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The role of trust and perceived risk on Muslim behavior in buying halal-certified food

Role of trust
and perceived
risk

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Abstract

Purpose – The purpose of this study to examine the factors that encourage/inhibit Muslim behavior in buying halal-certified food (HCF), based on two theories, the knowledge-attitude-behavior model and the attitude-behavior-context model; and study the impact of trust and perceived risk on Muslim behavior in buying HCF, and their role in moderating the relationship between halal awareness and religious commitment with Muslim behavior in buying HCF.

Design/methodology/approach – The research population target is Muslims aged 18 years or older who reside in Greater Jakarta and have purchased certified halal food at least once in the past month. The survey method is a self-administered survey using a purposive sampling technique. The online survey has been successful in getting 283 Muslim respondents. In analyzing the causal relationship and hypothesis testing, this research uses the partial least square – structural equation model.

Findings – This study reveals several results: attitude, halal awareness, religious commitment, trust and perceived risk have a significant influence on the frequency of Muslims buying HCF. Attitude mediates the impact of halal awareness, religious commitment and trust on the frequency of Muslims buying HCF; perceived risk and trust moderate the relationship between religious commitment and the frequency of Muslims buying HCF.

Originality/value – Research on halal food is still limited, including in Indonesia. Meanwhile, the study explores the actual behavior of consumers, particularly in a certified halal food context, which is still rare in the existing literature. At the same time, the intention-behavior gap can lead to wrong decisions. Furthermore, this study also studies how Muslims feel when they consume foods that are not certified as halal. Research like this has an immense opportunity to be developed because not many have been developed.

Keywords Halal-certified food, Muslim consumers' behavior, Attitude, Trust, Perceived risk, Religious commitment

Paper type Research paper



1. Introduction

DinarStandard (2021) estimates that despite the COVID-19 crisis, Muslim spending on food decreased by 0.2%; however, it is anticipated to rebound in the coming years, reaching \$1.38tn

in 2024. According to Islamic teachings, all Muslims are obligated to consume halal (Usman *et al.*, 2020). Halal constitutes a fundamental aspect of the belief system and moral code in Islam, representing a significant element within Muslim society (Wilson and Liu, 2010). Consequently, the production of halal food is essential to meet market demand. In Islam, halal signifies that items are permissible and lawful for Muslims (Wilson, 2014; Wilson and Liu, 2010). Within the product context, halal is generally defined as goods that do not contain pork, alcohol, blood or additives of animal origins. Additionally, in the production process, these goods must be free from substances deemed impure under Islamic law (Baran, 2021). The scope of halalness encompasses various aspects, including ingredients, preparation processes, butchering, sanitation, administration and other related managerial practices (Aziz and Chok, 2013), as well as transportation, distribution and the origin of raw materials (Latif *et al.*, 2014; Handayani *et al.*, 2021). Naeem *et al.* (2019) asserted that the quality of halal food depends on both the producer and the quality of suppliers. Therefore, during the certification process, examinations encompass the production process, food hygiene, quality assurance, origin of raw materials, methods of obtaining them and raw material handling. Iranmanesh *et al.* (2020) highlighted that individuals face challenges in verifying the halalness of products during purchase or after use. Consequently, Muslims seek halal certification as it assures them that the product's composition, production and operational processes align with Islamic *Shariah* laws (Usman *et al.*, 2020).

The number of studies on halal is notably limited (Baran, 2021), and it can be characterized as scarce, particularly before 2008 (Mostafa, 2020). According to data from Baran (2021), these studies were conducted in only a few countries, with Malaysia leading in the number of conducted studies. In contrast, Indonesia, despite having the world's largest Muslim population, can be observed to have a significantly smaller number of studies compared to Malaysia. Moreover, the majority of studies concerning consumer behavior predominantly focus on understanding purchase intentions, which may not necessarily translate into actual consumption due to various factors. Sheeran (2002) revealed that while intention significantly influences behavior, it has a relatively low coefficient of determination, averaging 0.28. Meta-analysis supports the notion that individuals do not always act following their intentions (Sheeran and Webb, 2016). This intention-behavior gap can introduce biases in decision-making. Therefore, there is a compelling need for additional research to offer more precise insights into consumer behavior, particularly regarding the purchase of halal food.

The food available for Muslim consumption is typically categorized into halal-certified food (HCF) and conventional food. However, the availability of HCF in the market remains limited. For instance, in 2019, only about 10% of the total products in circulation in Indonesia were halal-certified, amounting to approximately 275 thousand products (LPPOM-MUI, 2020). When Muslims consume items they believe to be halal, there is inherent uncertainty and risk because there is no guarantee that the food is genuinely halal, thereby risking committing a sin. This situation parallels the challenges faced by consumers when establishing relationships with vendors or retailers in online shopping. Several previous studies, such as those conducted by Bianchi and Andrews (2012), have highlighted the pivotal roles of trust and perceived risk (PR) in consumer behavior. Drawing on this literature, we use the concepts of trust and PR to understand how Muslim consumers approach the purchase of food without halal certification. This serves as both a barrier and an incentive for Muslims to opt for certified halal food. Notably, there is a gap in the existing literature concerning research on how Muslims perceive food without a halal certificate, specifically in terms of trust and PR, within the domain of HCF.

This study aims to explore the factors influencing Muslim behavior in purchasing HCF, contributing to the enhancement of the marketing literature on halal food and providing insights into the actual behavior of Muslim consumers. The research is grounded in two established theories: the knowledge-attitude-behavior (KAB) model and the attitude-behavior-context (ABC) model. Furthermore, the research investigates the impact of trust and PR on Muslim behavior when buying certified halal food. Additionally, it examines their role in moderating the relationship between halal awareness and religious commitment (RC) with Muslim behavior in purchasing HCF. The proposed research model is anticipated to contribute valuable insights to the relatively limited research on halal food.

2. Theoretical framework

2.1 *Halal-certified food*

“Halal” is a term used to designate anything known as permissible and lawful according to the Islamic religion (Asnawi *et al.*, 2018). To know what products are permissible to eat and drink, Muslims pay special attention to the halal status of food and drinks (Wahab and Kamarubahrin, 2019). Halal status of food is obtained from authorized institutions (such as the Indonesian Ulama Council in Indonesia) after carrying out a series of inspections and assessments based on established rules and regulations.

2.2 *The knowledge-attitude-behavior*

KAB model (Kallgren and Wood, 1986) suggested that attitudes toward a behavior are determined by a set of knowledge possessed by consumers. In research on certified halal food, knowledge has been widely used as a causative factor (such as Maichum *et al.*, 2017). However, the researcher does not explicitly state the use of the KAB model. It is possible because the researcher generally does not study the relationship between attitude and actual behavior but the intention to behave only. In the halal context, awareness is defined as a process of providing information to increase the level of consciousness about what is allowed to eat, drink and use (Ambali and Bakar, 2014). Halal awareness (HA) is a Muslim’s mindful state with sufficient information on halal (Ahmad *et al.*, 2013). From these two definitions, it can be said that there is a similarity between the concepts of knowledge and awareness. Yadav and Pathak (2017) describe knowledge as the amount of awareness, hence encouraging them to act based on the literature, this study develops the KAB model into awareness-attitude-behavior (AAB) model.

2.3 *Attitude-behavior-context theory*

Guagnano *et al.* (1995) proposed the ABC theory, which states that consumer behavior is an outcome related to attitudes and contextual factors. Wilson and Liu (2011) revealed that certified halal food is an effort to prevent Muslims from consuming food outside of Islamic principles, and it avoids the risk of committing sins. Considering the limited amount of circulating certified halal foods in the market, Muslims face uncertainty and risk when buying food that is not certified as halal from the perspective of religious belief.

The willingness of customers to establish transactional relationships with vendors in uncertain and risky situations is based on trust (Mulia *et al.*, 2020). Trust is the heart of a relationship (Morgan and Hunt, 1994), and a key factor in consumer behavior (Usman *et al.*, 2017). On the other hand, when a person faces uncertainty, PR begins (Lu *et al.*, 2005), giving rise to consumers’ perceptions of the negative consequences of consuming a particular product category (Dowling and Staelin, 1994). Cunningham *et al.* (2005) revealed that various studies found a relationship between PR with the customers’ purchase intention. Based on the literature above, the present study uses trust and PR as contextual factors.

Halal is based on religious teachings. Thus, it is reasonable for researchers to use religiosity as one of the key variables that might explain why consumers choose certified halal food. Religiosity has been suggested to be strongly associated with specific aspects of consumer behavior (McDaniel and Burnett, 1990), and various studies agree that religiosity influences Muslim consumer behavior (Iranmanesh *et al.*, 2020).

3. Hypotheses development and research model

Based on the above theory, our research model proposes the attitude toward the purchase of halal food, halal awareness, religiosity, trust in nonhalal certified food providers and the PR of buying nonhalal certified food as explanatory factors of the purchasing behavior of certified halal food. This study also examines the mediating effect of attitude and the moderating effect of trust and PR.

3.1 Attitude and buying behavior for certified halal food

Attitude is defined as overall evaluations of the behavior of the individual (Fishbein and Ajzen, 1975). The assessment results of a specific behavior can be positive or negative (Tucker *et al.*, 2020). Attitude is one of the most robust precursors for intentions to purchase (Zhang *et al.*, 2018) and can strongly affect actual consumption or buying behavior (Persaud and Schillo, 2017). In halal products, research on actual behavior found a critical role of attitude as a determinant of behavior in Bangladesh (Ashraf, 2019) and India (Tuhin *et al.*, 2020). We propose a hypothesis based on the explained theory and previous studies as follows:

H1. Attitude has a significant impact on the behavior of buying certified halal food.

3.2 Halal awareness

A person who has halal awareness, in general, tends to check the halalness of a product and has sufficient knowledge to make the right decision before buying a product (Awan *et al.*, 2015). Unfortunately, previous research only discusses the relationship between halal awareness and intention to behave (Muslichah *et al.*, 2020). Given that in TRA and TPB, the intention is a predictor of behavior. It is expected that halal awareness can also be a predictor of actual behavior. Meanwhile, KAB and ABC describe the vital role of attitude in predicting actual behavior. Extensive scientific reviews have revealed the motivation for purchase intentions related to the consumption of HCF from various perspectives such as awareness, knowledge and perception (Fadlullah *et al.*, 2021). Vanany *et al.* (2020) found a significant effect of halal awareness on the intention to buy or consume halal products. The authors argue that attitude can mediate the relationship between halal awareness and Muslim behavior in buying certified halal food. We propose the research hypothesis based on the literature and previous explanation as:

H2. Halal awareness significantly influences the behavior of buying certified halal food.

H3. The impact of halal awareness on the behavior of buying certified halal food is mediated by the attitude of Muslim consumers.

3.3 Religious commitment

The religious orientation scale (ROS), developed by Allport and Ross (1967), divides religiosity into two aspects, namely: intrinsic religiosity, an RC that shows the ultimate

purpose in his lifetime, and extrinsic religiosity, where religion is an instrument to accomplish self-centered purposes. Based on the concept of ROS, intrinsic religiosity is seen as an RC (Iranmanesh *et al.*, 2020). In general, researchers agree that the behavior of Muslim consumers can be explained by RC on halal product terms (Iranmanesh *et al.*, 2020). Meanwhile, Fuseini *et al.* (2020), in their research on Muslim travelers in the UK, revealed that the attitude of Muslim tourists toward halal consumption is highly dependent on the level of religiosity. A person's commitment to religious teachings is indicated by individual attitudes and behavior (Johnson *et al.*, 2001). Religion impacts consumers' likes and dislikes and is reflected in individuals' attitudes (Briliana and Mursito, 2017). Ahmadova and Aliyev (2021), in their research in Azerbaijan, found a significant impact of religiosity level on consumer's attitudes toward halal products. Tuhin *et al.* (2020) found that consumers' attitude toward halal purchases depends on consumers' religiosity. Also, consumer attitudes and religiosity have a significant impact on halal buying behavior. We suggest the research hypothesis as:

- H4. Religious commitment significantly influences the behavior of buying certified halal food.
- H5. The impact of religious commitment on the behavior of buying certified halal food is mediated by the attitudes of Muslim consumers.

3.4 Trust

Anderson and Narus (1990) described that trust takes place when one party affirms that the other party will take movement. Trust has been studied extensively and diversely in various consumer behavior studies (Irshad *et al.*, 2020). Unfortunately, as far as the researcher is concerned, trust is still limited in research in the context of certified halal food, especially trust for non-HCF providers. Muflih and Juliana (2020) found that trust is an influential factor in the increased shopping behavior of consumers who choose halal-labeled foods. Meanwhile, Vanany *et al.* (2020) revealed that trust affects a Muslim consumer's purchasing intention of halal-labeled food products.

Various studies (e.g. Chong *et al.*, 2018) discovered the effect of trust on purchase intention by using the TRA as a theoretical framework. Therefore, Sayogo (2018) stated that trust could be considered a form of attitude because most individual attitudes toward buying halal food can be viewed from trust. Meanwhile, Nasser *et al.* (2014) revealed that trust is an essential attribute of attitudes that can influence human behavior. Thus, trust in halal food should be expected to affect their attitude toward purchase (Ashraf, 2019). Therefore, we propose the following hypotheses:

- H6. Trust has a negative impact on the behavior of buying certified halal food.
- H7. The impact of trust on the behavior of buying certified halal food is mediated by the attitude of Muslim consumers.

3.5 Perceived risk

PR is subjective in making choice behavior (Bauer, 1960), which begins when a person faces two factors: uncertainty and negative consequences (Lu *et al.*, 2005). In this study, PR can be defined as consumers' perceptions of the negative impacts of aspects of religious belief associated with consuming non-HCF. Various studies have been conducted to study the

effect of PR on consumer behavior. Unfortunately, the literature on the PR in purchasing certified halal food is still not available, especially from the perspective of buying non-HCF.

Soon *et al.* (2017) revealed that many consumers do not trust halal food providers enough, so Muslims feel that shopping for halal food is risky (Maman *et al.*, 2018). PR can negatively influence attitude (Lu *et al.*, 2016), and consumers' attitude positively influences intentions to purchase online (Bianchi and Andrews, 2012). It means that PR impacts consumer behavior directly, but its influence can also be mediated by attitude. Therefore, we propose the following hypotheses in this study:

- H8. Perceived risk has a positive impact on the behavior of buying certified halal food.
- H9. The impact of perceived risk on buying behavior of certified halal food is mediated by the attitude of Muslim consumers.

3.6 Trust and perceived risk as moderating variables

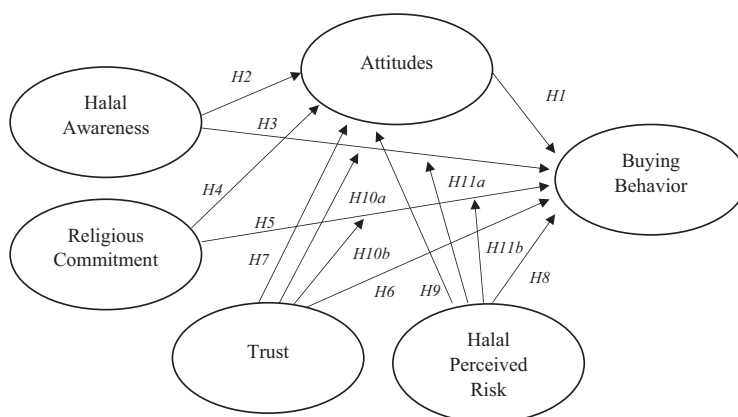
Trust as a moderating variable has been studied extensively to learn more about the relationship between consumer behavior and its antecedents. Sultan *et al.* (2020) used perceived trust as a moderating influence in organic food for consumers' behavior-intention relationship. Tandon *et al.* (2020) used trust to moderate the construct of self-determination theory with buying behavior. Meanwhile, Rehman *et al.* (2019) revealed that trust significantly mediates the relationship between consumer purchase intention and internet shopping behavior in their study in Pakistan. Previous research has shown that halal awareness and religiosity have a positive relationship with the behavior of purchasing certified halal. However, if consumers have high trust in noncertified food providers, consumers tend not to need certified halal food, so the influence on consumer behavior will decrease. We suggest the following research hypotheses:

- H10a. Trust moderates the effect of halal awareness on the behavior of buying certified halal food.
- H10b. Trust moderates the effect of religious commitment on buying behavior of certified halal food.

As with trust, many researchers have considered a PR as a moderating factor. Gurhan-Canli and Batra (2004) revealed that PR is more appropriate to be defined as a moderating variable. In their research in Pakistan, Ahmed *et al.* (2013) found that the PR was validated by a significant negative effect of the interaction between PR and attitude on shopping intention. Meanwhile, Tuu *et al.* (2011) reveal that PR is a barrier to loyalty formation with a negative moderating effect on the satisfaction-loyalty relationship. In this study, when consumers' PR is high for non-HCF, it may encourage the positive impact of halal awareness and religiosity on the behavior of buying certified halal food. We propose the following research hypotheses:

- H11a. Perceived risk moderates the effect of halal awareness on the behavior of buying certified halal food.
- H11b. Perceived risk moderates the influence of religious commitment on the behavior of buying certified halal food.

The research model is in Figure 1.



Source: Authors' own creation

Role of trust
and perceived
risk

Figure 1.
Conceptual
framework

4. Research method

4.1 Data collection

The study's target population is Muslims 18 years or older who reside in Greater Jakarta, which consists of Jakarta (the capital city of Indonesia), Depok, Bogor, Tangerang and Bekasi (regencies/cities directly adjacent to Jakarta known as Jabodetabek) and have purchased certified halal food at least once in the past month. The time limit of the respondent having bought halal food once a month is a subjective consideration of the researcher that the respondent still remembers the type of halal food he has purchased in a sufficient period. BPS Statistics Indonesia (2020) shows that the Jabodetabek area has diverse ethnic and cultural backgrounds. It is home to people from the upper-middle class in Indonesia and has a generally better education than other regions in Indonesia.

In an erratic condition threatened by the COVID-19 crisis, online data collection is preferable. Purposive sampling is applied in this study to ensure that only Muslims 18 years or older who reside in Greater Jakarta and have purchased certified halal food at least once in the past month were surveyed. This method was chosen because it was a viable alternative due to the constraints of time, speed, costs and conveniences, as well as the particular member of the population being chosen, which is unknown (Cooper and Schindler, 2014). Unfortunately, this method has weaknesses, one of which is that the sample may not represent the population (Cozby and Bates, 2015). In selecting samples using this method, the chosen samples may be closely related to researchers, such as family members, relatives or colleagues. In this study, the researcher tried to get respondents who were "slightly" more varied. Therefore, in the sample selection process, this study adopted snowball sampling. Snowball sampling is a sampling procedure where the current sample provides a reference for the following sample (Cooper and Schindler, 2014).

In the first step, we chose 25 respondents with different occupations and education levels and lived across all districts/cities in the Jabodetabek area. The researcher asked them to redistribute the questionnaire to three respondents. Then, the three respondents were asked to circulate the questionnaire, each to three different respondents and continue and so forth. With this method, it is expected that data will be collected from samples with more varied backgrounds.

Respondents who meet the criteria based on filtering about religion, age, residency and had purchased halal food products at least once a month ago, are 317 people. Furthermore, based on an examination of the questionnaire contents, it turns out that only 283

questionnaires were filled out. According to [Comrey and Lee \(1992\)](#), there are different sample size ranges regarding their strength, and a sample size of 201 to 300 is considered good. The characteristics of the respondents in our research are pretty diverse and relatively evenly distributed (see [Table 1](#)).

4.2 Measurement

This study uses valid measurement items used in the previous research collected from many sources (see [Table 2](#)). HA, RC, trust, PR and attitude (ATT) are assessed on a five-point Likert scale. The scale starts with “1” means very strongly disagree until “5” means very strongly agree. Meanwhile, halal purchase behavior (HPB) is measured based on the frequency of purchasing certified halal food, which is then categorized and named as follows: “1 = never,” “2 = rarely (1–2 times),” “3 = quite often (3–4 times),” “4 = often (5–6 times)” and “5 = very often (6 or more times).” A pretest was conducted with 30 respondents according to the sample criteria to ensure that respondents understood the statement items and instructions for filling out the questionnaire. Feedback from the pretest was used as evaluation and improvement material for the questionnaire used in the data collection.

Characteristics	%
<i>Gender</i>	
Male	55.5
Female	44.5
<i>Age</i>	
18–20	2.8
21–25	17.7
26–30	15.9
31–40	28.3
41–50	16.3
51–60	18.4
60+	0.7
<i>Education</i>	
High school and below	34.6
Higher education	65.4
<i>Income (IDR)</i>	
Below two million	7.1
20,000,001–4,000,000	14.1
4,000,001–7,000,000	18.4
7,000,001–10,000,000	23.3
10,000,001–15,000,000	12.0
15,000,001–25,000,000	13.8
Above 25 million	11.3
<i>Residency</i>	
Jakarta	32.9
Bogor	19.1
Depok	23.7
Tanggerang	11.0
Bekasi	13.4

Table 1.
Respondent’s
characteristics

Source: Authors’ own creation

Constructs/ references	Items	Loading	FL	AVE	CR	Cronbach's alpha
Halal awareness (HA) (Usman <i>et al.</i> , 2021; Kumiawati and Savitri, 2020)	HA1	When going to buy food products, my mind focuses on the halalness of the product	0.869287	0.802339	0.953031	0.938479
	HA2	I make a special effort to check the halalness of the food products that I will buy	0.900974			
	HA3	Before buying food, I will make sure the food product is made from halal ingredients	0.894065			
	HA4	I only buy food products that I believe are made from halal ingredients	0.910004			
	HA5	I only buy food products that I believe are handled according to <i>Shariah</i> principles	0.903782			
Religious commitment (RC) (Irfanmanesh <i>et al.</i> , 2020; Usman <i>et al.</i> , 2020)	RC1	My religious beliefs are the cornerstone of my entire approach to life	0.791627	0.652396	0.903658	0.867055
	RC2	I take time to increase my understanding of my faith	0.788588			
	RC3	Religious beliefs affect all my dealings in life	0.814700			
	RC4	Religion is vital to my life	0.837538			
	RC5	I must consume halal food products	0.805127			
Trust (Usman <i>et al.</i> , 2017, 2020; Mulia <i>et al.</i> , 2020)	Trust1	Food product providers must have an outstanding performance in maintaining halal food	0.916410	0.646873	0.900208	0.857784
	Trust2	Food product providers are managed by people who can maintain halal food	0.821298			
	Trust3	Food product providers must fulfill their commitment to providing halal food consistently	0.810158			
	Trust4	Food product providers must fulfill their promise always to provide halal food	0.615601			
	Trust7	Food product providers will not let consumers be harmed by neglecting to maintain halal food	0.827470			
Perceived risk (PR) (Mulia <i>et al.</i> , 2020)	PR1	I am worried that the food products I buy are not halal because they are not halal certified	0.870232	0.774678	0.945008	0.927331
	PR2	I am worried that the food products I buy are not made from halal ingredients because they are not halal certified	0.858572			
	PR3	I am worried that the food products I buy are not handled according to Islamic teachings because they are not halal certified	0.872371			

(continued)

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Table 2.
Evaluation of
measurement model

Table 2.

Constructs/ references	Items	Loading	FL	AVE	CR	Cronbach's alpha
Attitudes (ATT) (Irrammanesh <i>et al.</i> , 2020; Usman <i>et al.</i> , 2020)	PR4	I am worried that the requirements for halal food are not met because it is not halal certified	0.898135			
	PR5	I am worried that the food products I buy are contaminated with haram ingredients because they are not halal certified	0.900701			
	ATT1	Consuming halal-certified food products is important	0.862546	0.755841	0.939233	0.918943
	ATT2	Consuming halal-certified food products is profitable	0.860027			
	ATT3	Consuming halal-certified food products is wise	0.914351			
Halal purchase behavior (HPB) (Tandon <i>et al.</i> , 2020; Usman <i>et al.</i> , 2021)	ATT4	Consuming halal-certified food products is fun	0.890489			
	ATT5	Halal certificate for food products is an excellent thought	0.816436			
	HPB3	The frequency with which I buy ready-to-eat food from a well-known vendor that is halal-certified over the past month	0.840547	0.785368	0.935889	0.907824
	HPB4	The frequency with which I bought halal-certified instant noodles or milk over the past month	0.947270			
	HPB5	The frequency with which I bought snacks produced by a halal-certified factory in the past month	0.909891			
Source: Authors' own creation			0.842456			

4.3 Statistical analysis

This study uses the partial least square – structural equation model (PLS-SEM) to analyze causal relationships and test hypotheses. The researcher uses SmartPLS version 3.0 for data processing. [Hulland \(1999\)](#) explained that the first step before forming the PLS-SEM model is checking the constructs' validity and reliability. After that, we estimate the path between the constructs of the structural model.

5. Result

5.1 Measurement model

We measure the average variance extracted (AVE), outer loading and composite reliability (CR) to confirm the construct validity and reliability. Several statement items (HPB1, HPB2, HPB7, RC6, Trust5 and Trust6) must be reduced because they have a factor loading (FL) of less than 0.5, which does not meet the criteria. [Table 2](#) shows no more FL below 0.5, which means that all statement items are valid ([Hair et al., 2014](#)). [Table 2](#) also indicates that the AVE is larger than 0.5, and the CR is larger than 0.7. Based on [Hair et al. \(2014\)](#), the convergent validity is indicated with the AVE values larger than 0.5 and CR larger than 0.7. Meanwhile, Cronbach's Alpha value of each construct is higher than 0.7, which is considered reliable for each item ([Hair et al., 2014](#)). The Fornell–Larcker criterion is used to evaluate the discriminant validity. The evaluation shows that the AVE's square root from each construct is more than the correlation between the constructs and all others, indicating an acceptable discriminant validity for the constructs.

The empirical analysis indicates that halal awareness, RC, trust and halal PR explain 0.261 (26.1%) variance of attitude. The whole variables explain 0.637 (63.7%) variance of customer buying behavior. [Chin et al. \(2008\)](#) suggested using the Q2 technique of sample reuse to analyze the construct prediction relevance. The result found that the Q-square predictive relevance (Q2) is 0.732. It is labeled as substantial, based on [Chin \(1998\)](#). Thus, we conclude that the model was an acceptable fit with high predictive relevance.

5.2 Test of the structural model

[Table 3](#) shows the significant value of the estimated path coefficient of the direct effect of ATT on HPB with $\beta = 0.198$. It means that the results support the *H1*. These results again show how important attitudes are in shaping behavior as stated ([Tuhin et al., 2020](#); [Ashraf, 2019](#); [Zhang et al., 2018](#); [Persaud and Schillo, 2017](#)). The direct effect of HA on ATT ($\beta = 0.197$) and HPB ($\beta = 0.243$) is also significant. These results indicate that HA has a direct and indirect effect on HPB through ATT. Therefore, it can be stated that the finding support *H2* and *H3*.

Hypothesis	Relationship	Path coefficient	t-value	Decision
<i>H1</i>	ATT → HPB	0.198	4.591	Support
<i>H2</i>	HA → HPB	0.243	5.941	Support
<i>H3</i>	HA → ATT	0.197	3.226	Support
<i>H4</i>	RC → HPB	0.148	3.446	Support
<i>H5</i>	RC → ATT	0.189	3.218	Support
<i>H6</i>	Trust → HPB	−0.170	3.652	Support
<i>H7</i>	Trust → ATT	−0.270	4.752	Support
<i>H8</i>	PR → HPB	0.359	7.120	Support
<i>H9</i>	PR → ATT	0.113	1.720	Not support

Source: Authors' own creation

Table 3.
Results of the
structural model

These results support the arguments built on TRA, TPB, KAB and ABC, as well as research conducted by [Vanany et al. \(2020\)](#) and [Awan et al. \(2015\)](#). RC has a significant impact on HPB ($\beta = 0.148$) and ATT ($\beta = 0.189$). RC also has a direct and indirect influence on HPB through ATT. Thus, it can be stated that the finding supports *H4* and *H5*. These results again strengthen the opinion of several researchers that the behavior of Muslim consumers can be explained by RC on halal products terms (such as [Iranmanesh et al., 2020](#); [Fuseini et al., 2020](#); [Johnson et al., 2001](#)), and consumers' attitude toward halal purchase depends on consumers' religiosity ([Ahmadova and Aliyev, 2021](#)); and [Tuhin et al., 2020](#)). Like the previous two explanatory variables, Trust also has a significant effect on HPB ($\beta = -0.170$) and ATT ($\beta = -0.270$). So, the Trust has a direct or indirect influence on HPB through ATT. It means the finding supports *H6* and *H7*. This result is in line with the findings of [Muflih and Juliana \(2020\)](#) that trust is an influential factor in the increased shopping behavior of consumers who choose halal-labeled foods, and ([Ashraf, 2019](#)) that trust in halal food should be expected to affect their attitude toward purchase. Meanwhile, PR has a significant effect on HPB ($\beta = 0.359$) but has no significant impact on ATT ($\beta = 0.113$). It implies that ATT does not mediate the relationship between PR and HPB, but PR directly influences HPB. Thus, the finding supports *H8* but does not support *H9*. These results do not support ([Lu et al., 2016](#)) that PR can negatively influence attitudes, but support ([Bianchi and Andrews, 2012](#)) that consumers' attitudes positively influence online purchase intentions.

The moderating effect of trust and PR can be seen in [Table 4](#). The estimation results show that Trust ($\beta = -0.024$) and PR ($\beta = 0.025$) do not moderate the relationship between HA and HPB. It means that the finding does not support the hypotheses of *H10a* and *H11a*. After removing the two interaction variables from the research model and processing the data again, it is found that Trust ($\beta = -0.076$) and PR ($\beta = 0.112$) moderate the relationship between RC and HPB, which means the finding supports *H10b* and *H11b*. These results show that although Trust and PR as moderating variables have been studied extensively to learn more about the relationship between consumer behavior and its antecedents, trust and PR do not always significantly mediate the relationship between consumer behavior and its antecedents. Thus, it can be said that this study partially supports the research conducted by [Sultan et al. \(2020\)](#), [Tandon et al. \(2020\)](#), [Rehman et al. \(2019\)](#), [Gurhan-Canli and Batra \(2004\)](#), [Ahmed et al. \(2013\)](#) and [Tuu et al. \(2011\)](#).

6. Discussion

It is not surprising that this study finds a significant effect of ATT on HPB. However, it is quite surprising that the impact of ATT on HPB is lower than that of HA, Trust and PV. [Paul et al. \(2016\)](#) and [Zhou et al. \(2013\)](#) revealed that attitude is the most important predictor of intention and behavior. This statement may be suitable to describe the effect of attitude on intention because it has been supported by many earlier research studies (such as [Vanany et al., 2020](#)). However, this statement is not appropriate to describe the relationship

Table 4.
Results of
moderation analysis

Hypothesis	Relationship	Path coefficient	t-value	Decision
H10a	Trust*HA → HPB	-0.024	0.568	Not support
H10b	Trust*RC → HPB	-0.076	2.108	Support
H11a	PR*HA → HPB	-0.025	0.597	Not support
H11b	PR*RC → HPB	0.112	3.242	Support

Source: Authors' own creation

between attitude and behavior. This condition requires the attention of researchers to continue to explore additional theoretical frameworks and constructs (Tandon *et al.*, 2020) and the factors that drive actual consumption (Shamsi *et al.*, 2020).

This study finds that halal awareness had a significant positive effect on the frequency of buying HCF. This result supports the argument that the knowledge variable in the KAB model can be replaced with awareness. Therefore, it changes to the AAB model. Based on this research, low awareness will undoubtedly cause a low frequency of purchasing certified halal food. Muslims have indecent exposure to halal, therefore, causing low halal awareness among Muslims (Kurniawati and Savitri, 2020). Unfortunately, Muslim halal awareness is still low (Aziz and Chok, 2013). Therefore, to maximize market potential, certified halal food producers must increase consumer awareness. Producers must actively participate in socializing and disseminating information about halal certificates and making it one of the objectives of product marketing campaigns.

Researchers generally agree that the behavior of Muslim consumers can be explained by RC (Iranmanesh *et al.*, 2020). Religious people tend to implement religious rules and practices without question, including consuming halal food. This study reveals the importance of RC in increasing the frequency of consumers buying certified halal food. However, the effect of RC on the frequency of buying certified halal food is lower than other variables. This condition shows that the marketing of halal food cannot rely on the emotional aspect alone, but even more importantly the rational aspect.

Trust has a negative and significant effect on the frequency of buying certified halal food. The higher their trust in conventional (nonhalal-certified) food providers, the lower the frequency of purchasing certified halal food. Trust also has an indirect influence on the behavior of buying halal food through attitude. The finding is consistent with Liu *et al.* (2019), demonstrating that increased trust leads to favorable attitudinal and behavioral outcomes. In doubtful situations, Muslims are willing to be vulnerable and depend on the integrity of food producers or sellers with no halal certificate in the hope of getting a favorable outcome according to their wishes. It is one reason why Muslims appear relatively unresponsive because of the lack of certified halal food, even though they are unable to identify the halalness of the food they buy.

PR only directly influences the frequency of buying certified halal food, and attitude does not mediate this relationship. Even though it only directly affects the frequency of purchasing certified halal food, PR is the variable that has the most significant impact. This study shows that PR has an excellent impetus for Muslims to buy certified halal food. Therefore, it is not surprising that Muslims residing in non-Muslim-majority areas or countries, such as Muslim tourists, will be sensitive to food purchases (Wilson and Liu, 2011; Zailani *et al.*, 2015). The result also indicates that PR affects the frequency of purchasing certified halal food without requiring consumers' particular form of attitude. In other words, PR can cause them to have a high frequency of buying certified halal food, both for those who have positive and negative attitudes. It is possible that PR evokes defensive emotions (Boyatzis and Akriovou, 2006) and motivates various compensatory behaviors to reduce anxiety (Greenberg *et al.*, 1997). It causes products that can reduce consumers' fear and anxiety in demand (Mcdaniel and Zeithaml, 1984).

The study also reveals that Trust moderated the relationship between RC and HPB. For Muslims with high trust, it turns out that the impact of RC on the frequency of buying certified halal food is lower than for Muslims with low trust. In other words, Muslims who have the same level of religiosity have different frequencies of halal food due to varying levels of trust. So even though all researchers agree that religiosity significantly impacts consumer behavior, this study reveals that the relationship depends on trust in conventional

food providers. The results show how vital trust is as a driver and a deterrent in determining consumer behavior. Like trust, PR also moderates RC. For Muslims with a high level of PR, the impact of RC on purchasing certified halal food is higher than those who have a low PR. This result again shows that the relationship between RC and behavior that has been solid turns out to be changed if PR is moderated. Based on these findings, researchers should begin to explore more the role of religiosity on consumer behavior, because the influence of religiosity can be different in different conditions.

7. Conclusion

Our study reveals that the frequency of consumers buying certified halal food is determined by attitudes, halal awareness, religiosity, trust and PR. The research model also finds that attitude mediates the impact of halal awareness, religiosity and trust on the frequency of consumers buying certified halal food. In addition, regarding the path coefficient, it is revealed that the impact of attitude on the frequency of consumers buying certified halal food is lower than halal awareness, trust and PR. Attitude may have a tremendous effect on intention, but not so on behavior. These results require academics and practitioners to carefully translate intentions into actual behavior. As far as possible, researchers are advised to examine consumer behavior, not just intention.

Furthermore, this study finds that trust and PR moderate the relationship between RC and the frequency of consumers buying certified halal food. These results indicate that the influence of RC on the frequency of consumers buying certified halal food depends on the level of trust and PR. This research again reveals the crucial role of trust and PR when consumers are faced with uncertainty and risk.

In addition, producers need to make efforts to increase consumer awareness of halal foods. This also encourages higher trust among Muslims compared to conventional food. It is important to let consumers know that the risk of certified halal food is relatively low or even zero, which is related to religious teachings and the perspective of quality (Bohari *et al.*, 2013). It is also associated with hygiene and sanitation standards (Lada *et al.*, 2009). Finally, producers need to play a role in religious activities or festivals because those with a high religious level tend to have a high frequency of purchasing certified halal food.

8. Implication

8.1 Theoretical implications

This study finds four important theoretical implications. First, The KAB model and ABC theory are suitable for studying consumer behavior in purchasing HCF, and both can be integrated into a model. In addition, contextual factors (trust and PR) can be used as moderating variables. For further research, the model can be applied by changing contextual factors, depending on the context being researched.

Second, this study highlights the importance of studying the actual behavior of consumers, rather than just learning the intention to behave, especially in the context of halal food. Various studies have shown the strong influence of attitude on the intention to behave. However, in this study, attitude has a lower effect on actual behavior than halal awareness, trust and PR. Therefore, researchers and practitioners need to be careful in interpreting the intention to behave, especially when translated into the context of actual behavior. Besides that, it is a task for researchers to multiply research on actual behavior so that the gaps in insight can be bridged, particularly related to certified halal food.

Third, this study finds that attitude did not mediate the relationship between PR and the frequency of buying certified halal food. This condition indicates that PR influences actual behavior without having to form a certain attitude first. Fourth, the trust and PR variables

in this study enrich our understanding of the current psychological situation of Muslim consumers in consuming uncertified halal food, which triggers PR in terms of uncertain consequences (Hasan *et al.*, 2017) and trust in mitigating uneasy feelings (Wang *et al.*, 2015). Therefore, to enrich the insight into consumer behavior in buying certified halal food, next research is needed to explore various variables related to the psychological condition of Muslims when buying non-HCF.

Fifth, this study finds that the effect of RC on the frequency of buying certified halal food depends on trust and PR. Thus, it can be said that this study improves our understanding of the relationship between RC and the behavior of buying HCF.

8.2 Practical implications

This research provides several important managerial implications. First, although attitudes have a relatively low impact compared to other variables, attitude is still an important factor that can encourage Muslims to buy certified halal food. Moreover, attitudes also mediate the influence of religiosity commitment, halal awareness and trust on the frequency of purchasing certified halal food. Therefore, policymakers and marketers must maintain and develop a positive attitude toward certified halal food by conducting market literacy, specifically on evaluation and strict assessment of product halal assurance.

Second, RC has a vital role in the frequency of consumers buying certified halal food. Muslim communities or organizations, such as *taklim* assemblies, recitation groups or Islamic boarding schools and religious leaders, are needed as objects to enrich knowledge and agents to communicate certified halal food products to the public. Furthermore, business corporations may take part in many religious activities, such as: organizing or facilitating religious activities. Producers may benefit from many religious festivals that boost consumers' demands for the production of certified halal food.

Third, companies must inform consumers about their certified halal food, which is associated with halal products and quality (Bohari *et al.*, 2013). Also closely related to hygiene and sanitation standards (Lada *et al.*, 2009). Furthermore, producers may arrange interactive spaces, and support rooms for consumer discussion, given their low knowledge and socialization from industry or government.

Fourth, halal is only guaranteed if the product has been certified halal. It means that when consuming food that is not certified as halal, Muslims are faced with doubts. From a religious perspective, Muslims are obligated to drop any doubtful things (Zailani *et al.*, 2018). It can also be used as a reference by producers to grow consumer attraction for certified halal food.

Fifth, trust in nonhalal certified food providers is challenging for halal food producers in marketing their products. This study reveals that Muslims who have purchased certified halal food have a low purchase frequency if trust in non-HCF providers is high. Based on this condition, there are two things that certified halal food providers can do, namely, build distrust toward non-HCF providers or encourage consumers' trust in certified halal food. The second way is certainly more elegant. If the trust in certified halal food is well established, there is no need to worry about trust in non-HCF. At some point, the two will become different market segments, so the target market will also be different.

8.3 Limitations and future research directions

First, this study measures actual behavior based on the frequency of buying certified halal food during the past month. This measurement cannot cover the quantity, let alone the quality of the purchase. Therefore, future research can use different measurements, for example, the number of halal food products purchased or the money spent on buying

certified halal food. Second, considering that the research was conducted amid the COVID-19 crisis, we rely on cross-sectional survey data collected online. If the pandemic has passed, future research can collect data with a better sampling design or conduct experimental studies to test the framework that has been built.

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