

## **Buying Halal Pharmaceutical Products: Do Consumers Have Imperfect Knowledge?**

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### **ABSTRACT**

In Malaysia, there is a growing demand for halal pharmaceutical products, especially from conscientious Muslims. For Muslims, seeking halal goods is a must in order to get Allah's blessings. Nevertheless, there are only a few pharmaceutical products in the market with the certified halal logo. Thus, for Muslim consumers in Malaysia, their due diligence effort involves looking at the ingredient listed in the packaging. For many consumers, some of this information is far beyond their common knowledge. If this happens, consumers are actually in the position of having imperfect knowledge. This study was therefore conducted to investigate the factors that caused imperfect knowledge in the buying decisions of Muslim consumers. Questionnaires were distributed to 100 Muslim respondents at public clinics in Putrajaya. This study found that label, awareness, and trustworthy led to imperfect knowledge in the buying decisions of pharmaceutical products among Muslim consumers.

*Keywords:* Halal, imperfect knowledge, Muslims, pharmaceutical products

### **INTRODUCTION**

The concept of imperfect knowledge was introduced by Akerlof in 1970 which contradicted with the key assumptions of neo-classical economics. Akerlof won the Nobel Prize through his paper titled "*The Market for Lemons: Quality Uncertainty and the Market Mechanism*". Akerlof's theory explained how the information that buyers received is not always perfect and led to market failure. He illustrated the presence

#### **ARTICLE INFO**

*Article history:*

Received: 1 March 2017

Accepted: 23 November 2017

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of information asymmetry in a used car markets, which only the sellers know whether they hold “Peach” (good product) or “Lemon” (defected product). Commonly, information asymmetries are studied in the context of principal-agent problems that raise the issue of moral hazard and widely applied in economics, insurance and risk management. Nevertheless, information asymmetry also occurs in halal market involving sellers and buyers who have different information about the halal status of the product (Waarden & Dalen, 2010).

In general, halal products refer to products that are permitted under the Islamic law which follow appropriate processes or procedures. In the al-Quran, it is stated “O Mankind, eat from whatever is on earth (that is) lawful and good and do not follow the footsteps of Satan. Indeed, he is to you a clear enemy” (al-Baqarah 2:168). Thus, it is an obligation for Muslims to seek and consume halal goods. A halal product should be halal (in accordance to Shariah principles) throughout its entire production chain, which encompasses the beginning stage of extracting raw materials to the manufacturing equipment, production, marketing, storage, packaging and labelling processes until it meets the end users.

The growth of the halal industry has extended beyond the food sector. Almost 40% of the halal market segment is dominated by pharmaceutical and cosmetic products (Elasrag, 2016). A pharmaceutical product consists of biotechnology products, including medicine and vaccines. The major concern among Muslim consumers

is that commonly, most pharmaceutical product ingredients are sourced from animal derivatives and animal-based gelatines particularly pork, unlawful animals or from animals not slaughtered according to Islamic laws. In the al-Quran, it is also stated that “O you who have believed, eat from the good things which We have provided for you and be grateful to Allah, it is (indeed) Him that you worship” (al-Baqarah 2: 172).

Malaysia plays a leading role as the world’s halal hub. In Malaysia, the Department of Islamic Development Malaysia (JAKIM) is the authority responsible for halal certification. Similar to all other endorsements, it is typically communicated to consumers using the endorsed JAKIM’s logo. In addition to the existence of fake halal logo problem, there is an abundance of pharmaceutical products that do not go through halal certification by JAKIM due to the reluctance manufacturers and producers to follow standard procedures and requirements set up by the accreditation body (Mustafa & Azlin, 2014). Producers usually do not opt not to apply for halal certification since obtaining the certification does not really have a significant impact on their sales. Meanwhile, consumers are not really concerned with the certification since they perceive that the list of ingredients on the packaging is more than sufficient for them to base their decision. Currently, there are limited options available for pharmaceutical companies if buying decisions are made based on the halal logo. Thus, they choose to trust a product based on its reputation and credibility (Asadollah,

Hosseini, & Alireza, 2013; Norazlina, Irini, & Nurazlina, 2012).

Imported pharmaceutical products are the market leaders in Malaysia. Some of them use halal logos from unrecognised and unknown international halal certification bodies. In 2010, the Selangor Islamic Religious Council (MAIS) had identified non-certified halal logos and banned them. However, according to the Federation of Malaysian Consumer Associations (FOMCA), local related authorities as well as the media should also play their proactive roles to inform consumers of products containing non-halal ingredients, especially Muslim consumers (Borneo Post, 2011).

Most of the past studies focused on the attitude and perception towards halal food and products. According to Alba & Hutchison (1987), product evaluations and choice behaviour are based on knowledge dimension which depended on specific situation. For instance, Saleha, Azmi, Imran, Fahad and Muhammad (2013) assessed the level of public knowledge on halal pharmaceuticals and found that there are correlations between knowledge and attitude and perception. On the other hand, this study attempts to examine the factors that led to imperfect knowledge, which is plagued by the problems of information asymmetry between buyers and sellers. Imperfect knowledge is also known as information failure. It occurs when consumers have inaccurate, incomplete, uncertain or misunderstood data and thus, may make a potentially wrong choice.

## LITERATURE REVIEW

### Imperfect Knowledge

Knowledge is a form of personal perception. According to Richardson (1953), knowledge is imperfect when it “is fragmented in that each of us knows only a very small part of all that is to be known, though individual fields of vision may overlap; and it is uncertain in that much of what”. Knowledge among economic agents differs, cannot be shown at the time to be certainly true or false, and would become imperfect when the information had by them is fragmented and uncertain (Richardson, 1953). Knowledge that is built on perception is referred to as experiential knowledge. In France, it is found that consumers’ perception on halal food products which is presented at the point of purchase (POP) influenced their attitude and intention to buy (Teguh, 2013). In this case, producers have more knowledge on the ingredients of their product. Some of them assume that by revealing the ingredient information on the product’s packaging and labelling, they have complied with certain halal standards and requirements. The same goes to the consumers. They believe that the ingredient information given on the product’s packaging and labelling is adequate for them to make a decision. Nevertheless, ingredient information does not guarantee that the product is halal compliant.

### Label

A product’s label usually provides a lot of useful information, including the product’s

brand. Brand could create a significant influence on consumers' intention to purchase. This depends on the quality of the product and its established reputation in the market. Nevertheless, there is a hidden gap between the halal logo and brand that has led to the illusion of strong brand equity, even though it is not Sharia compliance (Wan Rusni, Mohhidin, Russly, Nitty, & Suhaimi, 2016). Asadollah et al. (2013) examined customers' attitude towards products with halal labels who were convinced that improvements in advertising would convey the right information about halal products as well as improve the image and commercialisation aspects of it. Saleha et al. (2013) emphasised the importance of drug companies to clearly mark the packaging with a halal or non-halal logo so that the public can make a choice. The halal certificate on the products' label would certainly help consumers to distinguish between halal and haram products (Hanzaee & Ramezani, 2011).

### **Awareness**

Consumer awareness relates to their perception and cognitive reaction to a product in the market (Ambali & Bakar, 2014). According to Ezanee, Siti Norezam, Noorulsadiqin and Adam (2016), individuals have different levels of awareness based on their background, religion, culture, education, and social interaction. However, consumer awareness on halal principles and products could be improved through a third party such as mass media, forums, and printed media (Pazim, Abd Rahim,

Mahmud, & Lim, 2010). Their roles are crucial to increase the level of awareness among consumers, which would eventually spur growth of the halal industry worldwide. Golnaz, Zainalabidin, Mad Nasir and Eddie Chiew (2008) showed that even the non-Muslims in Malaysia are aware of halal principles in relation to food consumption. Therefore, it would be more feasible for Malaysia to develop into a halal hub country.

### **Access to Product Information**

The ways used to search for the right information vary among individuals. Some might rely on their internal capabilities (memory thinking) and external sources (word of mouth, media, store visit and trial) (Lars, 1999). In terms of availability of products, Vermeir and Verbeke (2006) claimed if the intention or motivation to purchase merchandise is high but there is no accessibility, it will not lead to purchases. In general, Muslims are allowed to consume Haram products in life-threatening situations. Even though currently, halal certification through the halal logo is not widespread in the pharmaceutical market, the demand for pharmaceutical products that adhere to Muslim rules is growing (Walker, Buchta, Reuter, & Gott, 2011). It is important for a halal product to comply with the Sharia requirement, including having clear and relevant information (Talib & Johan, 2012). Developing a halal tracking system which is able to reduce fraud and counterfeit of tags would be helpful for consumers to have right information about products' halal status (Norman, Md Nasir, & Azmi, 2008). The

halal logo serves as important information. However, there are more than 120 active halal certifying bodies worldwide (Demirci, Soon, & Wallace, 2016). This could create confusion among Muslim consumers in buying imported halal products.

### **Education**

Abdul, Syeda and Moeed (2014) found that consumers' level of education and income were the key determinants of consumers' response to product offer. Consumers who had high school degrees were more responsive to product offers. Similarly, a study by Endang (2010) indicated that Muslims in Banten, Indonesia who had higher education were more concerned about consuming halal food. Hasan, Fazullah, Borham, Hashim and Razak (2011) emphasised on the importance of educational institutions to spread halal knowledge and being a medium of transmitting knowledge.

### **Trustworthiness**

Consumers purchase a product due to social pressure, opinion of certain reference groups such as family, friend or following the market trends (Teng, Wan Jamaliah, Siong, & Mesbahi, 2013). Muslim consumers' confidence on halal food product relies on the halal logo, which serves as an important factor that could increase trustworthiness among them (Golnaz et al., 2008). In the context of pharmaceutical products, consumers usually cannot decide on the suitable medicine for them. It is the physician or pharmacist's role to prescribe the best

medicine for a patient without disregarding his or her religious beliefs and requirements of the patient (Saleha et al., 2013). Thus, for Muslim consumers, they rely on physicians' or pharmacists' information about the halal status of their medicines.

### **METHODS**

A cross-sectional study design was adopted using a structured Likert scale. Data was personally collected by researchers through self-administered questionnaires. This method was chosen because it was more feasible to elicit information and data could be collected in a short period of time. As shown in Table 3, the questionnaire items were developed based on the items and variables of previous studies. The questionnaires were distributed to a representative sample at five Putrajaya General Clinics located at Precinct 3, 9, 11, 14 and 18. The clinics in the area of Putrajaya were chosen because Putrajaya has one of the largest Muslim population in Malaysia. This study used a random systematic sampling method based on the patient registering number in the sequence of 10, 20, 30 and so on at each clinic. The final sample consisted of 100 respondents.

A pilot study was conducted on 10% of the total study sample to evaluate the reliability of the questionnaire. A Cronbach's alpha test was conducted to check its validity and internal consistency. A Cronbach's alpha value of,  $\alpha=0.6$  was set as the minimum acceptable value for validity. The value indicates overall index of the repeatability or internal consistency of the scale as a

whole. It also identifies items that should be excluded from the scale. Table 1 shows all the items were reliable and valid.

Table 1  
*Reliability test result*

Variable	Number of items	Cronbach Alpha ( $\alpha$ )
Imperfect Knowledge	5	0.886
Label	5	0.714
Awareness	5	0.762
Access to product information	4	0.745
Trustworthiness	2	0.696

## RESULTS AND DISCUSSION

The demographic questions in this questionnaire are summarised in Table 2. It represents a respondent profile for a sample size of 100 Muslims. The majority of the respondents were female. Most of the respondents were between 21 and 30 years old and almost half of them worked in the government sector.

Table 3 shows the descriptive statistics for each variable and its items. Each item was measured using Likert-scale with the minimum scale set at 1 and the maximum scale at 5 (from strongly disagree=1 to strongly agree=5). For education, the minimum value was 1 and the maximum scale was 3 (high school=1, diploma/degree=2 and masters/PhD=3). It was found that most respondents had high school and diploma/degree level education.

In terms of knowledge, the majority of the respondents understood the halal concept. However, they still purchase pharmaceutical products without the halal

Table 2  
*Respondents' demographics*

Characteristics	Demographic Characteristics	Percentage (%)
Gender	Female	52
	Male	48
Age	Less than 20 years	8
	21 – 30 years	47
	31 – 40 years	19
	41 – 50 years	11
	51 – 60 years	15
Occupation	Student	13
	Government Sector	46
	Private Sector	29
	Self Employed	8
	Others	4

logo. This implied that consumers were irrational in their decision of purchasing. In assessing their feedback on international halal logos, they trusted the halal logos and believed that the imported products are Sharia compliant. However, since there are many halal certifying bodies worldwide, confirming the halal status of a product is not a simple task where consumers can make a decision at that point of time. Moreover, certain countries manipulate halal logo which worsens the situation. In terms of label, the respondents' views on the recognition of JAKIM's halal logo was neutral, which indicated that they were not really sure of right JAKIM logo but still chose products as long as there was a halal logo. Low attention in validating the halal status of the product was also reflected when respondents showed neutrality on checking product ingredients, since they purchase

a product as long as there is a halal logo regardless of whether it was from JAKIM or not. This finding is consistent with Ali (2013), who found that the criteria of accepting halal product were not stringent as consumers deemed any product with a halal logo as halal regardless of whom endorsed the certification.

Respondents also agreed that they are exposed to a variety of international halal logos, and their awareness of it will increase if this is discussed in social media. The respondents agreed there were many pharmaceutical products without the halal logo and the challenges they faced in getting halal pharmaceutical products, even though the number of halal pharmaceutical products is growing. It was also found that trustworthiness is vital in consuming pharmaceutical products. In terms of consuming a product without the halal logo, they claim the product is safe to be used. Trust could be gained based on recommendations by doctors, medical practitioners and friends. There was also the perception that if the product is well known and widely used, there should not be any concerns related to its halal status.

Table 4 shows the Pearson correlation coefficient results. At 5% significance level, even though the  $r$  value shows a weak relationship but label, education and trustworthiness appear to have a significant correlation with imperfect knowledge. The label variable was highly correlated with imperfect knowledge ( $r=0.392$ ,  $p<0.05$ ), followed by trustworthiness ( $r=0.31$ ,  $p<0.05$ ) and education ( $r=0.159$ ,  $p<0.05$ ).

This indicates that the information on label is the most crucial factor in delivering messages to consumers, despite their education and trustworthiness. There is also a relationship between trustworthiness and label at  $r=0.489$ ,  $p<0.05$  and access to product information with label ( $r=0.260$ ,  $p<0.05$ ). Thus, this study conclude that the importance of label is to gain trust; hence, label should represent all the necessary information that indicate the halal status of the product. Access to product information is also linked to awareness ( $r=0.272$ ,  $p<0.05$ ). Thus, it shows that the existence of the product itself will create awareness of the halal pharmaceutical product.

Results from the regression analysis are shown in Table 5. Label and trustworthiness were positively significant in explaining the imperfect knowledge, while awareness was not significant. This result implies that consumers' imperfect knowledge is based on the product's trustworthiness and its label. This finding is consistent with that of by Teng et al. (2013), Ambali and Bakar (2014), Ali (2013), and Marjan, Mostafa and Zohreh (2015), who pointed to the importance of halal label for Muslim consumers to make an informed decision. Trustworthiness rests upon consumers' own perception and recommendations particularly for pharmaceutical product as consumers rely heavily on the advice of their physicians (Saleha et al., 2013). Thus, physicians need to be aware and consider the patients' religious beliefs and practices. In this study, awareness appeared to have negatively influenced imperfect knowledge.

Table 3  
Descriptive analysis

Variable	Items	Mean
Imperfect Knowledge (Source: Ali, 2013; Saleha et al., 2013)	<i>I know what is Halal</i>	3.89
	<i>I am confident that a product with the Halal logo is shariah compliant</i>	3.7
	<i>I am confident with all countries' Halal logos</i>	3.69
	<i>I am confident with a product that contains Halal ingredients</i>	3.7
	<i>Yes, I have purchased pharmaceutical products with no Halal logo</i>	3.89
Label (Source: Ali, 2013; Jamaliah, 2013; Teng et al., 2013)	<i>The Halal logo is the label I check in determining the Halal status</i>	3.42
	<i>I choose products with the Halal logo</i>	3.67
	<i>I can recognise the Halal logo by JAKIM</i>	3.05
	<i>I read the content of a pharmaceutical product before purchasing it</i>	3.05
Awareness (Source: Ali, 2013; Ambali & Bakar, 2014)	<i>I trust the Halal logo from JAKIM</i>	3.55
	<i>Halal logos from other countries make me more curious to check the ingredients</i>	3.58
	<i>I always look for information on Halal products</i>	3.42
	<i>There are a variety of Halal logos for pharmaceutical products</i>	3.24
Access to product information (Source: Asadollah et al., 2013)	<i>There is an increase in pharmaceutical products with the Halal logo in the market.</i>	3.47
	<i>I believe that pharmaceutical products with the Halal logo are easy to find in the market</i>	2.84
	<i>There is an abundance of pharmaceutical products without Halal logos but are safe to be used.</i>	3.4
Education (Source: Abdul et al., 2013)	<i>Level of education</i>	1.77
Trustworthiness (Source: Hussin, Hashim, Yusof, & Alias, 2013; Teng et al., 2013; Saleha et al., 2013)	<i>I purchase the product if it is recommended and the effectiveness is proven</i>	
	<i>The product is Halal if it is well known and widely used.</i>	3.39

Table 4  
Pearson correlation

Variable	Imperfect Knowledge	Label	Awareness	Access to product	Education	Trustworthiness
Imperfect Knowledge						
Label	<b>.392*</b>					
Awareness	-0.09	0.067				
Access to product	0.126	<b>.260*</b>	<b>.272*</b>			
Education	<b>.159*</b>	0.123	0.019	-0.022		
Trustworthiness	<b>.314*</b>	<b>.489*</b>	0.118	0.05	-0.026	

Correlation is significant at 0.05 level (sig. 1-tailed)

This finding is supported by the fact that inadequate information on the label would not be a problem if the consumers have a high level of awareness, which is useful in helping them to make the right choice (Ali, 2013; Ambali & Bakar, 2014).

Table 5  
*Regression results*

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.113	0.794		2.663	0.009	0.537	3.689
Label	0.258	0.109	0.262	2.367	0.02	0.042	0.475
Awareness	-0.284	0.17	-0.16	-1.67	0.098	-0.622	0.054
Access	0.144	0.151	0.094	0.952	0.344	-0.156	0.444
Education	0.236	0.159	0.138	1.481	0.142	-0.08	0.552
Trustworthiness	0.262	0.137	0.204	1.907	0.06	-0.011	0.535

Significant in confidence level at 95% and 90%

## CONCLUSION

This study showed there were three factors that influenced the imperfect knowledge in purchasing pharmaceutical products: label, awareness and trustworthiness. A product's label is the most significant factor. Thus, strengthening law and regulations by banning improperly labelled products is crucial in order to protect Muslim consumer interests. Ambali and Bakar (2014), Hussin et al. (2013) and Othman, Shaarani and Bahron (2016) emphasised on the importance of developing a blueprint of guidelines for ASEAN countries as a halal hub with regard to halal certification. Effective regulations and enforcement would not only curb the availability of non-halal products in the market, but would also improve the production process and quality of the products (Rosita & Ishak, 2012). There are cases where the authorities have difficulties in monitoring the inflow of

imported products due to several constraints such as limited staff and enforcement in training and preparation (Mustafa & Azlin, 2014). Thus, consumers need to be aware of the risks of buying imported pharmaceutical products since some of them do not provide sufficient and clear product information. This is because manufacturers tend to use coding for some ingredients, in which to some extent, could manipulate consumers since not all consumers comprehend the code. In such situations, consumers' trust on certain products would usually influence their knowledge. In this study, level of education was found to be insignificant. It shows that higher education does not guarantee that consumers will have perfect knowledge in their buying decisions. Further research is required to fully understand determinants of imperfect knowledge apart from the factors being observed.

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