To pay or not to pay: Measuring the effect of religiosity in the ABC theory

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CHRONICLE	ABSTRACT
	This study identifies the role of religiosity in the willingness to pay for halal transportation among Muslim consumers in Malaysia by applying the ABC theory. Applying a purposive sampling method, data were gathered from questionnaires distributed to Muslim consumers at malls in Kuala Lumpur and Putrajaya. From 250 Muslims who were approached, 200 respondents agreed to answer the questionnaire. SMART-PLS 3.3.2. was used to analyze the data for this study using a Structural Equation Modelling (SEM) approach. Out of six direct hypotheses tested, five hypotheses were found supported. From four hypotheses on mediation, only one was found as unsupported. Religiosity was found to have a moderation effect between knowledge and the WTP for halal transportation. The findings provide useful information on the WTP for halal transportation. Related parties such as governments, halal transport service providers and customers can use these findings to plan further actions in order to enhance the WTP for halal transportation. The study reveals the capability of the ABC theory to identify the factors of the WTP for halal transportation among Muslim consumers in Malaysia. The findings also show the moderation effects of religiosity on the WTP for halal transportation. The study also incorporates awareness as a mediator and as a sequential mediator within the model. The findings also enrich the literature on the WTP in halal studies.

1. Introduction

Most people in the world have their own faiths which are known as religions. Each religion has its own practices according to its own scriptures which shape its followers' behaviour. Religiosity is viewed as the level to which followers will explicitly practice what has been commanded in the scriptures. For Muslims, the Quran is the holy book, which is fixed from the beginning to the end. It provides clear guidelines on what should be followed and avoided. Islam is not only a religion; it is also a way of life. It is a Muslim's obligation to only consume *halal* products. To ensure the credibility of the *halal* products, from the manufacturing process to the point of consumption, *halal* products should be transported by *halal* transportation providers. *Halal* transportation is part of the full system in *halal* supply chain activities. It is offered mainly to preserve the credibility of *halal* products. When *halal* transportation is not adopted, the *halal* quality of the products could be jeopardized (Abdul Hafaz Ngah et al., 2019). Realizing the importance of *halal* transportation in preserving *halal* quality for Muslim consumers (Abdul Hafaz Ngah & Thurasamy, 2018), logistics service providers play their roles by offering this service in spite of higher investments (Iranmanesh, Mirzaei, Parvin Hosseini, & Zailani, 2019). The high quality assurance of *halal* certification requires logistics providers to invest more to become *halal* transportation providers (Hafaz Ngah et al., 2020). Requirements in the *halal* certification process incurs high costs, raising questions on the worth of becoming a *halal* transportation provider (Zailani et al., 2017). Unfortunately, by fulfilling Muslim consumers' needs, providers need to transfer the

cost to customers which affects the price of *halal* products (Zailani et al., 2017; Iranmanesh et al., 2019). This in turn affects their businesses' sustainability. Higher costs will negatively impact the consumers' willingness to buy *halal* products which will be detrimental to *halal* manufacturers, *halal* transporters and other *halal* service providers. The lack of study on the effects of *halal* certification on companies' performance results in *halal* companies claiming that it is not worthwhile to impose additional costs on *halal* products (Zailani et al., 2017; Iranmanesh et al., 2019). Hence, it is deemed important to understand the consumers' willingness to pay for *halal* transportation services.

Several studies have been conducted in the *halal* field, either in logistics (Haleem et al., 2018), warehousing (Abdul Hafaz Ngah et al., 2017), transportation (Abdul Hafaz Ngah et al., 2015), supply chain (Omar & Jaafar, 2011), certification (Ab Talib & Ai Chin, 2018), willingness to pay (Fathi, Zailani, Iranmanesh, & Kanapathy, 2016; Ngah, Kim, et al., 2019; Asri & Ngah, 2018) and standards (Azmi et al., 2019). Most *halal* studies are bounded within the Theory of Planned behaviour and its extended version, and these focus on measuring the intention to adopt and the intention to purchase. However, studies focussing on the willingness to pay remain scarce. According to Rivis, Sheeran, and Armitage (2006), willingness is stronger than intention when predicting consumer behaviour. Hence, the present study fills a knowledge gap by contributing to the *halal* transportation and marketing literature by identifying factors influencing the willingness to pay for *halal* transportation using the attitude, behaviour-context (ABC) theory by Guagnano et al. (1995).

According to the ABC concept, attitude is technically treated as a mediator for behavioural factors within the model. Thus, to enhance the predictive power of the research model, instead of testing attitude as a single mediator, the authors add awareness as a moderator and as a sequential mediator in the study. Despite treating religiosity as an external condition, religiosity is also used as a moderator between knowledge and willingness to pay. As a good Muslim, consuming *halal* products is part of one's religious obligations. From the Islamic perspective, knowledgeable Muslims have a better position. Meanwhile, a higher level of religiosity means a stronger willingness to submit to religious commitments. On the other hand, higher prices could negatively influence consumers' future behaviour. Furthermore, as Malaysia is a leader in *halal* matters, how Muslims' behaviour is influenced by religiosity aspects is an essential consideration to be understood by businesses (Bukhari et al., 2019) and by logistics providers. Hence, it is interesting to understand the role of religiosity as a moderator in the relationship between knowledge and willingness to pay for *halal* transportation among Muslim consumers.

The current study contributes by providing a better understanding of the willingness to pay for *halal* transportation and furthers the literature on *halal* transportation studies. The authors examine willingness to pay by linking the ABC theory to *halal* studies and by introducing the mediator and the moderator within the research model. Furthermore, mediation and moderation are highly valued by marketing researchers since both can enhance the model's predictive power. Moreover, there is a scarcity of publications adding religiosity as a moderator, and testing awareness and attitude as sequential mediators within the ABC theory and *halal* studies. Due to Malaysia's role as a leader in this area of study, the findings are also beneficial to other countries which share similar characteristics, especially in the Asia Pacific region. Moreover, the findings may also be beneficial to *halal* logistics players in Malaysia and around the globe.

Acknowledging the customers' future behaviour, especially among Muslim consumers, is extremely crucial not only for the sustainability of *halal* transportation providers, but also for non-*halal* logistics providers around the globe. The findings of this study can help such companies decide whether becoming a *halal* logistics provider is worthwhile. In Malaysia, only a small number of logistics providers are certified as *halal*. Top managements of *halal* transportation providers should understand the attitude and the WTP among related parties prior to making such a decision (Han et al, 2019).

This paper continues with the literature review and hypothesis development in section 2. The research methodology, which describes the sampling method and the data collection process, is addressed in section 3. The last section deals with a thorough data analysis and addresses the discussion and the limitation of the study before proposing directions for future research.

2. Literature review

This section discusses the current knowledge on *halal* transportation, the ABC theory and literatures used to develop the hypothesis of the study.

2.1 *Halal transportation*

As part of the *halal* supply chain services, *halal* transportation is vital to the preservation of the quality and attributes of *halal* products. All products go through this phase when manufacturers use their own or third-party transport services. Customers need to afford the cost of inbound transport to the manufacturers, and outbound transport to the distribution centres and points of sale. Due to strict requirements of *halal* certifications, *halal* and non-*halal* products must be segregated along the supply chain. Once *halal* becomes *haram* due to transgressions during the delivery processes, using *halal* transportation will no longer ensure the products are *halal* and fit for consumption by Muslims. Therefore, if manufacturers use third-party transportation services, the *halal* quality can only be preserved when using *halal* transportation services (Abdul Hafaz Ngah & Thurasamy, 2018).

2.2.   ABC Theory

Although the ABC theory of consumer behaviour is applied to diverse areas of research, it is predominantly found in environmental studies. The theory is not limited to the field of environmental research as it also predicts consumers' behaviours across various contexts. To deviate from the TPB theory, which is commonly used to predict consumer behaviour in *halal* related studies, the authors rely on the attitude-behaviour-context theory developed by Guagnano et al. (1995). According to this theory, contextual factors are useful to predict consumers' attitude towards exhibiting certain behaviours. Hence, consumers' religiosity is used to predict awareness and attitude towards paying for *halal* transportation. Furthermore, according to Goh and Balaji (2016), attitude is not sufficient to explain consumers' behaviours. Situated in the ABC theory framework, the study includes awareness in the model as a predictor towards the willingness to pay for *halal* transportation and as a mediator with attitude. Consequently, moderating factors of knowledge enhance the explanatory power of the study.

2.3 Religiosity

Religiosity is a mutual attitude of principles and practices in consecrated things or routine life and it encourages the comprehension of one's association and duty to one another when one lives in a group (Mukhtar & Butt, 2012). Religiosity is often connected with the state of one's belief in god. Hence, religiosity can be considered as an individual's belief about absolute inherent truth qualities which is based on holy scriptures. Guided by Islamic norms, Muslim consumers should have similar traits despite varying geographical factors. Understanding the role of religiosity among Muslim consumers is beneficial to manufacturers or service providers in developing a standard marketing plan for Muslims around the globe. Religion has an effect on purchase behaviour, however the role of religiosity on the Muslim purchase behaviour has not been extensively studied (Abd Rahman et al., 2015). According to Ramadania et al. (2018), religiosity has a positive relationship with the awareness of *halal* products. Religiosity also has been found to have a positive relationship with attitude (Abd Rahman et al., 2015; Garg & Joshi, 2018). The wholesomeness of Islam as a way of life guides Muslims to be aware of what they should do for the best of themselves and their community. This leads to the postulates that:

H1: Religiosity has a positive influence on awareness.
H2: Religiosity has a positive influence on attitude.

2.5. Awareness

Awareness refers to the realization of the availability of certain things. According to Aziz and Chok (2013), awareness can be defined as having and acknowledging information about specific things. Awareness is commonly associated with consumer future behaviour especially related to the buying decision. It also has a major influence on consumers' decision to accept a new innovation (Abdul Hafaz Ngah et al., 2014a). For Muslims, the awareness of *halal* is not only confined to products' certification, but it also relates to services such as storage and transportation which are aligned with *Sharia* requirements (Zakaria et al., 2017). Hence, low awareness of the *halal* concept will not enhance the willingness to pay among consumers towards *halal* logistics services (Alqudsi, 2014). Awareness has been found to have a positive influence towards attitude (Foroudi, 2019; Xu, Wang, & Yu, 2020). Awareness was also found to have a positive relationship with attitude and the WTP for green furniture (Xu et al., 2020). In another study, awareness was also proved to have a positive relationship with the willingness to pay for insurance (Senapati, 2020). This leads to the postulates that:

H3: Awareness has a positive influence on attitude.
H4: Awareness has a positive influence on the WTP for *halal* transportation.

2.6 Attitude

Attitude is a vital factor influencing consumer behaviour. Several theories, such as the Theory of Planned Behaviour and the Theory of Reasoned Action, included attitude as a factor explaining consumer behaviour in green studies among others. Attitude refers to an individual's evaluation of a particular behaviour, which could have either positive or negative forms (Fishbein & Ajzen, 2011). Attitude was found to have a positive relationship with willingness to pay more (Le & Kieu, 2019) and to pay online (Salonen et al., 2020). Furthermore, Parvin Hosseini, Mirzaei, and Iranmanesh (2019) found that attitude has a positive relationship with the willingness to pay for *halal* food. Hence, the study proposes that:

H5: Attitude has a positive influence on the WTP for *halal* transportation.

2.7. Willingness to pay (WTP)

According to Hafaz et al. (2019), WTP has been defined as how much individuals are willing to sacrifice in term of monetary value to obtain certain services. Based on Ngah et al. (2019), WTP is the highest amount of money individuals are willing to pay for a service. Similarly, WTP refers to the highest amount customer desire to pay to obtain a product (Parvin Hosseini et al., 2019). The WTP is unequal among consumers. Various factors could be related to the WTP for products or services. WTP a higher price is closely related to the customers' perceived value of products and services (Kalantari & Johnson, 2018). A

higher perceive value leads to a higher WTP. Understanding the WTP concept is crucial to providers and manufacturers to ensure the sustainability of their businesses.

2.8 Knowledge

Knowledge will guide individuals in deciding what is best for them. Scholars agree that knowledge plays an essential role in explaining customers' decision-making processes and their future behaviour. New products or service knowledge provide information associated with products or services based on their components, specifications, features, procedures and benefits (Chang, 2017). According to Markkula and Moisander (2012), the knowledge-to-action gap influences individuals' WTP in their future behaviour. Due to various reasons, consumers may not buy a product or service despite the availability of information. Product knowledge is complex, especially when a set of technologies and skills are involved in performing the given services (Chang, 2017).

According to Ahmed, Najmi, Faizan, and Ahmed (2018), knowledge of the products or services has an influence on both the acceptance and rejection of products and services. Knowledge also has been found to have a positive relationship with the WTP for social health insurance (Nguyen & Hoang, 2017) and the WTP for energy-efficient appliances (Guomin Li, Wei Li, Zihan Jin, & Zhihao Wang, 2019). Hence, the authors propose that:

H6: Knowledge has a positive influence on the WTP for *halal* transportation.

2.9 Mediation and moderation effects

Mediation and moderation effects have always been at the heart of social science research, especially in marketing studies. The complexity of human behaviours requires a complex model to analyse and enhance the predictive power of the research model. Due to its sequential process, the ABC model treats the attitude and variable in between contextual and behavioral as a mediator,(Goh & Balaji, 2016; Guagnano et al., 1995). Thus, the authors identify four hypotheses for the study, which are:

H7: Awareness mediates the relationship between religiosity and attitude.
H8: Awareness mediates the relationship between religiosity and the WTP.
H9: Attitude mediates the relationship between religiosity and the WTP.
H10: Awareness and attitude mediate the relationship between religiosity and the WTP.

Previous studies demonstrated the positive relationship between knowledge and the WTP, however, according to Kiatkawsin and Han (2019) as well as Tong, Anders, Zhang, and Zhang (2020) there is no relationship between knowledge and the WTP. The inconsistent literature on knowledge and the WTP is a valid reason to introduce the moderator in the study (Baron & Kenny, 1986). For Muslims, Islam is not only a religion, it is also a way of life. Higher submission to Allah means higher religiosity. Since, Muslims are required to only consume *halal* products, higher religiosity will lead them to consume *halal* products which results in their willingness to pay more for *halal* transportation services. Thus, the authors propose the following hypothesis for the moderation analysis:

H11: The positive relationship between knowledge and the WTP will be stronger with higher levels of religiosity.

2.10 Control variable

Control variable should be included in the research framework in order to avoid spurious or artificial relationships between criterion and predictor variables (Bernerth & Aguinis, 2016). Yen (2018) suggested including age, education and income as control variables, the same was done in the present study. In Figure 1, the research framework illustrates the criterion, predictor and control variables of the study.
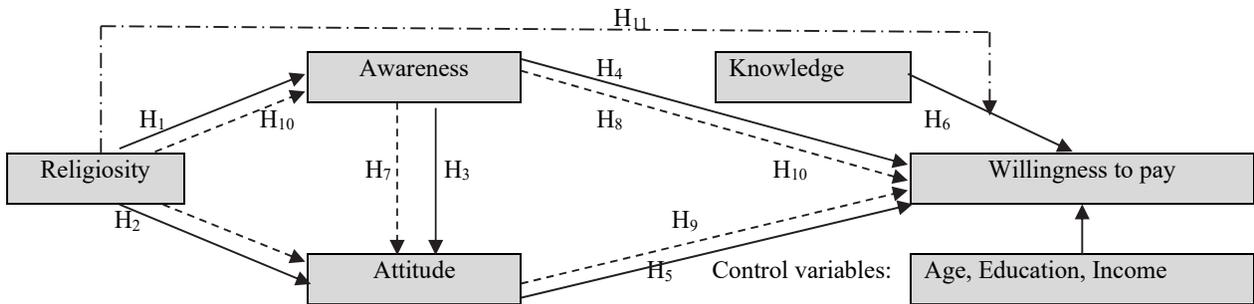

Fig. 1. Research model

3. Methodology

3.1 Measurement properties

All items in the study were adopted and adapted from seminal papers in the area of study. Items measuring attitude were adopted from Venkatesh, Brown, and Hoehle (2012), religiosity and knowledge from Abd Rahman et al. (2015), awareness from Abdul Hafaz Ngah et al. (2015) and WTP from Fathi et al. (2016). To ensure respondents understood the items as intended, a pre-test was conducted with eight respondents constituted of adults and students at diploma and degree levels. After revising the items, a pilot test with 30 respondents was conducted. All items met the requirements of the pilot test.

3.2. Sampling method and data collection

Due to the unavailability of the sampling frame, a non-probability with purposive sampling method was employed. Moreover, due to the nature of the study to test the theoretical effects of the variables in the research framework, convenience sampling was sufficient as recommended by Hulland, Baumgartner, and Smith (2017). Two inclusion criteria for respondents were introduced. First, they had to be Muslims, and second, they had to be at least 18 years old to be considered mature enough to decide how to spend their money and to understand the *halal* concept. Data was collected on weekdays and weekends at two major shopping malls, one in Putrajaya and one in Kuala Lumpur. These locations were chosen due to their popularity and the huge potential of respondents visiting these malls. Respondents were asked whether they were willing to participate in the study before being given the questionnaire. This was to ensure the willingness and the quality of the data. Out of 250 people who were approached, 200 agreed to respond. Out of 200 respondents, 57% were male and 44% were in the 23-30 age bracket. For 41% of them, a degree was their highest qualification, and 38% of them had a monthly income between RM 1500-3000. Fig. 2 illustrates the respondents' profile.
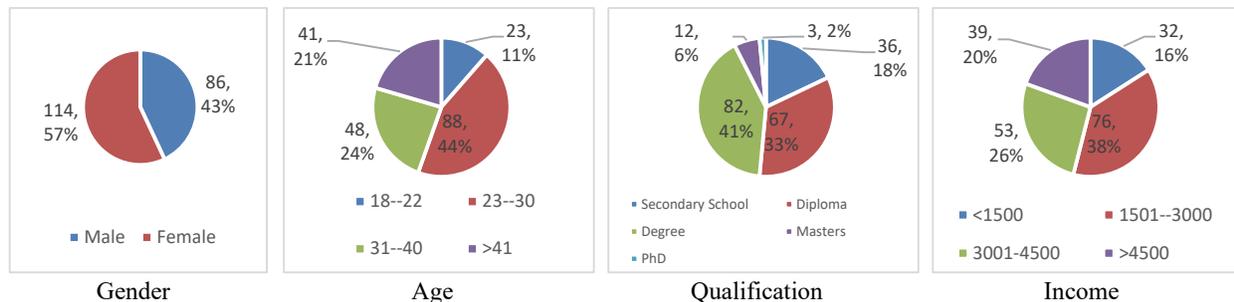

Fig. 2. Respondents' profile

4. Analysis and finding

The authors used software to facilitate data analysis. Firstly, G-power was used to determine the minimum sample size of the study. For descriptive and common method variance issue, the authors employed the Statistical Programme for Social Science (SPSS). To test the measurement and structural model of the study, Smart Partial Least Squares (PLS) was selected due to its alignment with the purpose of the study. Using Smart PLS is validated by the predictive nature of the study (Joseph F. Hair et al., 2019; Ngah, Rahimi, & Norzalita, 2018). Also, the predictive nature of the study called for structural equation modelling (SEM) with Smart PLS to be applied. Finally, WebPower analysis also addressed Mardia's multivariate skewness (β = 18.609, p< 0.01) and Mardia's multivariate kurtosis (β = 74.461, p < 0.01) confirming that the data was slightly abnormal and thus endorsing the suitability of using Smart PLS for this study. Before continuing to the analysis of the model, it is necessary to address the use of a single source data in the study. Based on MacKenzie and Podsakoff's (2012) work, the study could have suffered a common method variance issue. Thus, the authors applied procedural and statistical methods to ensure that the CMV was not a serious matter in this study. For the procedural method, the authors used different anchor scales to measure the exogenous and endogenous variables of the study. Exogenous variables were measured using a 5-point Likert scale, and endogenous variables were measured with a 7-point Likert scale. For the statistical approach, the authors applied the full collinearity analysis. According to Kock (2015), when using the full collinearity analysis, a value for variance inflated factor (VIF) higher than 3.3 indicates that the study suffers from the common method variance issue. Fortunately, at the factor level model estimation, all VIF values were lower than 3.3, indicating that the study was free from the common method variance issue.

Table 1
Full Collinearity Testing

Attitude	Awareness	Knowledge	Religiosity	Willingness To Pay
2.259	1.578	2.481	2.388	1.694

The authors needed to establish the measurement model before submitting to the structural model. The measurement model was established by confirming the convergent and discriminant validities. Convergent validity must be established to ensure the multiple items are measuring the same constructs (Abdul Hafaz Ngah et al., 2014b) Convergent validities are established if the loading and average variance explain (AVE) values are higher than 0.5, and the composite reliability value is higher than 0.7 (Hair, Hollingsworth, Randolph, & Chong, 2017). As shown in Table 2 of the measurement model analysis, all loading, AVE and CR values met the threshold values, hence confirming that the measurement model for the study could be confirmed.

Table 2
Measurement Model

Item	Loading	CR	AVE
att1	0.920	0.946	0.815
att2	0.889		
att3	0.912		
att4	0.890		
aws1	0.865	0.843	0.647
aws2	0.884		
aws3	0.641		
knw1	0.834	0.878	0.592
knw2	0.806		
knw3	0.631		
knw4	0.739		
knw5	0.819		
rel1	0.771	0.860	0.552
rel2	0.660		
rel3	0.834		
rel4	0.733		
rel5	0.706		
wtp1	0.912	0.946	0.853
wtp2	0.944		
wtp3	0.915		

According to Franke and Sarstedt (2018), the heterotrait-monotrait (HTMT) ratio is a better method to confirm the discriminant validity of a study if it made use of Smart PLS. According to Franke and Sarstedt, the HTMT ratio is confirmed if the values of all variables in the study are < 0.85. Since all the HTMT values were lower than 0.85, it was an indication that the discriminant validity was established for the study. Table 3 illustrates the results for the HTMT ratio analysis.

Table 3
Discriminant Validity (HTMT Ratio)

	Att	Awareness	Knowledge	Religiosity	WTP
Att					
Awareness	0.487				
Knowledge	0.374	0.292			
Religiosity	0.447	0.483	0.286		
WTP	0.557	0.263	0.365	0.355	

Prior to addressing the structural model, it was necessary to confirm that the model did not face a multi collinearity issue. Based on Diamantopoulos and Siguaw (2006), the VIF values of the model must be lower than 3.3 to ensure that multi collinearity was not a problem for the study. Since the VIF values of the study were lower than 3.3, it was confirmed that multicollinearity was not a serious issue for the study. To test the hypothesis of the study, a bootstrapping technique with a resampling of 5000 was applied as proposed by Hair, Sarstedt, and Ringle (2019).

Based on these specification, the results revealed the following values for the relationship between Religiosity → Awareness ($\beta = 0.366$, P < 0.01); Religiosity → Att, ($\beta = 0.298$, P < 0.01); Awareness → Att, ($\beta = 0.287$, P < 0.01); Att → WTP; ($\beta = 0.463$, P < 0.01), and knowledge → WTP, ($\beta = 0.192$, P < 0.01) supported and significant at P < 0.01. Thus, confirming that H1, H2, H3, H4 and H6 were supported. Moreover, the relationship between Awareness → WTP was the only hypothesis for the direct effect which was unsupported ($\beta = -0.037$, P > 0.05), thus confirming that H5 was unsupported. For the control variables, only income had a positive relationship with WTP, but had no effect size. Age and education had no effect towards WTP for *halal* transportation.

To provide further details on the analysis, the variance explained (R^2) and the effect size (f^2) analysis are also reported. The R^2 values are at 33.9% for the WTP, 23.4% for the attitude and 13.4% for the awareness showing that the attitude, awareness and knowledge explain 33.9% of the WTP. Awareness and religiosity explain 23.4% of the attitude, and religiosity explains 15.2% of the total variance of the awareness variable.

For the effect size, Cohen (1988) suggested that 0.02 is considered as small, 0.15 as medium and 0.35 can be considered as a large effect size. Based on the analysis for the WTP, attitude with a medium effect size had the biggest effect size for the WTP. For the attitude, both religiosity and awareness had a small effect size, but with a value of 0.101, religiosity had a bigger effect size compared to awareness. Additionally, awareness and religiosity had medium effect sizes. Table 4 displays the results for the hypothesis testing, VIF, R^2 ad f^2 of the study.

Table 4
Structural Model for Direct Model

Hypothesis	Relationship	Beta	SE	T-Value	P-Value	LL	UL	VIF	R^2	f^2
H1	Relig → Aware	0.366	0.065	5.600	0.001	0.231	0.455	1.155	0.134	0.155
H2	Relig → Att	0.298	0.074	4.029	0.001	0.165	0.413	1.155	0.234	0.101
H3	Aware → Att	0.287	0.058	4.932	0.001	0.188	0.384	1.000	-	0.093
H4	Att → WTP	0.463	0.097	4.765	0.001	0.283	0.603	1.572	0.339	0.206
H5	Aware → WTP	-0.037	0.069	0.531	0.298	-0.143	0.087	1.387	-	-
H6	Know → WTP	0.192	0.079	2.432	0.008	0.056	0.314	1.305	-	0.043
	Age → WTP	-0.066	0.072	0.917	0.180	-0.185	0.055	1.813	-	-
	Edu → WTP	-0.051	0.063	0.800	0.212	-0.154	0.055	1.274	-	-
	Income → WTP	0.127	0.076	1.667	0.048	0.008	0.252	2.157	-	0.01

Note: A 95% confidence interval with a bootstrapping of 5,000 was used.

Table 5
Prediction Summary

Item	PLS RMSE	LM RMSE	PLS - LM	Q²
att1	0.916	0.87	0.046	0.094
att2	0.869	0.837	0.032	0.078
att3	0.998	0.959	0.039	0.129
att4	0.91	0.897	0.013	0.143
aws1	0.799	0.806	-0.007	0.065
aws2	0.88	0.902	-0.022	0.106
aws3	0.824	0.804	0.02	0.057
wtp1	1.069	1.09	-0.021	0.108
wtp2	1.073	1.082	-0.009	0.073
wtp3	1.182	1.206	-0.024	0.072

Furthermore, (Shmueli et al., 2019) proposed that PLS predicts a holdout sample-based procedure that generates case-level predictions on an item or a construct level using the PLS-Predict with a 10-fold procedure to check for predictive relevance. Shmueli et al. also suggested that if all the item differences (PLS-LM) were lower than LM, then there was a strong predictive power. If all are higher than LM then the predictive relevance is not confirmed, whereas if the majority is lower than LM, then there is a moderate predictive power. If a minority is lower than LM, then there is a low predictive power. As can be seen in Table 5, the results of the analysis are mixed. Based on guidelines by (Shmueli et al., 2019) the authors concluded that for attitude the predictive relevance is not confirmed. Awareness has a moderate predictive power, and the WTP has a strong predictive power.

For the mediation or indirect effect analysis, the authors followed guidelines prepared by Preacher and Hayes (2008) which suggest bootstrapping the indirect effect. Out of four hypotheses, three were found supported. The results revealed that awareness mediates the relationship between Religiosity→ attitude ($\beta = 0.105$, P < 0.01), thus supporting H7, but failed to mediate the relationship between religiosity → WTP ($\beta = -0.013$, P > 0.05), thus H9 was unsupported. Since the direct relationship between awareness and WTP is also unsupported, for the same reason awareness does not have an indirect effect on the WTP. Attitude mediates the relationship between religiosity and the WTP ($\beta = 0.136$, P < 0.05), hence supporting H8. Moreover, the results revealed that awareness and attitude mediate the relationship between religiosity→ WTP ($\beta = 0.049$, P < 0.01), thus supporting H10.

At the same time, religiosity was also found to have a moderation effect on the relationship between knowledge and the WTP ($\beta = 0.142$, P < 0.05). Hence H11 was supported. The results indicate that the positive relationship between knowledge and WTP will be stronger when consumers have higher religious practices. This indicates the importance of religiosity as a factor in boosting the WTP for *halal* transportation among Muslim consumers. Table 6 illustrates the results of the structural model for the mediation and moderation analysis. In Figure 2, the Dawson's Plot shows the moderation effect of religiosity on the

relationship between knowledge and the WTP for *halal* transportation. It clearly demonstrates that with a higher level of religiosity, the positive relationship between knowledge and the WTP will also be stronger.

Table 6

Hypothesis for the mediating and moderating variables

Hypo thesis	Relationship	Beta	SE	T Value	P Value	LL	UL
H7	Relig → Aware → Att	0.105	0.028	3.777	0.001	0.054	0.161
H8	Relig → Aware → WTP	-0.013	0.027	0.498	0.619	-0.070	0.035
H9	Relig → Att → WTP	0.136	0.055	2.498	0.013	0.047	0.271
H10	Relig → Aware → Att → WTP	0.049	0.017	2.923	0.004	0.024	0.087
H11	Know×Relig → WTP	0.142	0.084	1.690	0.046	0.007	0.279

Note: A 95% confidence interval with a bootstrapping of 5,000 was used.
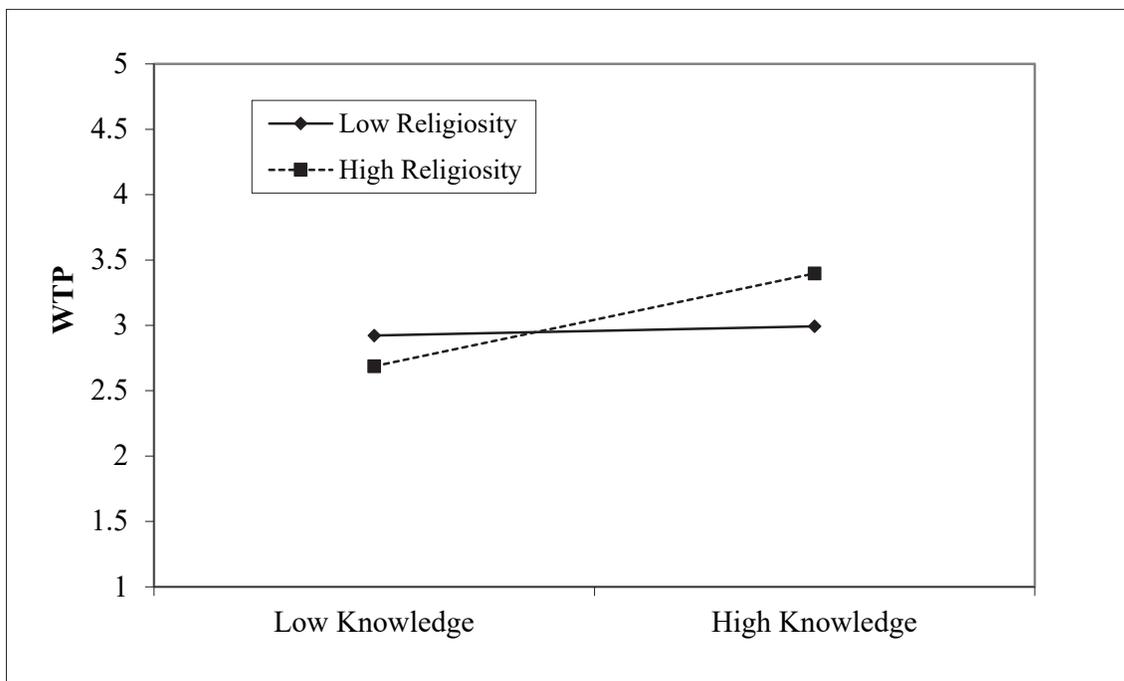

Fig. 2. Dawson's Plot

5. Findings and discussion

Out of six hypotheses from the direct effect, five hypotheses were supported. Religiosity was found to have a positive relationship with awareness. It shows that higher religiosity will result in a higher level of awareness. This finding is supported by a previous studies by Ramadania, Oktaviana Putri, and Juniwati (2018). Hence, the study strengthens previous findings while confirming that religiosity will enhance the awareness of *halal* transportation services among Muslims in Malaysia. So, in order to increase awareness among Muslims consumers in Malaysia, the religiosity factor should be considered as a major factor. Furthermore, the medium effect size of religiosity towards awareness shows the strength of the relationship between them.

The study also found that religiosity has a positive relationship with attitude. The result is similar to previous findings from Abd Rahman et al. (2015) and Garg and Joshi (2018) who found that religiosity had a positive influence on attitude towards *halal* products or services. Awareness also was found to have a positive influence towards attitude, hence confirming findings from Foroudi (2019) and Xu et al. (2020).

In order to create a positive attitude, religiosity and awareness should be intensified. It could be executed either formally or informally. In Malaysia, several religious programmes could be followed by Muslims either in mosques or online. Applying a relaxed and casual approach to deliver this information, especially by Islamic preachers who spread Islamic teachings on social-media channels, could heighten the level of understanding of Islamic studies. This would result in increasing the religiosity and awareness of Muslims. Religious individuals could be more aware of the products and services that are available in the market.

The analysis shows that attitude and awareness have a positive influence towards the WTP for *halal* transportation. This finding is supported by past studies (Xu, Wang, & Yu, 2020; Senapati, 2020). It demonstrates that Muslim consumers are more willing to pay if they have a positive attitude towards *halal* transportation. Hence, there is no doubt when claiming that awareness and attitude are vital variables enhancing the WTP. Having a favourable attitude and awareness of the availability of services, and its benefits could increase the consumers' willingness to pay for such products and services. Therefore, in order to boost Muslims' WTP for *halal* transportation, logistic providers need to ensure that Muslims are aware of the availability of these services. Thus, it is only up to logistics providers to accomplish this task. Government agencies such as the Department of Islamic Development Malaysia (JAKIM) and the *halal* Development Corporation (HDC) could also do their part to forge a positive attitude and increase awareness of the services. Increasing awareness and positive attitude among consumers can be achieved at events such as Malaysia International Halal Showcase (MIHAS) and Halal Festival (Halfest) by providing booths for logistic providers and by sharing session with academic on this matter. Furthermore, publications from third parties such as academics and government officers may be viewed as more credible than promotional communications from logistic providers.

Knowledge was found to have a positive influence towards the WTP. This finding is identical to those from Nguyen and Hoang (2017) and Guomin Li et al. (2019). Thus, confirming that a higher level of knowledge will boost the WTP. Discussing knowledge relates to the educational process. For this reason, academic and higher institutions could play their role by educating future consumers on this matter. Informally, researchers and knowledgeable persons could share this information by conducting research, publishing their findings and sharing this knowledge through social media such as YouTube, which are viewed as more interactive, attractive and aligned with current trends.

Surprisingly, the relationship between awareness and the WTP was found to be unsupported. According to Van Loo, Diem, Pieniak, and Verbeke (2013), high awareness levels failed to promote future behaviour. Awareness was also confirmed as not having a significant relationship with willingness to *waqf* (Abd Aziz & Noh, 2019). As a leader in the *halal* industry, *halal* is not a new matter for Muslim consumers in Malaysia. Moreover, Muslims in Malaysia have a strong confidence in *halal* certifications (Abdul Hafaz Ngah et al., 2014c) which results in them accepting such products to be deemed safe for consumption based on this certification. Furthermore, these consumers believe that the cost of *halal* transportation should not be borne by them but instead by the *halal* manufacturers. The study revealed that awareness does not have a positive influence on the WTP for *halal* transportation cost, as consumers are already aware of *halal* transportation and believe that this cost should not be their responsibility.

Regarding the control variables, age and education are not significant factors towards the WTP for *halal* transportation. Meanwhile income was found to have a positive influence on the WTP for *halal* transportation. As mentioned by Cohen (1988), 0.02 is considered a small effect size. Since the relationship between income and WTP is less than the minimum cut-off value for effect size, the authors conclude that income is not an important factor towards the WTP for *halal* transportation.

Results also reveal that three out of four hypotheses for the mediation analysis were supported. The results are consistent with the concept of ABC itself, which considers the attitude as mediators within the model. Awareness mediates the relationship between religiosity and attitude, but not the relationship between religiosity and the WTP. As the direct hypothesis also confirmed that awareness has no relationship with the WTP, hence logically, awareness failed to mediate the relationship between religiosity and the WTP. Attitude mediates the relationship between religiosity and the WTP, and at the same time awareness and attitude mediate the relationship between religiosity and the WTP. This shows the strength of attitude in influencing the WTP for *halal* transportation among Muslim consumers in Malaysia. Logically, once Muslims have a positive attitude, they should be more willing to pay for *halal* transportation. Lastly, for the moderation analysis, the output of the analysis reveals that religiosity strengthens the positive relationship between knowledge and the WTP. It indicates that, with a higher level of submission to Allah, the WTP will be stronger. Thus, it indicates the pertinence of religiosity in enhancing the WTP for *halal* transportation among Muslims in Malaysia.

6. Conclusion

WTP for *halal* transportation is important to be studied to enhance the number of *halal* providers and for the sustainability of the current providers. However, enough information on the WTP among Muslim consumers to encourage more logistics providers to offer the services remains unavailable. Therefore, as Malaysia is known as a leader in this area, this study is beneficial to several parties, such as Malaysia and other Muslim countries which have *halal* transportation providers or *halal* services. In the present study, the authors use the ABC theory with religiosity and awareness as contextual factors and the WTP for the behaviour function. Furthermore, knowledge is included as an additional variable to predict the WTP. As is common practice when using the ABC theory, attitude is treated as a mediator within the research framework. However, the study contributes by adding awareness as a mediator and as a sequential mediator between religiosity and the WTP. To enhance the predictive power of the model, the authors also treated religiosity as a moderating factor in the relationship between knowledge and the WTP. There were six hypotheses from the direct effect, and five hypotheses from the indirect effect including the mediation and moderator hypotheses. From the eleven hypotheses that were tested, only nine were supported. The study highlights the role of religiosity in the ABC model to explain the WTP, as a moderator and emphasises its' role in the mediation analysis.

6.1. Contribution of the study

This study contributes in two ways: first, from a theoretical standpoint, and second, from a managerial perspective. For the theoretical standpoint, besides establishing the relationship between variables in the model, the study enriches the finite literature in *halal* studies and the literature on the ABC theory. Hence, this study should encourage more researchers to apply this model to describe the complexity of consumer behaviour especially in the WTP for a specific product or service.

From the managerial perspective, the results should stimulate decision makers in government agencies and *halal* providers to craft consequential strategies to promote the WTP for *halal* services in general rather than focus only on *halal* transportation. Logistics providers could use the findings of this study to create purposeful marketing strategies to amplify the WTP among their potential customers. Since the study revealed the dominant role of religiosity in the WTP for *halal* transportation, Islamic preachers and *halal* related government agencies, such as JAKIM and the Halal Development Corporation (HDC), could develop meaningful approaches to promote the WTP for *halal* transportation among Muslim consumers. Moreover, to ensure that Muslim customers consume pure *halal* products, the responsibilities should not only be with agencies, but with the consumers' themselves. There should be a balanced effort between consumers, government agencies and *halal* providers to create a better world within a sustainable environment.

6.2. Limitation and future studies

The study was limited by the respondents who attended both malls at the time of data collection. Hence, future studies could select samples from other areas and include other method of data collection, such as online surveys. This approach could reach a wider population with limited time and cost. On the other hand, some of the variables could be measured as a higher order constructs (religiosity and attitude), however, to reduce the model complexity, all the variables were measured as a lower order construct. Conjointly, future studies could use different mediator or moderator variables to investigate the *halal* field of research. Price fairness could be tested as a moderator for future studies in the WTP either in *halal* or other areas which are related to the WTP from the consumers' perspective.

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