

# **FINANCIAL COST AND SOCIAL INFLUENCE: FACTORS AFFECTING THE ADOPTION OF HALAL COSMETICS IN MALAYSIA**

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## **ABSTRACT**

*The demand for Halal cosmetic products has gained substantial momentum in the modern millennium. The tipping points for the rise in demand are increasing Muslim population and consumers' demand for safe, hygienic and friendly to human body cosmetic products. However, the Halal cosmetics industry so far is unable to cater to the needs of its customers due to several factors. This is one of the reasons that Halal cosmetics are not fully penetrated among Malaysian consumers. The current study focusses to analyse the adoption of Halal cosmetics in Malaysia and the factors influence its adoption. The data was collected from 275 cosmetics consumers through a self-administrated questionnaire. The content of the questionnaire was designed using Roger's Diffusion of Innovation theory (DOI). The collected data was analysed using partial leased square analysis. The findings indicate that awareness and understanding level, perceived attributes of innovation and social influence have a significant positive impact whereas, financial cost has a significant negative impact on the adoption of Halal cosmetics. Findings further depict that religiosity mediates the awareness and understanding, perceived attributes of innovation, financial cost and social influence to impact on the adoption. The sample size and adopted framework are not ideal to generalize the findings to the entire population of Halal cosmetics consumers. This study offers various practical and social implications for regulators, manufacturers and users of Halal cosmetics. This study is a potential contribution in the literature through the successful extension of DOI theory to establish the basis to analyse the adoption of Halal cosmetics consumers in Malaysia.*

**Keywords:** Halal Cosmetics, Financial Cost, Diffusion of Innovation, Adoption, Malaysia.

## **INTRODUCTION**

Halal is defined as 'a legitimate or acceptable based on the Islamic core values. Whereas, the antonym Haram refers to 'unacceptable or illegitimate acts by Islam' (Alserhan, 2010; Wilson & Liu, 2010). Quran and Hadith (acts of PBUH) clearly explain the ingredients of Halal and Haram in food, products, finance, investment, pharmaceutical, cosmetics, toiletries and services such as tourism industry and supply chain. Therefore, Muslims are expected to avoid using food, products and services which contain elements of alcohol, riba and animal remains especially in cosmetics. Currently, global muslim are 1.8 billion and it is estimated that by 2030 Muslim will become 27.5 per cent of the global population (Reuters & Dinar Standard, 2018). The global Islamic market expenditure was US\$2.1 trillion in 2017, of which approximately

US\$1.3 trillion was spent on food and beverages, clothing and apparel US\$207 billion, media and entertainment US\$209 billion, pharmaceuticals US\$87 billion and US\$61 billion on cosmetics (Reuters & Dinar Standard, 2018).

Although Halal cosmetics has a substantial market share, yet there exists the scarcity of Halal cosmetics and personal care products. Hence, Muslim consumers are constrained to consume non-Halal cosmetics produced by non-Muslim manufacturers (Abd Rahman, Asrarhaghghi, & Ab Rahman, 2015). According to Mukhtar & Butt (2012), Islamic marketing scholars are widely interested to study cosmetics and personal care products as the majority of Muslim consumers are compelled to consume non-Halal products produced by well-known global brands. Most of these products contain the elements of pork, porcine DNA and proteins, oils, fats, lards, gelatine and other substances which may render a product to be non-Halal (BEDB, 2018). Moreover, the manufacturers of non-Halal cosmetics and personal care products lack religious knowledge which indicates that despite avoiding the contamination of products from non-Halal ingredients, these manufacturers cannot assure the 100% Halalness of their products. In short, it is increasing scepticism among Muslim consumers towards these global cosmetic brands (Mukhtar & Butt, 2012).

Previous studies on Halal products designate interesting facts. First, Halal products' consumers show high loyalty towards Halal brands and these brands are not expected to be affected due to economic crises (Yousef, 2010; Ireland & Rajabzadeh, 2011). Second, the consumer base for Halal products such as cosmetics is not limited to Muslim consumers as Halal cosmetics are perceived organic, safe and clean to use by non-Muslim consumers (Hornby & Yucel, 2009; Alam & Sayuti, 2011b). However, Halal cosmetics industry is facing a pungent task of breaking through the mindsets of the society. Halal cosmetics are misunderstood as being manufactured and offered to Muslim consumers only. Therefore, a large non-Muslim consumer base is not engaged in Halal cosmetics products. Furthermore, ironically Halal cosmetics are also rejected by Muslim consumers due to misperceptions that Halal cosmetics do not provide the same product quality as offered by global brands. Hence, orthodox Muslim and non-Muslim consumers have doubts on cosmetics with Halal logos to provide complete assurance of the Halalness in their products (Aziz & Chok, 2013). Third, most of the recent studies have focused on analysing the factors affecting the consumers' awareness towards Halal cosmetics instead of furnish information on the actual level of awareness and understanding (Rahim, et al., 2015; Ahmad, et al., 2015; Mohezar, et al., 2016).

Based on the proceeding discussion, it is exigent to comprehend the elements leveraging the adoption of Halal cosmetics in order to undertake relevant measures by global Halal cosmetics industry as it will assist in competing against well established non-Halal cosmetics brands. Thus, this study firstly, renders the knowledge on the level of consumer's self-reported understanding of Halal cosmetics. Secondly, it embarks to categorise the factors that influence the adoption of Halal cosmetics in Malaysia. The present study manoeuvres Roger's (2003) Diffusion of Innovation (DOI) theory to analyse the factors impact the adoption of Halal cosmetics. The remaining paper is organised as follows. Review of relevant literature is presented in section 2; third section discusses the methodology; Fourth delineates the findings and fifth concludes this study.

## LITERATURE REVIEW

### Concept of Halal in Cosmetics

Halal is an Arabic word imported from Al-Quran for the usage of Muslims everyday lives. It refers to the consumption of lawful and permissible products in Islam. This concept not only covers foods and beverages but also cover all aspects of life. Recently, it has attracted the significant interest of cosmetics and pharmaceutical manufacturers due to its potential growth indicators such as increasing Muslim population and demand for Halal products. USA Food, Drug and Cosmetic Act (2012), defines cosmetics and personal care as ‘the products used or applied to the human body with the intention to clean, beautify, enhance attractiveness or to alter appearance.’ Cosmetics cover a variety of products such as skin care cream, lotion, powder, shower gels, perfumes, makeup and deodorants. Teng et al. (2013), found that an average person applies approximately 25 cosmetic products every day which proves the importance and demand of cosmetics in people’ daily life. Cosmetics and personal care products are regularly consumed by Muslim consumers like any other consumer as Muslim consumers also seek healthy and good quality life style. However, Muslim consumers are slightly different in their perception towards cosmetics and choice of cosmetics compared to non-Muslim consumers as Muslim consumers prefer to use Shariah compliant cosmetics (Al-Harran & Low, 2008). A few studies have found that religion and level of religiosity prevails among Muslim consumers during the purchase of cosmetics (Rajagopal, 2006: Rahman, et al., 2015: Majid, et al., 2015). Despite increase in demand of Halal cosmetics, the supply and accessibility of these products is an agitating concern for the development of Halal cosmetics industry (Swidi, et al., 2010). One of the reasons for the shortage of Halal cosmetics is the gradual increase in consumers’ knowledge and awareness of non-Halal ingredients such as alcohol, lard, gelatine, swine placenta (known as the darling of facial creams) and collagen (Kamaruzzaman, 2008). Hence, the improved consumers’ knowledge and awareness have made it an uphill task for cosmetic manufacturers to produce 100 per cent Halal products (Pitman, 2007).

### Overview of Halal Cosmetics Industry in Malaysia

In the context of Malaysia, Halal cosmetics have come a long way since its humble beginning nearly four decades ago (Mohezar, et al., 2016). According to Halal Industry Development Corporation (2014), there are 100 Halal certified registered cosmetics and personal care companies in Malaysia whose net worth is US\$800 million with an average growth of 24 per cent out of US\$1.72 billion cosmetics industry. The leading Halal cosmetics producers are Wipro Unza, Southern Lion, Jhonson & Jhonson, SimplisiSiti, Clara International, Eversoft Safi, Silky Girl and Shokubutso (Low, 2017). Malaysian Halal cosmetics is a potential source of support for the national economy by exporting Halal cosmetics to the countries like USA, Middle East, China, ASEAN and Europe. In year 2015, the Malaysian Halal cosmetics export was nearly RM1.7 billion out of overall Halal products’ export (Chochrane and Dinar Standard, 2017). The Halal cosmetics products in Malaysia are administrated under Malaysian Standard MS-2200:2008 and Halal certification Procedure Manual. The Halal certification authority is known as Malaysian Islamic Development Department (JAKIM). The cosmetic manufacturers seeking Halal certification must get a pre-approval from National Pharmaceutical Control Bureau (NPCB) (Hashim & Mat Hashim 2013). The rise in demand for Halal cosmetics has attracted global cosmetics brands such as Procter & Gamble, Unilever, L’Oréal and Colgate-

Palmolive to establish their manufacturing units within local premises which provide ample employment opportunities and drives foreign exchange earnings.

Pertaining to the above interesting facts about the Malaysian Halal cosmetics industry it is timely to analyse the instruments influence the adoption of Halal cosmetics among consumers so that it can positively contribute in developing effective marketing strategies and boosting the overall industry performance.

## **Conceptual Model and Hypotheses Development**

**Awareness and understanding of Halal Cosmetics (AU):** Rogers' (2003) DOI theory was deployed to analyse the factors influence the adoption of Halal cosmetics in Malaysia. According to DOI theory, consumers undergo five stages of the mental process prior to the adoption of products or services. The first stage is a mental process which initiates awareness and then processes it into second, third, fourth and fifth stages known as knowledge, persuasion, decision and confirmation respectively. After the creation of awareness, consumers are required to understand the core attributes and the advantages of the provided products and services.

In the context of Halal cosmetics, Sungkar (2008) found that the concept of Halal in cosmetics is popular in Malaysia compared to the Middle East. About 24 to 30 per cent Muslims believe that Halal should only be applied in the food industry as it is practically impossible to manufacture cosmetics without the addition of non-Halal ingredients (Kamaruzzaman, 2008; Swidi, et al., 2010; Norafni, et al., 2013; Teng & Jamilah, 2013). Even though the global leading brands have started to manufacture Halal cosmetics due to increasing demand yet, consumers are doubtful about the Halalness of their products (Mukhtar & Butt, 2013). Teng & Jamilah (2013), during a study in Malaysia on Halal cosmetics and personal care products concluded that 89 per cent consumers are fully aware of Halal cosmetics about, 11 per cent never heard of Halal cosmetics. Whereas, Jihan & Rosidah (2014): Hashim et al. (2014) reported a very low level of awareness of Halal cosmetics among Malaysians. In terms of Halal cosmetics, similar results were outlined by Ahmad et al. (2015); The majority of Malaysian Muslim consumers are unaware of the Halal logos during the selection of cosmetic products. However, awareness and understanding can be improved by different tools such as religiousness, knowledge, attitude and promotion (Rahim, et al., 2015). Another key method which may enhance consumers' awareness of Halal cosmetics is the role of regulatory authorities. Even though the public is aware of the concept of Halal in cosmetics however, consumers knowledge is very low about the criteria of Halal certified products (Rajagopal, et al., 2011).

The past studies show mix results and highlight the different elements which may influence the awareness and understanding of consumers. Hence, the present research aims to determine awareness and understanding and its impact on adoption through the following hypothesis.

*H1: Awareness and the level of understanding has a significant positive impact on the adoption of Halal cosmetics*

**Perceived attributes of innovation (PAI):** Roger's (2003) DOI theory describes five key characteristics of an innovation known as relative advantage, compatibility, complexity, observability and trialability. The characteristics of an innovation explain 49 to 80 per cent variance rate during innovation adoption which integrates relative advantage, compatibility, complexity and trialability. Relative advantage outlines the perceived preference of innovation over its substitutes. Previous studies associate Halal cosmetics as a clean, safe and of superior quality as its production is carried out under highly hygienic environment using Good Manufacturing Practice (GMP) and Public Health Legislation (Amat, 2006; Hashim & Mat Hashim, 2013). Halal cosmetics are equally appealing to non-Muslim consumers as these products are not experimented on animals, its ingredients are purely organic and do not harm hair, skin and any other part of the human body. The leading brands in Malaysia are also manufacturing Halal cosmetics which may increase cynicism among customers about sheer Halalness of cosmetics (Mukhtar & Butt, 2012). Compatibility describes the fitness of innovation within a culture to initiate the adoption of a product or a service. In the context of Halal cosmetics Khraim (2011), found that Muslim consumers may continue using Halal cosmetic products provided the manufacturer customizes the ingredients, texture and performance of products according to their personal taste and culture. Product characteristics that do not align with Islamic religious values create cultural and ethical dilemmas. The cosmetic and personal care products need to comply with government safety regulations and Halal standards. For instance, conventional cosmetic products often contain, keratin, albumin, placenta which should not be allowed in the manufacturing of Halal cosmetics. These components may have certain religious exceptions however cosmetics contaminated with any non-Halal ingredient may result in lack of customer satisfaction.

Potential adopters undergo complexity process to evaluate innovation, it explains the difficult procedure associated during the adoption of an innovation, mandatory resources, skill and effort. Kaur et al. (2018) found that Halal is not an ultimate priority of Malaysian female consumers while purchasing cosmetics. This might be due to the fact that Halal cosmetic are difficult to find, do not have the same product quality or the absence of the Halal logo on the products. Yeo et al. (2016) study outlines that buying behaviour of Muslim consumers has significantly changed as Muslim consumers these days prefer hygienic, safe and quality products. Due to the changes in Muslim consumer behaviour the Halal cosmetic manufacturers need to include versatile Halal product line to cater to the needs of different religious groups in the market.

Based on the disparities in the findings of the above studies it is postulated that the attribute of innovation positively impacts on the adoption. Thus, the second hypothesis is as follows:

*H2: Perceived attributes of innovation has a significant positive impact on the adoption of Halal cosmetics*

**Impact of financial cost (FC):** The integration of Halal in food, cosmetics and pharmaceuticals specifies that products are prepared hygienically with permissible ingredients and the entire production process is according to Shariah (Khan, et al., 2018a). The leading global brands such as Nestle has integrated Halal principles into their business operations to assure that its products are safe, hygienic, nutritious, pure and made of natural ingredients (Khan and Haleem, 2016; Khan, et al., 2018b). The assurance of Halalness in cosmetics indicate the role of a certification authority such as JAKIM in Malaysia to control and monitor the production, label and promote the Halal cosmetics. It will add an additional cost to the

production, price and access to an ultimate Halal cosmetic product which is anticipated to have a negative impact on the adoption as cost is a major driver of innovation adoption (Premkumar & Roberts, 1999). The associated cost with new technology such as in the case of Halal cosmetics may have a significant impact on the adoption decision (Brown & Russell, 2007). Usually, new technology is costly and the cost is an inhibitor of technology use (Tornatzky & Klein, 1982). In the context of this study, Halal cosmetics are not limited to Muslims only, many non-Muslims are expected to adopt this phenomenon. Additionally, the certification process, cost of certification, labelling and marketing will equally impact Muslim consumers adoption due to additional associated cost and availability of Halal cosmetics which may have a negative impact on the adoption.

The proceeding arguments signify the urgency to analyse the impact of associated cost on the adoption through following hypothesis;

*H3: Financial cost has a significant negative impact on the adoption of Halal cosmetics*

**Social influence (SI):** The concept of social influence is incorporated from psychological studies, it explains the changes in thoughts or emotions of an individual represented in their particular behaviour against the association with other (Pavalou & Chai, 2002; Woolthuis, et al., 2005). Moreover, in many developing countries social influence and cultural values prevails to gain an access to opportunities ranging from adoption of business opportunities to products and services (Salman & Jamil, 2017). It is suggested that despite the lack of positive interest in an individual toward Halal cosmetics the connection with individuals' attitude and family or friends' expectations can shape positive behaviour. Due to the social influence a consumer may switch purchasing behaviour from conventional cosmetics to Halal cosmetics. Hajipour et al. (2015) studied the reasons for Halal cosmetics consumption among Dubai consumers and found that the religious values are the leading cause of using Halal cosmetics instead of influence from friends and family. A few consumers may not opt Halal cosmetics as they have concerns over the Halalness of certain products as these products are mostly imported from non-Muslim countries which do not fully comply Halal standards (Hajipour, et al., 2015). Micro-finance lending has long been the answer to many rural developments around the world. It also focuses on the role played by micro-finance institutions in enabling women's micro-entrepreneurship (Salman, A, 2018). The cultural background, country of origin and religiosity can play a significant role in promoting the Halal cosmetics brand (Nasution, et al., 2017). The characteristics of the country of origin improve customer awareness as the customer has an opportunity to evaluate a product (Lee & Lee, 2009). Different studies prove that consumer strongly considers the advantages, disadvantages and product quality based on the country of origin (Lin & Chen, 2006: Saimee, 2010: White, 2012). The Halal cosmetic products originate from Muslim countries or manufactured within Muslim territories have the capacity to shape consumer trust more quickly instead of foreign brands from non-Muslim countries. Based on the this argument it is postulated that;

*H4: Social influence has a significant positive impact on the adoption of Halal cosmetics*

**Religiosity and innovation adoption:** As DOI theory provides the basis to establish a theoretical framework to analyse the innovation adoption process yet, a framework

comprehensively designed based on this theory is unable to incorporate the entire features of the adoption process. The scholars in the Halal industry predict that religion is the defining factor to influence consumers' attitude, values and behaviour (Mokhlis, 2009; Alam & Sayuti, 2011). Moschis & Ong (2011) define religion as 'an individual's inherited utter beliefs about certain scripted religious teachings. Religion is a basic tool to determine people behaviour (Alam, et al., 2011a; Berger, 1961; Mukhtar & Butt, 2012; Schneider, et al., 2011) and influence consumer's attitude and behaviour (Delener, 1990, 1994; Mullen, et al., 2000; Pettinger, et al., 2004; Wilkes et al., 1986). Religiosity measures an individual's level of commitment to ones' religion and the level of that particular religion's reflection in the attitude and behaviour of an individual (Jhonson, et al., 2001). In a simple notion religiosity is the amount of religiousness in an individual (De Run, et al., 2010; O'Connell, 1975). Religion is an influential player in determining the choice of food among different societies (Dindyal & Dindyal, 2003; Musaiger, 1993). The influence of religion on the consumption of food is dependent on religion itself and the extent to which individuals understand and follow its rules.

In the context of Halal cosmetics, the adoption level differs based on consumers' religiosity, consumers with strong Islamic religious beliefs reject cosmetic products containing ethanol. whereas, moderate religious consumers are not really concerned about ethanol in perfumes as long as it is not being used for consumption purpose (Hunter, 2012). The dynamic findings of past studies especially on Halal cosmetics have positively linked religiosity with attitude (Rahman, et al., 2015), product quality (Hashim, et al., 2014) and country of origin (Patton, 2010). Religiosity directly impacts on the awareness of Halal cosmetics which means a religiously aware customer will always seek to strictly use Halal products (Nasution, et al., 2017). Another study on Halal cosmetics adoption in Malaysia found that social influence, product attributes and consumer innovativeness influence the adoption process and are mediated by religiosity (Mohezar, et al., 2016). However, awareness and understanding of Halal cosmetics are insufficient to ensure complete adoption. There are other elements which contribute in adoption such as behaviour and attitude, Ahmad et al. (2015), found religiosity has substantial influence on individuals' behaviour as compared to knowledge pertaining to the Halal matters and there is a significant difference between consumers behaviour on Halal foods and Halal cosmetics.

Based on the above discussion, the following hypotheses are posited to confirm the mediating role of religiosity in adoption.

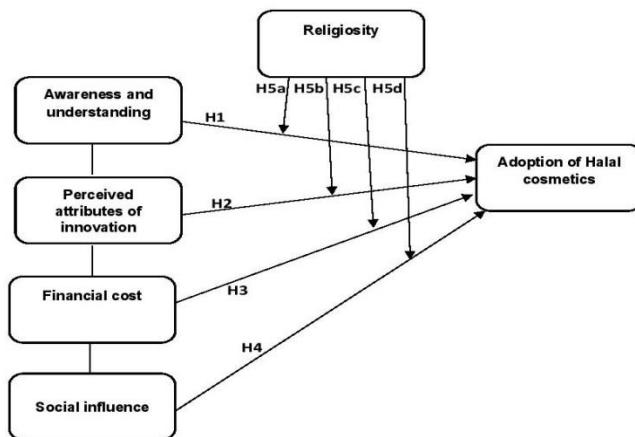
*H5a: Religiosity moderates the relationship between awareness and understanding and the adoption of Halal cosmetics.*

*H5b: Religiosity moderates the relationship between perceived attributes of innovation and the adoption of Halal cosmetics.*

*H5c: Religiosity moderates the relationship between financial cost and the adoption of Halal cosmetics*

*H5d: Religiosity moderates the relationship between social influence and the adoption of Halal cosmetics*

The proposed theoretical framework of this study is illustrated in Figure 1.



**FIGURE 1  
THEORETICAL MODEL**

## METHODOLOGY

### Sampling Design

This research utilised a quantitative method to achieve the objectives of this study. The data was collected through a self-administrated survey questionnaire using two methods, a mall intercept approach from the leading shopping malls (Pavillion and Sunway) located in Kuala Lumpur and an online survey. This particular city area has diverse ethnic groups of Muslim and non-Muslim population. The respondents were approached politely and were requested their willingness to participate in the survey. The respondents who agreed to participate in the survey were briefly explained about the purpose of the survey and were given instructions about how to answer the questionnaire. The online version of the questionnaire was shared in different groups through social media such as WhatsApp groups, Instagram and Facebook. A total of 310 questionnaires (200 online samples and 110 mall intercept method) were distributed to the respondents. Altogether 293 completed questionnaires were received however, only 275 were deemed suitable for useable for data analysis as 17 samples were not completely filled.

### Variables Measurement

The survey questionnaire was drafted in English for the purpose of data collection and was translated into Malay to provide convenience to respondents. The content of the questionnaire was worded in easy yet a comprehensive and precise language so that it is easier to understand and answer accordingly. The questionnaire contained two sections; section ‘A’ contained demographic information such as gender, age, marital status, religion, education, occupation and income.

Section ‘B’ gauges respondents’ self-reported awareness and level of understanding of Halal cosmetics, these questions were designed based on extensive literature review of the past studies. Respondents were asked questions such as

*“Have you ever heard about Halal cosmetics? Are you aware of the non-Halal ingredients in cosmetics? Are your products made of 100 per cent Halal ingredients? I only use cosmetic products which has a Halal logo on it”*

and were provided with 5-scale Likert option to answer. This section consists of 28 items to determine consumer innovativeness, financial cost, social influence, religiosity and Halal cosmetics adoption. Consumer innovativeness was measured using 7 modified items adopted from Roger's (2003), financial cost's impact was measured using 3 items adopted from Premkumar and Roberts, 1999; Sophonthummapharn, 2009), social influence was determined using 4 items adopted from Mohezar et al. (2016), religiosity was measured 6 items through Mukhlis (2009) scale and adoption of Halal cosmetics was evaluated through 4 items adopted from Lada et al. (2009); Mukhtar & Butt (2012). Respondents were provided 5-scale Likert options ranging from strongly disagree=1 to strongly agree=5.

## FINDINGS AND DISCUSSION

Table 1 outlines the demographic profiles of the respondents. The total respondents were 275, out of which 89 (32.36%) were male and 186 (67.63%) were female. The majority (40%) was aged between 25-29, while 26.54% aged between 17-24 and about 16.72% aged between 30-34. Most (51.27%) of respondents were single and about 46.90% were married. The respondents come from different religious backgrounds yet, the majority (68%) were Muslims while, 16.36% Christians, 8.36% Buddhists and 7.27% were Hindus. About 40% held an undergraduate degree and most (37.09%) were employed in the government sector. The income ranged from below 2, 000 to above 5, 000 Ringgit Malaysia per month however, most (40%) of the respondents were earning between 3,001-4, 000. The detailed demographic characteristics are reported in

Table 1.

Table 1 DEMOGRAPHIC PROFILE OF RESPONDENTS			
Characteristics		Frequency	Percentage %
Gender	Male	89	32.36
	Female	186	67.63
Age	17-24	73	26.54
	25-29	110	40
	30-34	46	16.72
	35-39	34	12.36
	40-44	12	4.36
Marital Status	Single	141	51.27
	Married	129	46.90
	Divorced	3	1.09
	Widow	2	0.72
Religion	Muslim	187	68
	Christian	45	16.36
	Buddhist	23	8.36
	Hindu	20	7.27
Education	SPM	48	17.45
	Diploma	82	29.81
	Degree	110	40
	Master	32	11.63

	PHD	03	1.09
Occupation	Student	58	21.09
	Government Sector	102	37.09
	Private Sector	78	28.36
	Self-employed	20	7.27
	Others	17	6.18
Income (RM)	Below 2, 000	45	16.36
	2001-3000	76	27.63
	3001-4000	110	40
	4001-5000	20	7.27
	Above 5, 000	24	8.72

## Validity and Reliability Test

The variables adopted in this study are evaluated through a measurement model using two psychometric tests, validity and reliability. If the construct's composite reliability (CR) value is greater than 0.7 and average variance extracted achieves cut-off point it represents the satisfactory degree of reliability (Hair, et al., 2013). The measurement model results are presented in Table 2. Our results show that our measurement model has a satisfactory degree of reliability.

**Table 2  
MODEL'S MEASUREMENT**

Variables	Items	Factor loading	CR	AVE
Awareness and understanding	I have heard about Halal cosmetics before I am aware of non-Halal ingredients in cosmetics My cosmetic products are made of 100% Halal ingredients I only use cosmetic products which has a Halal logo on it	0.731 0.730 0.759 0.713	0.820	0.733
Perceived attributes of innovation	Halal cosmetics will offer me new benefits Halal cosmetics have more advantages than disadvantages Halal cosmetics fits with my current life style I would feel secure using Halal cosmetics compared to non-Halal cosmetics The concept of Halal cosmetics is easy to understand Halal cosmetics require a lot of mental effort I want to try Halal cosmetics at least one month to see what benefits it can offer me	0.685 0.660 0.704 0.777 0.767 0.808 0.797	0.846	0.742
Financial cost	Halal cosmetics are cheaper compared to conventional cosmetics I do not bother about the price while purchasing Halal cosmetics I will use Halal cosmetics because it's of high quality even though its expensive	0.678 0.733 0.752	0.812	0.721
Social influence	Most people around me use halal cosmetics/personal care products When it comes to a matter of choosing cosmetics/personal care products, I would like to be like my friends I choose halal cosmetics/personal care products based on recommendations from friends and relatives. People who I listen to could influence me to use halal cosmetics/personal care products	0.858 0.813 0.703 0.675	0.871	0.762

Religiosity	I regularly pray five times a day I fast regularly during Ramadhan I regularly recite the Holy Quran I pay zakat every year if I meet the prescribed criteria, I try to follow Islamic conjunctions in all matters of my life I always try to avoid minor and major sin	0.845 0.645 0.843 0.612 0.676 0.802	0.834	0.737
Adoption of Halal cosmetics	I prefer to use halal cosmetics/ personal care product I will not purchase or use a product if doubt with the ingredients I prefer to use halal cosmetics/ personal care products even if it is more expensive I prefer to use halal cosmetics/ personal care products even if the sales promoter promotes the conventional products	0.801 0.816 0.798 0.776	0.800	0.797

Discriminant validity is tested using Fornell & Larcker (1981) approach. The results of discriminant validity are reported in Table 3. It can be noted that all the variables' AVE values are substantially higher than their correlation with other variables. Furthermore, the factor loadings for all the items are greater than 0.6 which is significant as  $P<0.0001$ , it further proves the convergent validity. The results of model measurement and discriminant validity prove that that various validity and reliability criteria are satisfactory and suitable to test structural model and hypotheses testing.

Table 3 DISCRIMINANT VALIDITY								
Constructs	Mean	SD	AU	PAI	FC	SI	RL	AHC
Awareness and understanding (AU)	5.33	1.54	0.80					
Perceived attributes of innovation (PAI)	4.26	1.13	0.37	0.91				
Financial cost (FC)	4.68	1.30	0.46	0.40	0.85			
Social influence (SI)	4.34	1.20	0.34	0.48	0.38	0.86		
Religiosity (RL)	3.18	0.82	0.53	0.36	0.33	0.38	0.82	
Adoption of Halal cosmetics (AHC)	3.89	0.97	0.38	0.72	0.44	0.52	0.57	0.88

### Hypothesis Testing

Based on the satisfactory criteria of validity and reliability, a structural model was proposed for the measurement of hypotheses. The structural model's predictive accuracy is measured through portion of variance explained. The results of the measurement model are reported in Table 4. The results represent that our model explains 52.5% variance in the adoption of Halal cosmetics. Nonparametric bootstrapping along with 2000 replications was applied to test the structural model (Wetzel, et al., 2009). The hierarchical approach was applied to test the hypotheses of this study, firstly to test the model with main effects (and covariates) and secondly to test the interaction effect (Chin, et al., 2003). The results of measurement model show that awareness and understanding ( $\beta=0.196$ ,  $p<0.005$ ), perceived attributes of innovation ( $\beta=0.138$ ,  $p<0.001$ ), financial cost ( $\beta=-0.2.21$ ,  $p<0.005$ ) and social influence ( $\beta=0.239$ ,  $p<0.005$ ) have a significant and positive effect on the adoption of Halal cosmetics hence, H1, H2, H3 and H4 are supported. Additionally, interaction effects also have a significant and positive effect ( $p<0.001$ ) on the adoption of Halal cosmetics therefore, H5a, H5b, H5c and H5d are also supported. The R<sup>2</sup> value in the final model for the adoption of Halal cosmetics is 0.60 including both effects.

Table 4 represents that awareness and understanding (AU) has a significant positive effect on the adoption of Halal cosmetics (AHC). These findings are compatible with the findings of Sungkar (2008), Teng and Jamilah (2013), due to the strong presence of Halal cosmetics in Malaysian industry most of the consumers are well aware of Halal cosmetic products. Therefore, it is anticipated that improved consumer awareness and understanding especially the clear information about the ingredients carrying Halal logo will increase the adoption rate.

The findings on perceived attributes of innovation (PAI) represent that it has a significant positive impact on AHC, which specifies that clean, safe, hygienic and superior quality products will be adopted even by non-Muslim consumers (Amat, 2006; Hashim and Mat Hashim, 2013). Additionally, Halal cosmetic products need to be customized to suit according to the needs of different consumers and should be easily available to cater to the increasing demand (Kharim, 2011).

The findings on impact of financial cost delineate that FC negatively impact on AHC which indicates the need of manufacturing cheaper Halal cosmetics and acceleration in standardization process so that these products are readily available for consumers on discounted rates.

The findings of social influence (SI) show that it has a significant positive impact on AHC. These findings assert that social influence such as the opinion of friends, relatives and close family members help consumers to gain knowledge and build confidence towards halal cosmetics. This finding is not surprising as Malaysia is a Muslim country and Halal cosmetics is quite popular and widely used and accepted by the community, it justifies consumers adoption of new products is driven by the social recognition and approval (Pavalou and Chai, 2002).

The religiosity (RL) findings represent that religiosity mediates AU, PAI, FC and SI. This finding is compatible with Rahman et al. (2015), Hashim et al. (2014) and Nasution et al. (2017), which specifies that religiously devoted consumers integrate their beliefs and values in daily life which influences them to concentrate on their awareness and understanding, attributes of innovation and social influence while deciding to adopt Halal cosmetics.

\*\*\* p < 0.001, \*\*p<0.01

<b>Table 4</b> <b>RESULTS OF STRUCTURAL MODEL</b>			
<b>Hypotheses</b>	<b>Relationship</b>	<b>Path Coefficient</b>	<b>Supported/not supported</b>
<b>Direct Effect</b>			
H1	AU → AHC	0.196***	Yes
H2	PAI → AHC	0.138**	Yes
H3	FC → AHC	-0.221***	Yes
H4	SI → AHC	0.239***	Yes
<b>Moderating Effect of Religiosity</b>			
H5a	AU → AHC	0.284**	Yes
H5b	PAI → AHC	0.143**	Yes
H5c	FC → AHC	-0.21**	Yes
H5d	SI → AHC	0.162**	Yes

Overall, findings show that AU, PAI and SI has a significant positive and FC has a significant negative influence while RL is a mediator between AU, PAI, FC and SI to influence

the adoption of Halal cosmetics. Moreover, all main hypotheses (H1, H2, H3, H4) and null hypotheses (H5a, H5b, H5c, H5d) are accepted.

## CONCLUSION

The main purpose of this study was to theoretically evaluate the adoption of Halal cosmetics among Malaysian consumers through the implication of DOI theory. This study extended DOI theory through the addition of financial cost, social influence and religiosity constructs to analyse the factors which may influence the adoption. The findings indicate that awareness and understanding, perceived attributes of innovation and social influence had a significant positive impact whereas, financial cost has a significant negative impact on the adoption. Additionally, religiosity appeared to be a significant mediator as it also had a significant positive influence on awareness and understanding, perceived attributes of innovation, financial cost and social influence which directly influence the adoption, it supports both main and null hypotheses of this study.

### Theoretical and Practical Implications

This study is a significant contribution to the general body of knowledge, in general to the extension of DOI and in particular towards the adoption of Halal cosmetics in Malaysia. Previous studies have focused on intention to use, awareness, attitude and perception of Halal cosmetics and mostly these studies focused on Muslim consumers. However, compared to past studies this study incorporates consumers of different religious backgrounds and renders a comprehensive insight into the factors which may impact on the adoption of Halal cosmetics. This study has successfully extended DOI theory through three additional constructs which can be used to evaluate the factors which influence the adoption under the given settings.

The findings of this study are robust for the manufacturers of Halal cosmetic industry who are looking forward to strengthening their business and increase its market share. The manufacturers of different Halal cosmetic brands may use findings of this study to identify the factors which influence the adoption. The findings of this study suggest that AU has a significant positive impact on AHC therefore, Halal cosmetic manufacturers need to promote their products, clearly label the ingredients of the product and need to make sure that their products are certified and contain 100 per cent Halal ingredients. PAI also positively influences AHC which specifies that the associated benefits such as safety, hygienic and health of Halal cosmetics should be clearly informed to the consumers. FC was found to have a negative impact on AHC which indicates to accelerate manufacturing and standardization process. SI and RL were also found to have a positive impact on AHC which specifies that manufacturers of Halal cosmetics aggressively closely connected religious consumers.

### Research Limitations

This study has several practical limitations like other studies of Halal cosmetics, Firstly the data collection was limited to major shopping malls and online survey which may not be an ideal scenario to generalise the findings to entire consumers as the opinion from other

geographical areas may alter the results of this study. Secondly, DOI framework extended through two additional constructs which might be unreliable since other factors (professionalism of Halal marketers, availability, prices and brand image) may affect the adoption rate. Future studies may consider incorporating these factors to conduct similar research.

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