.807	0.743	0.656			
PU	0.766	0.495	0.487	0.452	0.685	0.679	0.813	0.68		
HC x AT	0.106	0.167	0.244	0.225	0.067	0.047	0.063	0.138	0.105	

Table 2 Discriminant Validity

Assessment of the Structural Model (Stage-2)

Assessment of the structural model is performed after the reliability and validity of the measurement model are established. Firstly, potential collinearity problems need to be examined by using variance inflation factor (VIF). Then we will examine the significance and relevance relationship between the variables in the structural model. Finally explanatory power and predictive power of the structural model is evaluated [44].

Collinearity Assessment

Variance Inflation Factor (VIF) is a measuring tool used to test the multicollinearity of the model. Using the variance inflation factor can help us identify that the model is functioning correctly and properly. Multicollinearity can reduce the statistical significance of the independent variables even if it does not reduce the explanatory power of the model [49]. Variables are not correlated if the variance inflation factor is equal to 1. They are moderately correlated for variance inflation factor between 1 and 5. For a variance inflation factor higher than 5, it means that the variables are severely correlated. If variance inflation factors higher than 10, the severely multicollinearity issue needs to be corrected. In this research, all the VIF amounts are between 1-5, according to Table 3, it can be concluded that the independent variables are moderately correlated.

	AT	IU
AT		3.059
HA	1.926	
HC		1.68
HK	1.865	
IU		
PBC		2.026
PEOU	2.216	
SN		3.528
PU	2.383	
HC x AT		1.179

Table 3 Collinearity Diagnostic

Path Coefficient

The correlation of the single independent variable on dependent variable. The value of the path coefficient is between -1 to +1. The value closer to -1 means strong negative relationships while the value closer to +1 means strong positive relationship [44]. In the research, the results of the path coefficient indicate there is a significant positive relationship between perceived usefulness and attitude (b = 0.440); perceived ease of use and attitude (b = 0.237); halal awareness and attitude (b = 0.226); attitude and intention to use (b = 0.245); subjective norm and intention to use (b=0.344); perceived behavioural control and attitude (b =0.246). There is a significant negative relationship between halal knowledge and attitude (b = -0.043) and halal certificate as a moderator in attitude and intention to use (b = -0.088).

t-value

In the T test, *t*-value is used to decide whether a null hypothesis should be supported or rejected [50]. We can know our observed data distance from the null hypothesis by using *t*-value. Significant relationships occur when the *t*-value is higher than 1.96 (two-tailed). The greater the T value means our observed data is different from average, the lower the T value means our observed data is not significantly different from the average [51]. From the result in this research, all the T value is higher than 1.96 except the *t*-value of Halal certificate between attitude and intention to use relationship and Halal knowledge to Attitude relationship. The value of Halal certificate between attitude and intention to use relationship is 0.997 while Halal knowledge to Attitude relationship is 0.539.

P-Value

P-value is the probability which is used to examine whether the relationship between two variables is significant or not. For p value less than 0.05, the hypothesis is supported, the null hypothesis is rejected as the relationship between two variables is significant. In our research result, the p-value of Halal certificate to intention to use is 0.159 while Halal knowledge to Attitude is 0.295. The two relationships have a higher p value than 0.05. Other relationships are significant as the p-value is below 0.05.

Coefficient of Determination, R²

R-square is used to measure the proportion of the variance of the dependent variable which is explained by the independent variable [52]. It's also named as the coefficient of determination [53]. R-square of the endogenous variables are assessed as 0.75(substantial), 0.50(moderate), or 0.25(weak). The value is between 0 to 1. For R-square 0 means the independent variable does not predict the dependent. For the R-square value between 0 to 1, the dependent variable is partially predicted by the independent variable. For R-square is 1, the dependent variable is perfectly represented by the independent variable [54]. In this research, the R-square of the attitude is 0.55. This means attitude is 55% explained by perceived usefulness, perceived ease of use, halal knowledge and halal awareness. The R-square for intention to use is 0.637. This means that intention to use is 63.7% explained by attitude, subjective norm and perceived behavioural control.

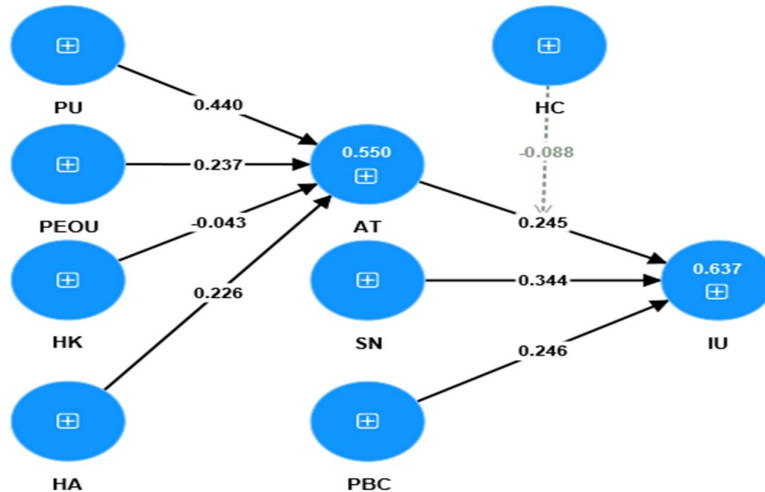


Figure 3 Coefficient of Determination

Effect Size (f^2)

F-square is a measurement of the change of R-square when the independent variable is removed from the model. For the f-square more than or equal to 0.02, the effect is small. For the f-square more than or equal to 0.15, the effect is medium. For the f-square more than or equal to 0.35, the effect is large [55]. From our research result, the effect of halal knowledge on attitude is small as the f-square is 0.002 which is smaller than 0.02. The f-square of halal awareness and perceived ease of use are 0.059 and 0.056, the effect size also small as both values are greater than 0.02 but lower than 0.15. The f-square value of perceived usefulness is 0.18, the effect size is medium as the value is higher than 0.15 but smaller than 0.35. The f-square value of halal certificate on intention to use is 0.009 which is smaller than 0.02 means the effect size is small. The f-square of attitude, perceived behavioural control, subjective norm on the intention to use is 0.054, 0.082, 0.093 which is greater than 0.02 but smaller than 0.15 means the effect size is small.

	f-square	R-square	R-square adjusted
AT		0.55	0.543
HA	0.059		
HK	0.002		
PEOU	0.056		
PU	0.18		

Table 4 f-Square (Effect Size), R-Square for Attitude

	f-square	R-square	R-square adjusted
IU		0.637	0.63
AT	0.054		
HC	0.009		
PBC	0.082		
SN	0.093		
HC x AT	0.034		

Table 5 f-Square (Effect Size), R-Square for Intention to Use

Predictive Relevance (Q^2)

Predictive relevance Stone-Geisser’s Q2 value is the last step of structural model analysis. Blindfolding in the SmartPLS is used to find the Q-square which is used to measure whether the structural model has predictive relevance or not [56]. Predictive relevance of the dependent variables can be examined by Q-square. For Q-square more than 0, it means that the research model has predictive relevance and is well reconstructed. Q-square should be examined after the assessment of coefficient of determination to measure the predictive

accuracy. In this research, the Q-square is greater than zero value, it's indicated the dependent variables in the model have predictive relevance. The value is significant. Perceived usefulness, perceived ease of use, halal knowledge and halal awareness predict attitude. Attitude, subjective norm and perceived behavioural control can predict intention to use.

	Q ² predict
AT1	0.495
AT2	0.369
AT3	0.333
AT4	0.362
IU1	0.486
IU2	0.465
IU3	0.477

Table 6 Predictive Relevance

V. DISCUSSION AND CONCLUSION

The primary objective of this research is to examine the factors influencing consumer attitude toward halal online food delivery in Malaysia. On top of that, halal certificates are used to examine as moderator between attitude and intention to use halal online food delivery service in Malaysia. From the finding of the research, H1 coincides with [24] and [22] which states that there is a positive and significant relationship between perceived usefulness and attitude toward halal online food delivery service. [24] stating that perceived usefulness of mobile food apps influence consumer attitude toward online shopping. [22] state that the perceived usefulness directly influences a person's attitude to use the system. [23] also stated perceived usefulness affects consumer attitude on banking mobile apps. Consumers have a flavour attitude when they think the service is useful for them as they can access diverse halal food in a short time. Thus, H1 is supported.

Moreover, the relationship between perceived ease of use and attitude toward halal online food delivery service in Malaysia is positive and significant. The research of H2 is in line with [24]. As [24] states, perceived ease of use toward mobile apps creates a flavour attitude on consumers. [23] also stated the perceived ease of use has a positive and significant effect on consumer attitude toward banking technology. Consumers have a flavourful attitude to the halal online food delivery service as the order platform is ease of use. Thus, H2 is supported.

There is a negative and significant relationship between halal knowledge and attitude toward halal online food delivery service in Malaysia. The finding contradicts [26] which stated that halal knowledge is the predictor in determining a person's attitude toward intention to use halal products. It also opposes [27] statement that muslim have a positive attitude toward halal products by having halal knowledge. The possible explanation is that consuming halal products or services is an important aspect in Islam religion. Muslim need to ensure the food and product they consume is halal no matter whether they have the relevant knowledge or not. Thus, H3 is not supported.

The findings from the research stated that there is a positive and significant relationship between halal awareness and attitude toward halal online food delivery in Malaysia. [29] mentioned consumers have a flavour attitude toward halal food consumption when they have halal awareness. [27] stated that halal awareness influences consumer attitude in choosing the halal product even to non-muslim. Halal awareness serves as a constant reminder for Muslims that the food and services they engage with must adhere to Shariah rules and guidelines. Thus, H4 is supported.

There is a positive and significant relationship between attitude and intention to use. This finding coincides with [27], [26] and [33]. [27] stated a person's attitude toward halal food influences their intention toward halal food consumption. [26] shared that attitude is important in determining a person's intention to use halal products. [33] mentioned attitude is an evaluation of a person's intention to use halal products. Muslims and non-Muslims tend to choose halal food when they think it to be hygienic, safe, and of higher quality compared to other options. Thus, H5 is supported.

In our research, the relationship between subjective norm and intention to use halal online food delivery service is positive and significant. As [28] said people have intention to use halal products as it is a socially desirable behaviour. [33] stated there is high intention to use halal products for muslim stay in Islamic countries. [29] mentioned subjective norms can influence a person's intention to use halal products. The majority population in Malaysia is muslim which means societal norms align with Islamic principles. Thus, H6 is supported.

The relationship between perceived behavioural control and intention to use halal online food delivery service is positive and significant. [31] stated a person will purchase halal food if they think they have control over halal food purchase. [28] mentioned consumers have positive intention to use if they think they have high perceived behavioural control. [33] shared that consumers have the intention to use halal products and services if they feel they are more likely in halal products purchase. Malaysia is a islamic country, consumers easily get halal food. Consumers tend to have a positive attitude to consumer halal food as they know they can get the food easily if they want. Thus, H7 is supported.

There is a negative and significant relationship for halal certificates as a moderator between attitude and intention to use toward halal online food delivery service. The finding contradicts previous research by [36] stating that halal certificates influence a person's attitude and level of confidence toward intention to use halal products. The finding also opposes [34] opinion that muslim consumers have a positive attitude and intention to use halal products with halal certificates. The possible explanation for this could be that Malaysia is a muslim majority country with most of the restaurants and products are halal certified, so halal certificate is part of daily life for consumers in Malaysia. Thus, H8 is not supported.

VI. SIGNIFICANCE OF THE STUDY

From theoretical contributions, this research studies the impact of perceived usefulness, perceived ease of use, halal knowledge and halal awareness toward consumer attitude and intention to use on halal food delivery service. From the research finding, perceived usefulness, perceived ease of use, halal awareness has positive and significant impact on consumer attitude toward halal online food delivery service which lead to intention to purchase. In addition, attitude, subjective norm and perceived behavioural control have positive and significant impact on consumer intention to use the halal online food delivery service. In this research, halal certificate is used as a moderator between consumer attitude and intention to use halal online food delivery service. Although the hypothesis is not supported, it will provide further researchers with new insight to study on the finding. Theory of Planned Behaviour (TPB) and Technology Acceptance Model (TAM) discussed in complementary manner to study factors influencing consumer attitude toward halal online food delivery in Malaysia.

From practical contribution, platform service providers get a better understanding factor influencing consumer attitude toward halal online food delivery in Malaysia. They can come out with their business strategy to suit the consumer's wants in Malaysia. For academic scholars, researchers can perform further explanation in their future research for the relevant topic. This research not only brings valuable information for the platform service provider and academic use, it also provides useful information for other business partners such as regulatory bodies, financial and banking institutions, technology providers, government sector and private sector. The finding of the research can also be used as guideline and reference for relevant government departments in planning for suitable strategic framework in halal online food delivery service in Malaysia. Besides that, the actual outcome also provides useful information for the government to come up with an incentives plan and policy which encourage more online food delivery service providers in Malaysia to build their halal online food delivery fleet. Government also can provide training and education in guidance food providers and online food delivery service providers how to handle food and increase their sense of halal and safety of the food during preparation and delivery.

For future study, researchers can expand the proposed model to study consumers outside Malaysia particularly with the country having a high majority of muslim population. Besides that, researchers also can analyse the impact of different culture and religion on the attitude of consumers toward halal online food delivery service. Moreover, the quality and authenticity of the halal online food delivery platform impact on consumer attitude can be studied to know more about consumer behaviour. These findings from this research study consumer attitude factors influencing consumer attitude toward halal online food delivery in Malaysia. This research also studies the attitude of consumers toward intention to use. There are several factors that are proved in this research such as perceived usefulness, perceived ease of use, halal awareness being positive and significant. Perceived usefulness is found to be the major item which influences attitude toward intention to use. These findings provide useful insight to the platform designer.

ACKNOWLEDGEMENT

This study is supported by the Ministry of Higher Education (MOHE) through Fundamental Research Grant Scheme (FRGS/1/2021/SS01/USM/02/1)

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