

## EXPLORING THE INFLUENCE OF HALAL CERTIFICATION ON CONSUMER BEHAVIOUR IN THE PHARMACEUTICAL INDUSTRY

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**Abstract:** *There is a growing demand for Halal Pharmaceuticals due to the increase in the Muslim population. They are now more concerned about halal goods and services. According to State of the Global Islamic Economy Report 2022, the 1.9 billion Muslims around the world spent the equivalent of US\$2 trillion in 2021 in the food, pharmaceutical, cosmetics, fashion, travel, and media/recreation sectors, all of which are influenced by ethical purchasing requirements inspired by the Islamic faith. For Muslims, seeking halal goods is necessary to get Allah's blessings. Nonetheless, only a few pharmaceutical products have the certificated halal logo. This study aims to identify the variables of Halal Information, Halal Awareness, and Halal Certification to the intention to consume Halal Pharmaceuticals among older people. One hundred twenty-nine sets of questionnaires were distributed on Google form via WhatsApp. The data were analyzed using correlation and regression analysis. The finding revealed that all variables are positively linked to the Intention of Consuming Halal Pharmaceuticals. Interestingly, for multiple regression, only halal certification influenced the primary variable. The other two independent variables, Halal Information and Halal Awareness did not affect the elderly's intention to consume Halal Pharmaceuticals. This study's implication will help shed light on the understanding of the need of senior citizens. The roles of government and private agencies such as pharmaceutical manufacturers, hospitals, and caretakers of senior citizens should be aware of and provide the proper and halal pharmaceuticals for them. Fulfilling the elderly needs will improve their health, well-being, and quality of life.*

**Keywords:** Intention to Consume Halal Pharmaceuticals, Information; Awareness; Certification; Elderly

## **1. Introduction**

So far, pharmaceutical products have yet to be much debated in the Halal discussion. State of the Global Islamic Economy Report 2022, the 1.9 billion Muslims around the world spent the equivalent of US\$2 trillion in 2021 in the food, pharmaceutical, cosmetics, fashion, travel, and media/recreation sectors, all of which are influenced by ethical purchasing requirements inspired by the Islamic faith (Economy, 2022). Halal meets the halal and tayyib standards provided in the Holy Qur'an regarding products and services. Halal does not just refer to the food industry or the slaughtering process. Halal consumption concerns food, cosmetics, packaging, textiles, finance, tourism, logistics, and various other areas. In addition to food, Islamic customers are increasingly becoming aware of halal pharmaceuticals.

Halal awareness in the pharmaceutical industry is increasing, significantly impacting Malaysia's economic growth. Ramli et al., (2018) stated that the Halal sector is usually associated with many concerns and is a multi-billion dollar global company. This situation has changed as customers have come to recognize the true meaning of halal in all aspects. Latiff et al., (2021) has estimated that the international halal pharmaceutical business will be valued at \$132 billion by 2021. This halal product and service are considered a high development priority area. However, according to medical research, most pharmaceutical products supplied to hospitals and clinics are not halal certified and can be provided by hospitals and clinics. In November 2009, nearly 30% of 100 health products tested at the Pharmaceutical Science Studies Center laboratory at Saints Malaysia University (USM) were due to bovine gelatin in product capsules. When a shocking discovery was revealed (Aziz & Chok, 2013). Meanwhile, Malaysia recently led the labeling of halal-certified pharmaceuticals. The public notice the harmful effects of product development, testing, and manufacturing. All of these can deviate from Halal standards. Because of this uncertainty, the public is beginning to question the origin of their pharmaceuticals. In addition, Halal Warehouse Service was invented by a Malaysian logistics company to protect the quality of Halal-certified products. Nevertheless, Malaysia's Halal warehouse service has been overwhelmingly responsive (Ngah et al., 2019). According to a study by Bukhari et al., (2020), there are significant gaps in consumer awareness, knowledge, and acceptance of halal-certified vaccines. Pharmaceutical companies worldwide are developing and commercializing halal vaccines for the profitable Islamic consumer market. However, little attention has been paid to the socially receptive component of this product. There needs to be more accurate and accurate information available on the market from many sources. For brands looking to enter this market, this has led to discouragement and customer distrust. Before presenting a product to the Islamic consumer market, brands must train the required interest groups. Since there is growing development and concern about halal pharmaceutical products, we aim to identify the influencing factors to the consumption of halal pharmaceutical products among consumers, specifically older people who are 50 years old and above in Malaysia.

## **2. Literature Review**

### **2.1 Intention to Consume**

For healthy ageing and a higher quality of life, the aged must consume pharmaceutical items. Their purpose to utilise these medicinal medicines is substantially influenced by variables like personal health, healthcare provider advice, society standards, and individual values. The management of medications is complicated when there are several chronic illnesses present.

Additionally, important factors include cultural influences and suggestions from healthcare providers. The intention to buy halal pharmaceutical products is favourably influenced by attitude, religiosity, knowledge of halal products, and perceived behavioural control, according to studies on Indonesian Muslims (Kasri et al., 2023). Similar to Indonesia, faith, knowledge, and attitudes all influence customer intention to use halal products for food, cosmetics, and medicine. The research also point out that knowledge of halal pharmaceuticals and halal food consumption are more strongly influenced by religion (Sudarsono & Nugrohowati, 2020). The intention to consume halal pharmaceutical products is positively influenced by attitude (Vanany et al., 2020). Additionally, a Malaysian study (AzilahHusin et al., 2015). finds that while perception and attitude do not significantly affect doctors' awareness of halal medication, belief in halal information does. These findings help healthcare professionals and policymakers ensure appropriate and culturally appropriate medicine usage by offering useful insights into the factors influencing pharmaceutical intake, especially of halal goods, among varied groups.

## 2.2 Halal Information

Whether or not the products are guaranteed halal is crucial in the intention to consume halal pharmaceuticals. Halal information and its business practices are growing with the evident increase in conferences, trade shows, exhibitions, and showcases of Halal products and services through the cross-exchange of knowledge. AzilahHusin et al., (2015) stated that the update is imperative so that consumers can check their Halal status every time the hesitancy of Halal status takes place. Maison et al., (2018) claimed that the halal label itself had limited influence on product perceptions. They also found that positive product perceptions significantly decreased among people high in religion-based purchase behavior in response to exposure to non-Islamic country-of-origin information accompanied by a halal label. They hypothesized that when a clear sign of halalness relating to a particular product is accompanied by an implicit indication of anti-halalness from the non-Islamic country of origin, Muslim consumers who pay attention to the dietary laws of Islam would have negative perceptions of such a product. Religion-based purchase behavior was measured as a moderator variable. Positive product perceptions were measured as a dependent variable.

Maison et al., (2018) concluded that people high in religion-based purchase behavior do not seem to trust halal-labeled food produced in a country other than an Islamic tradition. Rusmita et al., (2020), conducted a similar study qualitatively and discovered that consumers prefer to choose pharmaceuticals with a halal label so that it will also benefit industries that have halal brands. Though, in halal pharmacies, customers still find it hard to apply halal knowledge; even though they understand halal, their attitude does not imply the principle of halal in pharmaceutical products. Information on the label will influence the choices before buying and or consuming the medicine on the customer site.

Interestingly, (Sudarsono & Nugrohowati, 2020), found that knowledge influenced consumer intention to consume halal pharmaceuticals more than cosmetics and food products. This result was evaluated from the data collected from online questionnaires, and the data used for this study was obtained from 684 respondents from 27 provinces in Indonesia. This study indicated that the relationship between religiosity, knowledge, and attitudes positively influenced consumer intention to consume halal food, cosmetics, and pharmaceutical products. The study also found that religiosity influenced consumer intentions to consume halal food more than cosmetics and pharmaceutical products. However, Ahmad Nizaruddin et al., (2018) found that their respondents have a better attitude regarding the halal status of medications; they would have a better perception of the halal status of pharmaceuticals. As for the social

demographics dimension, it was revealed that there was no significant relationship found between age, gender, and level of education with knowledge regarding the halal status of pharmaceuticals. Aziz and Chok, (2013),<sup>1</sup> conducted a Structural equation analysis that indicated that halal awareness, halal certification, marketing promotion, and brand were positively related to consumers' purchase intention. The common characteristics among published studies are new information and proposed practical implications and innovations for future research and actions. A product's label usually provides a lot of helpful information, including the product's brand. The brand could create a significant influence on consumer's intention to purchase. This depends on the quality of the product and its established reputation in the market. Nevertheless, a hidden gap between the halal logo and the brand has led to the illusion of solid brand equity, even though it is not Sharia compliance (Ismail et al., 2016). Based on the above argument, we hypothesize:

**H1: Halal Information affects the Intention to Consume Halal Pharmaceutical Products among the Elderly in Malaysia.**

### **2.3 Halal Awareness**

Awareness is a relative concept. This term of awareness refers to the ability to perceive, feel, or be conscious of events, objects, or patterns, which does not necessarily imply understanding. Several studies probed into halal awareness, to name a few; (Khusairi & Ngadimon, 2020) and (Septiani & Ridlwan, 2019). Golnaz et al., (2010), revealed in their research that a positive attitude determines the awareness of halal principles and halal medicine products. Likewise, Khusairi and Ngadimon (2020), contended a significant difference between the level of awareness towards halal pharmaceuticals among the different ethnicities and religions. A positive yet moderate considerable correlation can be seen between the level of awareness and perception towards halal pharmaceuticals. They summarised that the awareness and perception of the public in Pasir Gudang towards halal pharmaceuticals are relatively good. A better awareness of halal pharmaceuticals is associated with a positive perception. Similarly, Septiani and Ridlwan (2019), postulated that halal certification and awareness also positively influence the intention to purchase halal food products. They further found respondents have confidence in the Indonesia halal certification agency (MUI) in guaranteeing halal products. Halal certification and halal awareness contribute to the customers' decision process in purchasing halal food products in Surabaya, Indonesia. Moreover, fostering halal awareness is essential in influencing Muslim purchasing decisions to choose halal-certified products and how recognizing the characteristics of products that have been certified. Based on the above discussion, we hypothesize:

**H2: Halal Awareness affects the Intention to Consume Halal Pharmaceutical products among the elderly in Malaysia.**

### **2.4 Halal Certification**

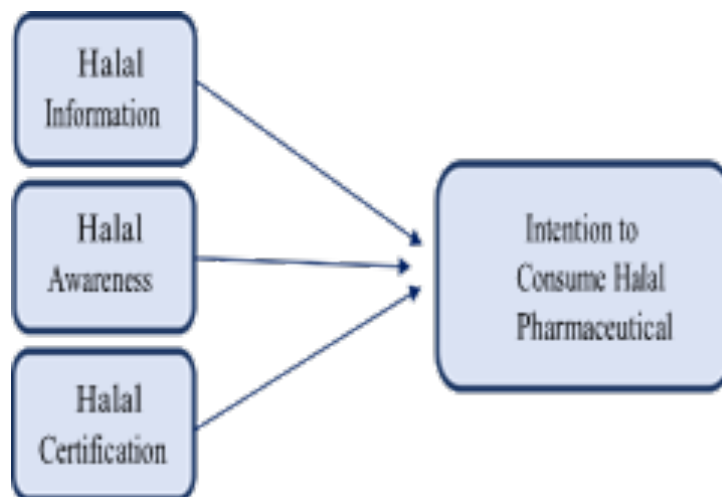
A halal label or certification is an assurance of the halalness of the products. Budiman (2019), concurred that halal awareness affects purchase intention. This factor may become a consideration for the producer to produce their products. He further found that halal awareness, halal certification, and food ingredients affect purchase intention by 28.8%. In comparison, the remaining 71.2% is influenced by other factors that the researcher did not examine. The

result showed that all variables affect the purchase intention of consumers. Likewise, Nur Famiza et al., (2017), studied the factors that caused imperfect knowledge in the buying decisions of Muslim consumers in Putrajaya and revealed that label, awareness, and trustworthiness led to insufficient knowledge in the buying decisions of pharmaceuticals. The researchers also suggest consumers be aware of the risks of buying imported pharmaceutical products since some do not provide sufficient and clear product information. Alzeer and Hadeed, (2020), studied the implementation of the Halal-Tayyib concept in determining Halal status. The process will have to comply with maximum hygiene and minimum contamination, whereas Halal ingredients are used. Qualified scientists with Halal quality assurance experience need to monitor the production process. Further research is required to identify alternative components in compliance with Halal standards. The rational design could replace non-Halal elements with reasonable alternatives, eliminate potential suspicion, and remove uncertain substances. Halal certification remains necessary to ensure quality in processes, ingredients, and Shari'ah compliance. It was found that all the variables influence consumer willingness to pay for halal goods, which further led positively to demand for halal certification and focused on the halal supply chain and its demand among businesses which confirmed that both consumers and manufacturers are willing to pay for halal logistics and explored the determinants of halal-labeled items on which consumer are ready to pay additional amount (Khan et al., 2019). Hence, based on the above discussion, we design a hypothesis:

**H3: Halal Certification affects the Intention to Consume Halal Pharmaceutical Products among the elderly in Malaysia.**

## 2.5 Research Framework

A research framework between the independent and dependent variables is illustrated in Fig. 1.



**Fig. 1: Research framework**

### **3 Methodology**

#### **3.1 Research Design**

Research design is a form of the procedure of information collection and analysis of research. This study focused on the three key variables central to the consumption of pharmaceutical products: Halal Information, Halal Awareness, and Halal Certification among older people in Malaysia. This study used the deductive method, starting with the hypothesis, and the result would be confirmed or rejected. A quantitative research approach was used in this study, which is a descriptive and cross-sectional study. The superior design focuses on collecting information to answer the consumption of Halal Pharmaceutical products. The survey methods aimed to get answers from the respondents and the elderly were distributed among them by online Google form. The quantitative is collected according to the established appropriate research methodology and questionnaires and uses research approaches such as structured observation, online surveys, and questionnaires to get results from respondents. The information is gathered by performing statistical, mathematical, or computational techniques. This approach is the statistical methodology required to analyse the numerical data with the help of applications of SPSS version 24.0. The positivistic researchers' conviction is that the social world comprises concrete and unchangeable reality which can be evaluated impartially. The positive model was predominant in friendly and instructive exploration by giving the significance of utilizing government-sanctioned tests and precise perception, try review information, and measurable examination (Rahman, 2016). Therefore, the quantitative research method is quite powerful.

#### **3.2 Data Collection**

The survey instrument aimed to identify the relationships between Halal Information, Halal Awareness, Halal Certification, and Intention to Consume Halal Pharmaceuticals among the elderly. The group of respondents was selected through random sampling of older people aged 50 years old and above. The data was collected for about two months, from early January 2021 until late February 2021. Since the time is still in lockdown, restricted Movement Control Order, the questionnaires in a Google form have been distributed via WhatsApp and emails to the targeted respondents of older adults all over Malaysia. A total of 129 returned respondents, all questionnaires were found to be usable for the analysis, obtaining a 100% of response rate. The questionnaire consists of six sections. The first section, A, addresses respondent demographics, followed by questions in Section B relating to Halal Pharmaceutical Consumption; the third section, C, is a question about Halal Information, for section D is about Halal Awareness. The fifth section E considered Halal Certification. The respondents of this study were requested to indicate their level of perceptions on a 7-point Likert Scale, ranging from Strongly Disagree (1) to Strongly Agree (7). (Finstad, 2010), stressed that 7-point scale Likert items are more suitable for electronically transmitted and otherwise unsupervised usability questionnaires since they offer a more precise indicator of a participant's accurate evaluation. The set of questionnaires is formulated based on the chosen variables from the previous studies: Halal Pharmaceutical Consumption (Aziz & Chok, 2013), Halal Information (Ismail et al., 2016), Halal Awareness (Golnaz et al., 2010), and Halal Certification (Khan et al., 2019).

### 3.3 Data Analysis and Findings

**Table 1: Demographic Profile (N=129)**

<b>Characteristics</b>	<b>Frequency</b>	<b>%</b>
<i>Gender</i>		
Male	58	45
Female	71	55
<i>Age</i>		
50-55	66	51
56-60	46	36
61 above	17	13
<i>Race</i>		
Malay	75	58
Indian	33	26
Chinese	9	7
Others	14	9
<i>Marital Status</i>		
Single	14	11
Married	102	80
Widowed	10	8
Divorced	3	3
<i>Employment Status</i>		
Employed for wages	53	41
Self-employed	46	36
Home-maker	13	10
Retired	17	13
<i>Academic Qualification</i>		
Certificate ( <i>STPM</i> )	60	46
Diploma	19	15
Bachelor Degree	33	26
Master	9	7
PhD	8	6
<i>State</i>		
Selangor	39	30
Wilayah Persekutuan	11	9
Kedah	5	4
Perlis	5	4
Pulau Pinang	5	4
Perak	11	9
Kelantan	9	7
Terengganu	5	4
Pahang	7	5
Johor	14	11
Melaka	10	8
Sabah	3	2
Serawak	2	1
Negeri Sembilan	3	2

Based on Table 1, the males (45%) are slightly less than the female respondents (55%).

The highest age group is from 50 to 55 years old (51%), showing those who are about to retire, followed by the group category of those from the age 56 to 60 years old (36%), and the rest is from the age of 61 years old and above (13%). For the race group, the Malay (58%) led the way and followed by the Indian (26%) and the Chinese (7%), and the remaining (9%). For marital status, most of the respondents are married (80%), single (15%), widowed (8%), and divorced (3%). The employment status for these elderly respondents majority of them are still working with a steady income (41%), self-employed (36%), retired (13%), and homemaker (10%). The majority of the respondents' qualification is from the STPM certificate (46%), Diploma (15%), Bachelor's degree (33%), and Master's and Ph.D. (13%) group. For the state of the respondents' residents, the least number of the respondents was two, who is Sarawak, while three respondents from each state are from Sabah and Negeri Sembilan. 5 respondents for each state are from Kedah, Perlis, Pulau Pinang, and Terengganu. Seven respondents are from Pahang. Nine respondents are from Kelantan. Ten respondents are from Melaka. 11 respondents for each state are from Wilayah Persekutuan and Perak. Fourteen respondents were from Johor, and the highest respondents were 39 elders from Selangor. Therefore, based on the descriptive analysis, all the respondents seem appropriate to participate in this study.

Table 2 represents the variables of the reliability test conducted throughout Cronbach's Alpha test to test data consistency. The scale of Cronbach's Alpha test should be more than 0.7 as it was standardized initially. The Cronbach's Alpha for the Intention to Consume Halal Pharmaceuticals is 0.963, 0.869 for Halal Information, 0.916 for both Halal Awareness and Halal Certification, confirming that all the variables are reliable.

**Table 2: Reliability Test**

Variables	Cronbach's Alpha	Item
Intention to Consume Halal Pharmaceuticals	.963	5
Halal Information	.869	4
Halal Awareness	.916	5
Halal Certification	.916	5

### 3.4 Regression Analysis

In research, all variables must have a normal distribution. The absolute value of skewness of  $-/+2$  and kurtosis values of  $-/+7$  is used to determine normality, and these values are considered adequate. The skewness and kurtosis values in Table 3 are within the threshold values, indicating that the data is normal.

**Table 3: Normality Test**

Variable	Mean	STD	Skewness	Kurtosis
Intention to Consume Halal Pharmaceuticals	4.9550	1.99221	-.673	-.871
Halal Information	5.0388	1.54220	-1.061	.178
Halal Awareness	5.1891	1.42879	-.976	-.156
Halal Certification	5.0527	1.53837	-.947	-.131



Multicollinearity frequently occurs when there are robust multiple correlations between some or all of the variables. This study employs the Variance Inflation Factors (VIF) analysis to determine the presence of multicollinearity. Multicollinearity can be determined using the tolerance calculation ( $1/R^2$ ), which requires values greater than 0.1, and the Variance Inflation Factor ( $1/\text{Tolerance}$ ) requires values less than 10. If the tolerance value is less than 0.1 and the VIF is greater than 10, multicollinearity has a significant issue, and additional actions must be taken. As shown in Table 4, Halal Information ( $T=0.340$ ,  $VIF=2.945$ ), Halal Awareness ( $T=0.321$ ,  $VIF=3.113$ ), and Halal Certification ( $T=0.346$ ,  $VIF=2.886$ ) all do not exceed the cut-off values, indicating that the values met the cut-off and confirming that there is no issue with multicollinearity.

**Table 4: Multicollinearity Analysis**

Variables	Tolerance	VIF
Halal Information	.340	2.945
Halal Awareness	.321	3.113
Halal Certification	.346	2.886

Next, a linear correlation was tested using the bivariate correlation. It ensures that the correlation between the variables is linear to proceed with further regression analysis. As shown in Table 5, the finding indicates that all the variables tested are linear correlations. The results indicated there were moderate and statistically significant relationships between Halal Information ( $r=.635$ ,  $p<0.01$ ), Halal Awareness ( $r=.663$ ,  $p<0.01$ ), Halal Certification ( $r=.693$ ,  $p<0.01$ ), and Intention to Consume Halal Pharmaceutical among elderly in Malaysia. This study is consistent with the previous studies: (Maison et al., 2018), (Sudarsono & Nugrohowati, 2020), (Ahmad Nizaruddin et al., 2018), (Aziz & Chok, 2013), (Ismail et al., 2016), (Khusairi & Ngadimon, 2020), (Septiani & Ridlwan, 2019), (Golnaz et al., 2010), (Budiman, 2019), (Nur Famiza et al., 2017), (Alzeer & Hadeed, 2020) and (Khan et al., 2019).

**Table 5: Bivariate Correlation**

	Intention to Consume Halal Pharmaceuticals	Halal Information	Halal Awareness	Halal Certificate
Intention to Consume Halal Pharmaceuticals	1			
Halal Information	.635**	1		
Halal Awareness	.663**	.774**	1	
Halal Certification	.693**	.753**	.769**	1

**\*\*.** Correlation is significant at the 0.01 level (2-tailed).

In the final analysis, a standard multiple regression was performed between Halal Information, Halal Awareness, Halal Certification, and Intention to Consume Halal Pharmaceutical as the dependent variable. Table 6 explains the regression analysis of

correlations between the variables. The standardized Regression ( $\beta$ ), R2, and adjusted R2 were discussed. According to the results, the overall model is supported significantly with a high F value of 46.871 ( $p < .010$ ). The Adjusted R square (.518) indicates that the three variables substantially explain the Intention to Consume Halal Pharmaceuticals variance. Among the three relationships tested in the model, the standardized coefficient indicates statistically significant between Halal Information and Intention Intention to Consume Halal Pharmaceuticals. ( $\beta = 0.151, p > .010$ ). Also, there was a statistically significant between Halal Awareness ( $\beta = 0.247, p > .010$ ), Halal Certification ( $\beta = 0.390, p < .010$ ), and the Intention to Consume Halal Pharmaceuticals. Considering the three hypotheses discussed earlier, only hypothesis H3 is supported.

**Table 6: Coefficients in the Regression Analysis**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Beta	Beta		
Constant	-.362	.473		-.764	.000
Halal Information	.194	.136	.151	1.429	.155
Halal Awareness	.344	.151	.247	2.282	.024
Halal Certificate	.505	.135	.390	3.738	.000
R			.728 <sup>a</sup>		
R2			.529		
Adjusted R2			.518		
F			46.871		
Durbin Watson			1.950		

a. Predictors: (Constant), Halal Information, Halal Awareness, Halal Certification

b. Dependent Variable: Intention to Consume Halal Pharmaceuticals

#### 4 Discussion of the Findings

From the findings and summary of the main results, we conclude that several factors contribute to the intention to consume halal pharmaceuticals among the elderly in Malaysia. Based on the findings, the factors are halal information, halal awareness, and halal certification. Interestingly, all the tested variables have a significant relationship with the prime interest of the study, the intention to consume Halal pharmaceuticals. Somehow, for the following analysis of the multiple regression, the results indicated that only Halal certification significantly influences the intention of consuming halal pharmaceuticals among the elderly in Malaysia. The finding of this study is in line with some previous studies like (Economy, 2022), (Budiman, 2019), (Nur Famiza et al., 2017), (Alzeer & Hadeed, 2020) and (Khan et al., 2019). All these researchers emphasized that Halal certification is crucial in determining the intention to consume Halal pharmaceuticals. This study suggests that every pharmacy or business operation must display its halal certificate to attract more customers to buy its pharmaceutical products. These older people would only be confident to purchase their medical supplies if the shop or pharmacy displayed the halal certificate in their products. With experience and wisdom, the elderly are typically very cautious in choosing their needs.

## 5 The Implication of the Research

Theoretically, this study provides a new perspective on the Intention to Consume Halal Pharmaceuticals. It will also be helpful for other researchers who are interested in doing advanced work on a similar topic. Understanding variables such as halal information, halal awareness, and halal certification will help further understand how these variables affect the decision-making of consumers, especially the elderly, who are concerned about the safety and halalness of the products. It is hoped that both academicians and practitioners can benefit from this study; even with awareness of all the issues related to halal pharmaceuticals, the number of consumers of them is rising worldwide. This study will help the original marketers better understand the consumers' needs and wants, which will eventually help them to better strategic their marketing efforts.

## 6 Limitations of the Research

Like any other research, this study has its limitation. The respondents are only from 14 states in Malaysia, and the elderly are literate in WhatsApp messages. The lockdown restriction due to the COVID-19 pandemic has limited the number of the elderly' responses. The findings could have been different if the respondents were from other countries in another part of the globe. Having a distinct targeted group of respondents, e.g., Gen Z or Gen Y, may reveal different discoveries.

## 7 Recommendations for the Future Research

The study suggests future research use a larger sample size with more information about the intention to consume halal pharmaceuticals. Future researchers can explore the different independent variables of the Intention to Consume Halal Pharmaceuticals, religiosity, trust, supply chain, spiritual intelligence, or any critical factors for achieving the sustainable value of halal products.

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