

Halal Cosmetic Literacy among Malaysian Muslim Undergraduates Based on OECD's Financial Literacy Framework

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ABSTRACT

This research involves an element of OECD's Financial Literacy Framework, insofar as the framework has not previously been adapted in halal cosmetic context. This thus requires a philosophy of Positivism that enables the framework to be empirically operationalised by using an online survey. The aim was to examine the level of literacy for halal cosmetic among Malaysian Muslim students through psychographic variables and to conduct comparisons between gender, age, faculty, Islamic backgrounds, as well as educational sponsorship to elicit differences in halal cosmetic literacy level between Islamic and non-Islamic undergraduates. The findings show the active usage of cosmetics, and their ability to access the relevant cosmetic information increases the level of halal cosmetic literacy among non-Islamic undergraduates. In contrast, the lack of cosmetic usage due to a shortage of money and, waiting for cosmetic providers to assure about halal status in cosmetic products are seemed to influencing Islamic students' slow progress in acquiring halal cosmetic literacy. As a consequence, Islamic students obtain a lower level of halal cosmetic literacy than non-Islamic students. It is expected that this study may assist cosmetic providers to understand their cosmetic consumers based on Islamic backgrounds because it influences the way they acquire halal cosmetic literacy. The findings of the study indicate that OECD's financial literacy framework could also be adapted in the study of cosmetic literacy.

Keywords: *financial literacy, halal cosmetic literacy, undergraduates*

1.0 INTRODUCTION

Halal cosmetic well-being products have been construed as securing users from using products that are prohibited by Shariah and claimed to be using only nutritionally premium and the high-quality ingredients, at an affordable price and value for money (Mohezar, Zailani, & Zainuddin, 2016; Hashim, & Mat Hashim, 2013). In the context of Malaysia, a shariah compliance cosmetic product should be able to meet the stringent procedural factors; the pre-requisition to obtain Malaysia Halal Logo with the Malaysia

Standard (MS) number, must initially adhere to the National Pharmaceutical Control Bureau (NPCB)'s Guidelines for Control of Cosmetic Products in Malaysia and Guidelines on Cosmetic Good Manufacturing Practice (Hashim, & Mat Hashim, 2013). Cosmetic suppliers must undergo the rigorous inspection and auditing with Department of Islamic Development Malaysia (JAKIM) before Halal Certification is awarded. As such, the Malaysian Standard MS 2200:2008 and Halal Certification Procedure Manual must satisfactorily be complied by suppliers. In case of new product lines to be launched, such new

line is compulsorily re-applied for gaining the halal certification and should go through all the application processes over again (Low, 2017). At the individual context, important stimulants known to influence an individual's halal well-being is halal cosmetic literacy due to it equips him/her with the capability to grasp the halal information on cosmetic items. This is a state where a person is able to access all relevant cosmetic information and could sufficiently analyse it before making a decision to buy any cosmetic items that he/she likes.

Halal cosmetic literacy empowers the consumers to decide his/her favourite range of cosmetic sets by acquiring the right knowledge skills and attitudes essential to preserve him/her from buying the counterfeit cosmetic products (Teng & Wan Jusoh, 2013). Improving halal cosmetic literacy will enhance individuals' confident in obtaining much benefits from the cosmetic bought that suit their lifestyle and are able to demonstrate the characteristics of cleanliness, safety and high quality (Mohezar et. al., 2016).

The importance of halal cosmetic literacy is even more crucial for the college students who are mostly the major consumers for the beauty products but at the same time their daily expenses are being sponsored by parents and/or governmental educational funds (Md Sapir, 2016). Peers on social media platforms are becoming among the significant drivers for buying beauty cosmetic products during adolescence as college students are becoming more independent from their family's control and free to choose their educational funds (Md Sapir & Abdul Halim, 2020; Md Sapir, 2016). Therefore, halal cosmetic literacy would enable them to identify their basic cosmetic necessities and prioritize their educational funds for tuition fees and accommodations in advance. From students' literacy context, in consistent with the study of sustainable consumption of students undertaken by Pocol, Marinescu, Amuza, Cadar, & Rodideal (2020), halal cosmetic literacy should also be aligned with financial literacy that will assist students towards having a more sustainable economy in the future.

This research seeks to contribute to the halal literature, particularly in the halal cosmetic usage among Malaysian Muslim undergraduates, as explained by their demographic factors which stimulate their purchase intentions of halal cosmetic products. Malaysian Muslim undergraduates were previously defined by Md Sapir & Abd Halim (2020) as a set of students from Malaysia who follow and practise Islamic religion based on Al-Quran & As-Sunnah. They are currently studying for their first degree in universities. Of specific interest in the investigation of halal cosmetic literacy is the effect of demographic factors in predicting the halal cosmetic literacy of universities students as they create the largest cosmetic user segment that is very likely to achieve high cosmetic literacy (Ibrahim, M. Razali, Zulkifli, Md Nor, Mansor, Mhd Nasir, & M. Kassim, 2018). Compared to the older generation, undergraduates are gaining exposure to the beauty amusement through internet. At the same time, students have always been associated with insufficient income and spend recklessly their educational money to mainly entertainment and beauty products (Md Sapir, 2016). This research is novel in its attempt to introduce halal cosmetic literacy framework that comprehensively adapted five dimensions as recommended by Organization for Economic Co-operation and Development (Atkinson & Messy, 2011) namely awareness, knowledge, skills, attitude and behaviour. The outcomes of this research highlight regular halal cosmetic users who are actively participate in online beauty tutorials, have financial capacity and possess a high internal frame of reference, should be in consistent with the positive outcomes for good halal cosmetic decision-making. Analysis of demographic factors such as gender, age, faculty, Islamic background, and educational sponsorship, indicate that there is a significant difference in effect of gender, faculty and Islamic background on halal cosmetic literacy.

The remainder of the paper therefore organised as follows. Literature review discusses the determinants of halal cosmetic literacy, followed by a review of literature on halal cosmetic literacy among undergraduates in Section 2. This is then followed by the

research objectives in Section 3. The methodology is explained in Section 4, followed by the analysis and findings in Section 5 and 6 respectively. The paper summarises the results in Section 7 and ends with the limitations and conclusion of the results in Section 8 and 9 respectively.

2.0 LITERATURE REVIEW

2.1 Determinants of Halal Cosmetic Literacy

Most prior works on determinants of halal cosmetic literacy concentrate on marketing and consumer behavioural research (Sheer, 2019; Putri, Mursitama, Furinto, & Abidinagoro, 2019; Ibrahim et. al., 2018; Ayob, Awadh, & Jafri, Jamshed, S. Ahmad, & Hadi, 2016; Mohezar et. al., 2016; Teng, & Wan Jusoh, 2013). A preliminary to this insight of halal literacy was the ability to read and understand cosmetic product labels such as information related to the cosmetic manufacturer's identity, safety, stability, and the ingredients of the products (Low, 2017; Ayob et. al., 2016). However, it has been found that individual with adequate halal literacy is able to differentiate between halal and non-halal ingredients in the cosmetic products used (Mohezar, et. al., 2016), easily get access to the cosmetic-related information, insist to gain detailed explanations of halal haram matters from cosmetic suppliers as well as apply halal cosmetic information to make essential purchase decision (Teng & Wan Jusoh, 2013; Hajipour, Gharache, Hamidzadeh, & Mohammadian, 2015). An understanding of overall halal concept of permissible and prohibited matters in Shariah (Hashim & Mat Hashim, 2013) and keep abreast with the latest pharmaceutical and dermatology knowledge (Infante, Calixto, & Campos, 2019) empower individual with the important skills to make the cosmetic purchase at the economical price with the premium quality of ingredient and assured halal. As an individual's awareness on halal cosmetic lead him/her up to accretion of aesthetics knowledge and behaviour (Hashim & Mat Hashim, 2013), it is conjectured that those who are highly aware of the importance

of halal matters in the cosmetic products would be highly likely to become halal cosmetic literate.

Further investigations highlighted the awareness, knowledge, skills and intention to purchase halal cosmetic products did not necessarily correlate with individual's actual purchase actions (Teng & Wan Jusoh, 2013). A religious person's behaviour on halal food consumption is found consistently to be more sensitive to the halal cosmetic products, however they would still not be recognized as the main halal cosmetic users. Instead, non-Islamic, urbanite, modern, career-driven, ambitious, educated, stylish, beauty enthusiasts have been known as the premier halal cosmetic users in the world (Cosmetics Business, 2020; Sheer, 2019; Borgna, 2018; Ahmad, Abd. Rahman, & Ab Rahman, 2015; Teng, & Wan Jusoh, 2013). Aesthetics cultures and surrounding with the famous beauty ambassadors via online tutorials have been known among the factors that affect a person's halal cosmetic literacy. Information provided by beauty influencers regarding halal has an important effect on the tendency to purchase halal cosmetics (Cosmetics Business, 2020).

Prior research has depicted that halal cosmetic literacy was not only restricted to knowledge and skill of halal but also the ability to use, keep abreast about the halal cosmetic industry in the global situations (Cosmetics Business, 2020), applying the most of global cosmetic brands (Badarudin, 2019), ability to share the beauty tips with the others (Borgna, 2018) and visualizing cosmetics products such as lipstick or eye shadow via make-up tutorials (Hassali, Al-Tamimi, Dawood, & Verma, & Saleem, 2015). Beauty products users also will make big investment on the range of cosmetic items including skin care, hair care, eye-colour cosmetic, powder make-up, lip make-up and manicure and pedicure (Hassali, et. al., 2015) in order to enhance his/her cosmetic literacy. Religious individuals who have tendency to obey Islamic guidelines may express moderate purchasing behaviour towards cosmetic products. Maqasid Shariah explains cosmetic and beautifying products are categorized into hajiyyah (complementary) and tahsiniyyah (embellishments) in which its consumptions

are above necessities. However, such restrictions may imply certain detrimental effects to cosmetic businesses scene. If there is a relatively small demand on halal cosmetic products, it may provide numerous challenges in maintaining the strong economic condition of the country.

As such, literacy framework proposed by Organization for Economic Co-operation and Development (Atkinson & Messy, 2011) in which consolidates halal awareness with other four dimensions, namely knowledge, skills, attitude and behaviour, underlie the effective purchasing halal cosmetic decision. Such OECD literacy is the framework this research looks upon as irrefutable, comprehensive and able to produce positive outcomes for good halal cosmetic decision-making.

2.2 Halal cosmetic literacy among Muslim undergraduates

The study of halal cosmetic literacy will not only enable individuals' pattern of spending behaviour of cosmetic to be investigated, but also to understand whether the students' literacy on halal cosmetic & beauty products affect their economic well-being (Md Sapir @ Md Shafik & Wan Ahmad, 2020). Majority of Muslim undergraduates are enlightening the cosmetic industry with the fact that student segments are the major cosmetic users with 74.6% of them consume halal beauty products for personal care (Teng, & Wan Jusoh, 2013). Among the cosmetic products, basic lipsticks such as lip balm, facial and sun care products, as well as hair styling remain most in demand among university students (Statista Research Department, 2011; Mohammad & Hashim, 2019). In 2016, Google reported that there were 4.6 billion viewers for 1.5 million beauty make over on Youtube. The exchange of product experiences and previews via online platform indirectly improve halal knowledge and skills regarding the cosmetic products (Hassali, et. al., 2015).

Another crucial aspect regarding Muslims' literacy level among university students was the determination of its relationship with their socio-cultural background in which it includes study of their gender, age, faculty, Islamic background, and

educational sponsorship (Putri et.al., 2019; Sheer, 2019; Teng, & Wan Jusoh, 2013). Students' demographic characteristics could have significant influence on future economic growth (Cohen, Broccoli, & Greaney, 2020), could influent future initiatives, support policy changes and track progress (Khan, Apramian, Kang, Gustafson, & Sibbald, 2020), could ensure the targeted population remained true to what the parameter of sample population was (Aminnuddin, 2020), could improve the level of knowledge and education, and could motivate in adopting a sustainable consumption behaviour (Pocol et. al., 2020). Accordingly, demographic factors are the independent variables in this study; and it is described as follows:

2.2.1 Gender

In social environment where cosmetic was normally synonymous with women, modern cosmetic industry has also reserved the range of items for men including skin and facial care, hair as well as odourless perfume (Infante et. al., 2019). It was found that 80% of male undergraduates mainly use cosmetic products for shaving (Cosmetics Business, 2020; Infante et. al., 2019), skincare for oily skin (Infante et. al., 2019) and hair care products for looking stylish (Cosmetics Business, 2020). Meanwhile, majority of female undergraduates use cosmetic such as lipstick and lip balm for smoothening their cracked lips (Statista Research Department, 2011; Mohammad, & Hashim, 2019). However, recent studies showed that both male and female cosmetic users have are more inclined to use one-fit-all genderless cosmetic products such as shampoo, shower gels, facial cream as well as shaving products, that can be easily used at home rather than saloon (Cosmetics Business, 2020; Low, 2017; Ayob et. al., 2016). Men were found to have low cosmetic literacy as compared to women (Cosmetics Business ,2020; Low, 2017; Ayob et. al., 2016). Most of men prefer to allow their female companion to decide which cosmetic products are suitable for their personal use (Blanchin, Chareyron, Levert,2015; Xin Guo, 2011). Men were found have no loyal to any cosmetic products and they simply choose alternative products which

have similar function to the previous cosmetic product they used (Ayob et. al., 2016).

Based on the past literature findings, it has been established that female have high level of halal literacy as compared to male counterparts. Therefore, this study postulates that:

H1: Female undergraduates have higher levels of halal cosmetic literacy than males.

2.2.2 Age

Beauty products' stakeholders can be described as persons who are younger than 35 years old, nevertheless with some inconclusive findings. Previous literatures have found that majority of cosmetic users are between 17-25 years old (Putri et. al., 2019; Ahmad et. al., 2015; Teng & Wan Jusoh, 2013), On the other hand, the individuals with high purchasing cosmetic power are normally 27 years old (Cosmetics Business, 2020). Cosmetic users who are between 25-34 years old tend to buy cosmetic products via online platform rather than physical stores (Teng & Wan Jusoh, 2013). University students who were born between 1995 -2005 are overrepresented in cosmetic research and among this group, expenditure allocation for cosmetic products has been ranked third after education fees and foods (Sheer, 2019). The significant number of students from age group of 16-24 years old were more likely to prefer - hair styling products as compared to other type of cosmetics (Cosmetics Business, 2020). In contradiction, the aged group of above 25-year- old have more demand for greater quantities of makeup foundation, make up remover and facial care products (Infante et. al., 2019). In terms of literacy aspects of cosmetic, the international cosmetic brand users who are between 21-30-year-old have low awareness of halal cosmetic (Hajipour et. al., 2015). Other studies have reported that the propensity to choose and purchase halal cosmetic products will increased as the beauty users get older (Teng, & Wan Jusoh, 2013).

Based on the past literature findings, it will be expected that the university undergraduates who are between 21-25 years old will have high level of halal literacy as compared to their

younger counterparts. Therefore, this study postulates that:

H2: Cosmetic users who are between 21-25 year- old have the higher levels of halal cosmetic literacy than those below 20 years old.

2.2.3 Faculty

Previous studies have found that those respondents who enrolled in formal Islamic studies are loyal to halal brands (Ahmad et. al., 2015; Teng, & Wan Jusoh, 2013). There is concrete evidence to suggest that non-Islamic respondents are loyal to halal brand cosmetic due to their cosmetic expectation that is different from the Islamic one. Most of non-Islamic users are found to opt for the halal products due to brand authenticity, ethics, hygiene and safety (Global Cosmetics News, 2019; Sheer,2019; Ahmad et. al., 2015; Mohezar et. al., 2016). In terms of halal literacy, years of study in religious schools are significantly different from non-religious schools with regard to conscientiousness of Islamic guidelines on the cosmetic usage (Teng, & Wan Jusoh, 2013). Based on the previous findings, it is expected that the Academy of Islamic Studies University Malaya (APIUM) respondents may have high level of halal literacy as compared to Sciences field students. Therefore, this study postulates that:

H3: APIUM students have higher levels of halal cosmetic literacy than social and pure sciences students.

2.2.4 Islamic backgrounds

Earlier researchers claimed that respondents who are practising Islamic in their daily life tend to be more sensitive to halal cosmetic items and loyal to halal brands regardless of whether they are cosmetics or foods (Putri et. al., 2019). For non-Islamic users, they perceive that quality of a product is more important than Halal status and they are more concerned with consuming halal foods than using halal cosmetic (Hajipour et. al., 2015; Hassali et. al., 2015). Based on the previous literature findings, it is expected that the respondents with the Islamic background have higher level of halal literacy than those with non-Islamic

background. Therefore, this study postulates that:

H4: Students with Islamic backgrounds have higher levels of halal cosmetic literacy than those with non-Islamic background.

2.2.5 Education sponsorship

Md Sapir (2016) emphasised the fact that the PTPTN borrowers and sponsorship college students from APIUM spend 1.4% of their educational fund for non-education related expenses per semester including cosmetic purchase. Therefore, while past studies recommend that undergraduates students may have the tendency to spend money on cosmetic, the similar may not be true in APIUM (Md Sapir @ Md Shafik & Wan Ahmad, 2020). In sociocultural studies across the globe, many literatures also found that higher tertiary students spend only RM 100 to buy cosmetics in a year (Blanchin et. al., 2015; Teng, & Wan Jusoh, 2013; Xin Guo, 2011). Therefore, this study postulates that:

H5: PTPTN borrowers have higher levels of halal cosmetic literacy than students sponsored by government, parents and other sponsors.

3.0 RESEARCH OBJECTIVES

Based on the above concerns, this research aimed to explore the level of halal cosmetic literacy among Muslim university students in Malaysia and the demographic factors that affected them. Specifically, this research intends to conduct comparisons between gender, age, faculty, Islamic backgrounds, as well as educational sponsorship to elicit differences in halal cosmetic literacy level between Islamic and Non-Islamic undergraduates.

4.0 METHODOLOGY

This research paper adopted a Positivism research philosophy to allow the framework to be empirically operationalised and quantitatively measured (Creswell & Creswell, 2018). The deductive approach in this study permits the research to be designed for

answering five hypotheses statements. Based on exploratory research design, the 300 questionnaires for the study were conveniently distributed online to University of Malaya students (UM students) enrolled for 2019/2020 intake in Kuala Lumpur central campus. The questionnaire was designed in Malay language. According to Low (2017) and Ayob *et. al.* (2016), the Malaysian respondents are more willing to cooperate if questions are written in Malay language. To enlighten respondents for articulating the accurate information, they had been given the titbits as a memento for every completed set of questionnaires returned. This study complied to the guidelines of the University of Malaya Research Ethics Committee (UMREC) in carrying out online survey.

From this survey, 86% respondents are Muslim undergraduates who are between 18 - 25-year-old. Unfortunately, review on literature in Section 2 have stated that the main cosmetic buyers are about 27 years old. While this study is not ideal for investigating the buying power of halal cosmetic products in general, the total respondents who are between 18-25 years old forms 10% of the total population of 32,292,2000 in Malaysia (Malaysia Youth Data Bank System, 2020), which can be considered as the prospective buyers of cosmetic products in the near future. The selection of UM undergraduates to represent this population because UM is known as the leading university in Malaysia, located within the most urbanized and well-developed area of Klang Valley, nurturing well-educated young intellectuals, and internet-savvy undergraduate students. These characteristics are closely matched to urban cosmetic users, defined by previous literature, who are between 20-25 years old and the main users of cosmetic products (Borgna, 2018).

Currently UM home for 22,000 students including international students from various countries, with 14 faculties and two academy studies are currently operated (UM, 2020). For this study, part time undergraduates who are currently working, postgraduate students and those who studying in Nilam Puri Kelantan were excluded so that the desired outcomes could be generated.

Respondents were grouped based on their faculty enrolled. Students' faculty would predict the way of their upbringing either in the Islamic or else in the secular/non-Islamic environments. Table 1 shows that Islamic background is an integral aspect of the APIUM. Islamic studies and practices are heavily incorporated in nearly every aspect of the APIUM lifestyle (Nazlan, 2020). Most of their daily matters revolve around Islamic culture. As such, this research intends to obtain the patterns of halal cosmetic literacy between Islamic and Non-Islamic undergraduates, therefore, the study categorises Islamic undergraduates as follow:

Table 1: UM faculties and academies

Faculty	Islamic Backgrounds	Faculties & Academies
Academy of Islamic Studies (APIUM)	Islamic	Academy of Islamic Studies
Social Science	Non-Islamic	Faculties of Education, Law, Arts & Social Sciences, Business & Accounting, Economics & Administration, Languages & Linguistic, Built Environment and Computer Science & IT, Academy of Malay Studies.
Pure Science	Non-Islamic	Faculties of Dentistry, Engineering, Science, Medicine, Pharmacy.

Source: UM Website

This study employs nominal and ordinal scales for demographic aspects of gender, age, faculty, Islamic background and educational sponsorships. The constructs for halal cosmetic literacy dimension are not only adapted

according to previous measurement of financial literacy but also accommodate those halal literatures and Islamic guidelines on cosmetic products consumption. Question wise analysis was made with the assistance of SPSS version 25.0. Statistical tests of the Mann Whitney U -test and the Kruskal Wallis test were employed on the data for testing hypotheses statements.

5.0 ANALYSIS

5.1 Factor Analysis

The Bartlett's test of sphericity at 2183.055 confirmed that there was no redundancy between variables. According to Cerny & Kaiser (1977), sampling adequacy is greater than 0.80 in Kaiser -Meyer-Olkin (KMO), indicated meritorious level of acceptability that there was no multi-collinearity among the items. The correlation matrix for coefficients' inspection recommended by Tabachnick & Fidell (2007) is minimum value of 0.55. Therefore, the items loading below 0.55 was removed resulting the initial 30 developed constructs for halal cosmetic to be reduced to only 12 constructs only. 4 out of 12 constructs are related to literacy as per illustrated in Table 2 and Table 3.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		
	Approx.	2183.055
Bartlett's Test of Sphericity		
	Chi-Square	
	Df	435
	Sig.	0.000

Table 3: Halal Cosmetic Literacy Constructs

Components- Halal Cosmetic Literacy	Code	Factor Loading
Displaying halal logo from the JAKIM make cosmetic users are able to differentiate between halal and haram cosmetic products.	PF1	0.673
As a regular cosmetic consumer, I think I have easily accessed to the relevant information	PF2	0.634

regarding the cosmetic products that I use.

I want to have freedom in using any cosmetic products that I like, but I still insist cosmetic sellers to provide the detailed explanations of the halal haram matters in such products.

As a regular cosmetic consumer, I think I no longer need to get any notifications from NPCB from time to time (R).

Note: R means negatively wording items and need to be reversed to avoid response bias.

5.2 Reliability Test

Table 4 below depicts the Cronbach Alpha Coefficients for halal cosmetic literacy constructs. The constructs were intentionally crafted by employing 5-Likert Scale from 1 (Strongly Disagree) to 5 (Strongly Agree). The Cronbach's Alpha in Table 4 for the constructs were considered moderate for reliability status.

Table 4: Reliability test of Halal Cosmetic Literacy

Dimensions	Cronbach Alpha Coefficient (α)	No. of items	Reliability Status
Halal cosmetic literacy	0.660	4	Moderate

5.3 Instrumental design

For constructs of PF1-PF3, each Strongly Agree (SA) answer was rewarded 5 marks while Strongly Disagree (SD) answer was granted 1 mark. Any negatively wording items were reversed, therefore for PF4, SD answer was a positive direction and gained 5 marks while SA was valued as 1 mark. In order to calculate average score of halal cosmetic literacy, a maximum of 20 marks (5 marks each x 4 constructs) is converted to the value of 1. The mean scores were further divided into three levels to exhibit its level of halal cosmetic

literacy: >0.75 for highly score, 0.50 -0.74 for moderately literacy score and <0.49 for low score.

5.4 Tests of Normality

The Table 5 exhibited the result of Kolmogorov-Smirnov and Shapiro-Wilk in determining whether the data is normally distributed or else, not normally distributed. If data is normally distributed, parametric tests of T-Tests and ANOVA are employed to examine the significant differences in the mean halal cosmetic literacy score for sociocultural factors. If not so, non-parametric tests of Mann Withney U -Test and Kruskal Wallis Test would be used to achieve the similar objective. Kolmogorov-Smirnov found significant values of <0.05 for female, Islamic studies, Islamic backgrounds, government sponsorship and parents' fund variables, suggesting a violation of the assumption of normality. Meanwhile, Shapiro-Wilk found that a value of <0.05 for age <20 years old, Islamic studies, Islamic backgrounds, and parents' fund variables were also significant. Therefore, non-parametric tests of Mann Withney U -Test and Kruskal Wallis Test were employed to perform the hypothesis testing. In Appendix 1-5 the symbol Z symbolises Mann Whitney U -Test value, while the symbol K epitomises Kruskal Wallis Test.

Table 5: Tests of Normality

Demographic	Kolmogorov-Smirnov		Shapiro-Wilk			
	Statistic	Df	Sig.	Statistic	Df	Sig.
Gender						
Male	0.079	52	0.200	0.983	52	0.656
Female	0.066	206	0.029	0.988	206	0.086
Age						
<20 years old	0.118	45	0.131	0.943	45	0.028
21-25 years old	0.058	213	0.078	0.990	213	0.168
Faculty						
APIUM	0.103	110	0.006	0.966	110	0.007
Science Social	0.069	95	0.200	0.989	95	0.642
Pure Science	0.110	53	0.163	0.970	53	0.205
Islamic Background						
Formal Islamic	0.108	117	0.002	0.965	117	0.004
Non-Formal Islamic	0.073	141	0.063	0.990	141	0.437
Education Sponsorship						
Government sponsorship	0.106	74	0.040	0.969	74	0.069
PTPTN Loan	0.069	86	0.200	0.985	86	0.439
Parents' fund	0.104	76	0.041	0.952	76	0.006
Others	0.146	22	0.200	0.967	22	0.639

6.0 FINDINGS

6.1 Demographic characteristics

Appendix 1-6 illustrated the halal cosmetic literacy psychographic profiles of the sample of this study. In general, the Muslim undergraduates were female who are between 21-25 years old from non-Islamic backgrounds mainly study in science fields. The sociocultural factors were found closely related to characteristics in prior study of Teng & Wan Jusoh (2013) and Ahmad *et. al.* (2015). It is also found that 33% of the respondents are currently PTPTN sponsored students.

6.2 Results

The level of halal cosmetic literacy among Muslim university students and the demographic factors that affected them were presented as below:

From Appendix 1, the Muslim females (score = 0.7517, n=206) recorded a higher score of halal cosmetic literacy than Muslim males (score = 0.7385, n=52). It was matched to prior research of Cosmetics Business (2020), Low (2017) and Ayob *et. al.* (2016) that depicted men were found to have low cosmetic literacy as compared to women. Thus, hypothesis 1 (H1) is accepted as a true statement. A Mann-Whitney U-test revealed no significant difference between Muslim males and females in the halal cosmetic literacy levels ($Z=-0.195$). Nevertheless, the level of halal cosmetic literacy depends greatly upon the females' ability to access the relevant information regarding cosmetic products (score = 0.9311, SD =0.13865, $Z= -1.685$, $*=p<0.05$, see Appendix 3).

From Appendix 1, the <20 years old students (score = 0.7556, n=45) recorded a higher score of halal cosmetic literacy than 21-25 years old (score = 0.7477, n=135). It was closely matched to prior research of Hajipour *et. al.* (2015) that depicted the international cosmetic brand users who are between 21-30-year-old have low awareness of halal cosmetic. Thus, hypothesis 2 (H2) is rejected as a false statement. A Mann-Whitney U-test revealed no significant difference between <20 years old students and 21-25 years old in the halal cosmetic literacy levels ($Z=-1.696$).

From Appendix 1, overall, the social science Muslim undergraduates (score = 0.7563, n=95) recorded a higher score of halal cosmetic literacy than the pure science Muslim students (score = 0.7472, n=53) and the APIUM students (score = 0.7436, n=110). It was matched to prior research of Global Cosmetics News (2019), Sheer (2019), Ahmad *et. al.* (2015) and Mohezar *et. al.* (2016) that depicted most of non-Islamic users opt for the halal products due to brand authenticity, ethics, hygiene and safety. Thus, hypothesis 3 (H3) is rejected as a false statement. A Kruskal Wallis test revealed no significant difference between social science, pure science, and the APIUM students in the halal cosmetic literacy levels ($K=0.209$). Nevertheless, Appendix 4 illustrated that the test also revealed a statistical difference in demanding for the detailed explanations of the Halal Haram matters in the cosmetic products across three different faculties (APIUM, score = 0.7545, SD =1.36070, Social Science, score = 0.4526, SD =0.69845, Pure Science, score = 0.6604, SD =1.08881, $K=4.624$, $*=p<0.05$).

From Appendix 1, the Non-Islamic background students (score = 0.7550, n=141) recorded a higher score of halal cosmetic literacy than Islamic background students (score = 0.7419, n=117). Thus, hypothesis 4 (H4) is rejected as a false statement. It was matched to prior research of Cosmetics Business (2020), Sheer (2019), Borgna (2018), Ahmad, Abd. Rahman, & Ab Rahman (2015) and Teng, & Wan Jusoh (2013) that depicted non-Islamic, urbanite, modern, career-driven, ambitious, educated, stylish, beauty enthusiasts have been known as the premier halal cosmetic users in the world. A Mann-Whitney U-test revealed no significant difference between Islamic and Non-Islamic in the halal cosmetic literacy levels ($Z=-0.785$). Nevertheless, the level of halal cosmetic literacy depends greatly upon the non-Islamic students to access the relevant information regarding cosmetic products (score = 0.9433, SD =0.11790, $Z= -2.283$, $*=p<0.05$, see Appendix 5).

From Appendix 1, overall, the PTPTN borrowed students (score = 0.9279, n=86) recorded a higher score of halal cosmetic

literacy than the other-types of sponsorship (score = 0.9273, n=22), Government sponsorship (score = 0.9216, n=74) and the parents' sponsorship (score = 0.8947, n=76). It was matched to prior research of Md Sapir (2016) that depicted the PTPTN borrowers and sponsorship college students from APIUM spend 1.4% of their educational fund for non-education related expenses per semester including cosmetic purchase. Thus, hypothesis 5 (H5) is rejected as a true statement. A Kruskal Wallis test revealed no significant difference between Government sponsorship, PTPTN borrowed, parents sponsored students and other types of sponsorship in the halal cosmetic literacy levels ($K=4.914$).

7.0 SUMMARY

The level of halal cosmetic literacy among Muslim university students in Section 6 revealed that Muslim female undergraduates, mainly from non-Islamic studies, possess sufficient cosmetic knowledge to enable them in making effective halal cosmetic purchasing decisions. To elicit differences in halal cosmetic literacy level between Islamic and non-Islamic Muslim undergraduates, the researcher segregated the data between those Muslim undergraduates who were pursuing the Islamic studies (n= 117) and those who were pursuing non-Islamic studies (n=141). Summary of findings in Table 6 below recommended that the scores of halal cosmetic literacy between the two groups consistently indicated a high significant difference.

Overall, non-Islamic students scored higher halal cosmetic literacy than Islamic counterparts. Among the non-Islamic undergraduates, the literacy score for their halal cosmetic knowledge were high due to they are the regular cosmetic users, actively participate in online beauty tutorials, and their ability to access to the relevant information regarding the cosmetic products that they currently use by own self. It was matched to prior research that depicted halal cosmetic literacy was also the ability to use, keep abreast about the halal cosmetic industry in global situations (**Cosmetics Business, 2020**), applying most of the global cosmetic brands

(Badarudin, 2019), ability to share the beauty tips with the others (Borgna, 2018) and visualising cosmetics products such as lipstick or eye shadow via make-up tutorials (Hassali *et. al.*, 2015). The results also supported the findings of previous empirical studies that being computer dexterity would help individual to stay contemporary to access knowledge (Manelli, 2009). These outcomes suggested that non-Islamic background students have an internal frame of reference, in which Md Sapir (2016) recognised them as possessing the habit of reluctant to seek external reviews regarding the best way forward. Bowden (2016) claimed that an individual with a high internal frame of reference has high capability and confidence in managing their personal life without others' interference and always be associated to score high literacy. The exposure to regularly use cosmetic products contribute to the necessary cosmetic knowledge and skills. This suggests that possess sufficient cosmetic knowledge undoubtedly enable them in making effective halal cosmetic purchasing decisions as compared to their Islamic counterparts. Adequate cosmetic information positively affects their ritual performance to Allah. It is found most of regular halal cosmetic users expect more on the cosmetic functionality that is being easily removed by water, or cosmetic that allows water to reach any part of skin when performing ablution for five-times of daily prayers (Low, 2017).

Overall halal cosmetic result showed Islamic students scored lower than non-Islamic counterparts. Among Islamic undergraduates in APIUM, the score was highest for still insist on obtaining detailed halal cosmetic information from cosmetic providers, but refuse to be persuaded for cosmetic buying. Nelson-Jone (2012) helpfully recognised the people as such religious background of APIUM undergraduates have an external frame of reference, who cultivating the habit of gathering a bunch of opinion from credible and /or informal sources before making a cosmetic purchase decision. It has been observed that Islamic students had a unique process of acquiring halal cosmetic literacy as compared to non-Islamic undergraduates. For example,

Islamic students have shown the tendency to acquire halal cosmetic literacy based on the religion’s primary sources, Al-Quran, and Al-Hadith (Adiba, 2019). It was matched to prior research that depicted individuals who have tendency to obey Islamic guidelines may express moderate purchasing behaviour towards cosmetic products. Therefore, the way Islam teaches Muslims in moderately consuming cosmetic play a pivotal role in influencing how Islamic students cope with the excessive and extravagante cosmetic advertisements that tend to allure consumers to beautify physical body for displaying their body assets and for attracting their opposite gender’s friends. The review of the previous literature has indicated that religious people apply cosmetic mainly for necessities such as to reduce their oily skin, protect their skin from sunburnt as well as for healthy well-being (Teng & Wan Jusoh, 2013). Furthermore, this phenomenon could be due to the shortage of money to buy halal cosmetic products in the market. Md Sapir & Abdul Halim (2020) claimed that about 2/3 of Islamic studies undergraduates come from low- income families and qualifies for zakat as compared to non-Islamic counterparts. Islamic students perceive cosmetic purchase as *tahsiniyyah* (luxurious) products, even if halal, in which the purchase decision to prioritise beauty products may detriment their money-saving for educational purposes (Md Sapir 2016; Hajipour *et. al.*, 2015; Teng & Wan Jusoh, 2013).

Table 6: The differences in halal cosmetic literacy level between Islamic and non-Islamic Muslim undergraduates

Islamic Backgrounds	Faculties & Academies	Comparison of score	Components-Halal Cosmetic Literacy	Code
Islamic	Academy of Islamic Studies (APIUM)	Low score of halal cosmetic literacy (score = 0.7419, see appendix 1)	Islamic background students scored the highest for “I want to have freedom in using any cosmetic products that I like, but I still insist cosmetic sellers to provide the detailed explanations of the halal haram matters in such products”	PF3
Non-Islamic	Faculties of Education, Law,	High score of halal	Islamic background	PF2

Arts & Social Sciences, Business & Accounting, Economics & Administration, Languages & Linguistic, Built Environment and Computer Science & IT, Faculties of Dentistry, Engineering, Science, Medicine, Pharmacy.	cosmetic literacy (score = 0.7550, see appendix 1)	students scored the highest for “As a regular cosmetic consumer, I think I have easily accessed to the relevant information regarding the cosmetic products that I use.”
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8.0 LIMITATIONS

The paper adapted OECD’s financial literacy framework into the context of halal cosmetic on cosmetic usage and commensurate with the Islamic and non-Islamic respondents. As an exploratory attempt, the newly adapted halal cosmetic literacy is not being expected to comprehensively and sufficiently represent all the dimensions of halal cosmetic literacy. These findings are based on the study which concentrates only on Muslim undergraduates who are currently pursuing Islamic and/ or non-Islamic courses in UM and do not focus on undergraduates from other religions.

9.0 CONCLUSION

The study explored the demographic patterns of Malaysian Muslim undergraduates and their level of halal cosmetic literacy. Findings from Mann Whitney U -test and the Kruskal Wallis test indicated statistically insignificant differences between halal cosmetic literacy and their gender, age, faculty, Islamic background, and education sponsorship. Further findings from the level of halal cosmetic literacy between Islamic and non-Islamic backgrounds indicated that non-Islamic backgrounds undergraduates, in general, score higher level of halal cosmetic literacy than Islamic background students. The higher literacy score was consistently related to the internal frame of reference psychological tendency, as Bowden (2016) claimed that they have the tendency to self-searching the information for making a quick decision without others’ interference. The Muslims from non-Islamic backgrounds won the highest halal cosmetic literacy score also primarily due

to their personal initiatives to looking for relevant information regarding the halal matters in cosmetic products and their effective acts of routine halal cosmetic usage. This conjectured that those who possess the knowledge and skills of halal matters in the cosmetic products would be highly likely to become the halal cosmetic literate person. Thus, effective and interactive beauty tutorials are pertinent to enhance the non-Islamic students' halal cosmetic literacy.

The overall halal cosmetic result showed Islamic students scored lower than non-Islamic counterparts. The lower literacy score as compared to non-Islamic was consistently related to an external frame of reference psychological tendency, as Md Sapir (2016) conjectured that their tendency to gain accumulative feedbacks and response from the various external factors, influencing their slow progress in deciding on buying their halal cosmetic products. They realised that they have no confidence in how cosmetic products are surely halal that they keep demanding detailed halal cosmetic information from cosmetic providers. Mostly, Islamic students would turn themselves to cosmetic knowledge as prescribed in Al-Quran and Hadith. Halal cosmetic literacy is observed to be positively associated with greater levels of investment. Those Islamic undergraduates felt they have no discretionary income tended to restrain cosmetic purchase. The result showed that the undergraduates are PTPTN borrowers implying that the majority have to control their cosmetic purchase to ensure the continuation of their study. Therefore, in the context of undergraduates, this study suggests that halal cosmetic literacy should also be aligned with financial literacy for more meaningful results. Thus, a metasearch engine that enables many different cosmetic brands to be presented in one platform (John, 2019) is pertinent to enhance the cosmetic literacy among Islamic students. Metasearch engines are currently popular for an external frame of reference's travellers because it enables of comparing cosmetic prices and offers from many different websites, offer reviews about the quality of products as well as search filters based on halal

option (Viktor, 2020), insofar, it has yet to be discovered in halal cosmetic context.

These findings should also be employed by beauty academies in developing halal cosmetic education programmes for beauticians that would provide them with the basic knowledge of halal cosmetic. Halal cosmetic education should be reinforced by beauty academies as a life-long pursuit for certified beauticians. By implementing halal cosmetic literacy, it could enable the halal cosmetic industry in Malaysia to be invigorated in which cosmetic providers able to attract both Islamic and non-Islamic backgrounds, as well as encouraging cosmetic users to buy halal cosmetic products in accordance to their needs and preferences.

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11.0 APPENDICES

Appendix 1: Mean statistics between Overall Halal Cosmetic Literacy and undergraduates

IV= Demographics	N=258	%	DV= Overall Halal Cosmetic Literacy (OPF)*				Score	Std Deviation	Statistic
			0%-50%	51%-75%	76%-100%				
Gender									
Male	52	20.2	2	17	33	0.7385	0.13526	Z=-0.195	
Female	206	79.8	3	71	132	0.7517	0.09720		
Age									
<20 years old	45	17.4	1	14	30	0.7556	0.10672	Z=-0.696	
21-25	213	82.6	4	74	135	0.7477	0.10582		
Faculty									
APIUM	110	42.6	3	38	69	0.7436	0.12061	K=0.209	
Soc. Science	95	36.8	1	32	62	0.7563	0.09737		
Pure Science	53	20.5	1	18	34	0.7472	0.08683		
Islamic background									
Islamic	117	45.3	3	42	72	0.7419	0.11871	Z=-0.785	
Non- Islamic	141	54.7	2	46	93	0.7550	0.09379		
Sponsorship									
Government	74	28.7	1	31	42	0.7378	0.10096	K=4.914	
PTPTN	86	33.3	0	26	60	0.7715	0.09534		
Parents	76	29.5	3	27	46	0.7322	0.11596		
Others	22	8.5	1	4	17	0.7568	0.11474		

Appendix 2: Mean statistics between PF1 and undergraduates

IV= Demographics	N=258	%	DV= Halal Cosmetic Literacy (PF)					Mean Score	Std Deviation	Mean statistic
			5 SA	4 A	3 SA	2 D	1 SD			
PF 1 COSMETIC SELLERS NEED TO APPLY AND DISPLAY HALAL LOGO										
Gender										
Male	52	20.2	26	1	8	4	3	0.8038	0.24572	Z=-1.2
Female	206	79.8	74	67	41	15	9	0.7767	0.22227	
Age										
<20 years old	45	17.4	19	18	7	0	1	0.8400	0.17373	Z=-1.5
21-25	213	82.6	81	60	42	19	11	0.7700	0.23520	
Faculty										
APIUM	110	42.6	45	31	20	8	6	0.7836	0.23482	K=1.95
Soc. Science	95	36.8	34	26	21	10	4	0.7600	0.23265	
Pure Science	53	20.5	21	21	8	1	2	0.8189	0.19715	
Islamic background										
Islamic	117	45.3	46	32	23	10	6	0.7744	0.23568	Z=-0.33
Non- Islamic	141	54.7	54	46	26	9	6	0.7887	0.22009	
Sponsorship										
Government	74	28.7	28	20	16	6	4	0.7676	0.23647	K=1.13
PTPTN	86	33.3	35	29	13	6	3	0.8023	0.21583	
Parents	76	29.5	27	24	16	6	3	0.7737	0.22233	
Others	22	8.5	10	5	4	1	2	0.7818	0.26120	

Appendix 3: Mean statistics between PF2 and undergraduates

IV= Demographics	N=258	%	DV= Halal Cosmetic Literacy (PF)					Mean Score	Std Deviation	Mean statistic
			5 SA	4 A	3 SA	2 D	1 SD			
PF 2 ACCESS TO THE RELEVANT INFORMATION OF THE COSMETIC PRODUCTS										
Gender										
Male	52	20.2	34	8	4	3	3	0.8577	0.23874	Z=-1.685*
Female	206	79.8	15	44	5	3	3	0.9311	0.13865	
Age										
<20 years old	45	17.4	32	11	1	0	1	0.9244	0.14948	Z=-0.00
21-25	213	82.6	15	41	8	6	4	0.9146	0.16942	
Faculty										
APIUM	110	42.6	74	22	5	4	5	0.8836	0.21052	K=3.41
Soc. Science	95	36.8	71	20	2	2	0	0.9368	0.12467	
Pure Science	53	20.5	41	10	2	0	0	0.9472	0.10489	
Islamic background										
Islamic	117	45.3	77	26	5	4	5	0.8838	0.20551	Z=-2.283*
Non- Islamic	141	54.7	10	26	4	2	0	0.9433	0.11790	
Sponsorship										
Government	74	28.7	57	11	2	2	2	0.9216	0.17771	K=1.91
PTPTN	86	33.3	62	21	0	2	1	0.9279	0.14361	
Parents	76	29.5	51	16	5	2	2	0.8947	0.18611	
Others	22	8.5	16	4	2	0	0	0.9273	0.13159	

Appendix 4: Mean statistics between PF3 and undergraduates

IV= Demographics	N=258	%	DV= Halal Cosmetic Literacy (PF)					Mean Score	Std Deviation	Mean statistic
			5 SA	4 A	3 SA	2 D	1 SD			
PF 3 USE ANY COSMETIC PRODUCTS THAT I LIKE, WITH THE DETAILED EXPLANATIONS OF THE HALAL/HARAM MATTERS										
Gender										
Male	52	20.2	30	6	4	6	6	0.8769	1.51756	Z=-0.229
Female	206	79.8	98	57	28	14	9	0.5602	0.96887	
Age										
<20 years old	45	17.4	17	15	5	5	3	0.6978	1.17908	Z=-1.486
21-25	213	82.6	11	48	27	15	12	0.6085	1.09153	
Faculty										
APIUM	110	42.6	62	17	15	6	10	0.7545	1.36070	K=4.624*
Soc. Science	95	36.8	49	25	10	9	2	0.4526	0.69845	
Pure Science	53	20.5	17	21	7	5	3	0.6604	1.08881	
Islamic background										
Islamic	117	45.3	66	18	16	7	10	0.7316	1.32331	Z=-0.993
Non- Islamic	141	54.7	62	45	16	13	5	0.5348	0.88010	
Sponsorship										
Government	74	28.7	33	15	15	4	7	0.8081	1.37669	K=4.764
PTPTN	86	33.3	45	29	6	4	2	0.4349	0.72676	
Parents	76	29.5	38	12	10	11	5	0.6868	1.17318	
Others	22	8.5	12	7	1	1	1	0.5273	1.01145	

Appendix 5: Mean statistics between PF4 and undergraduates

IV= Demographics	N=258	%	DV= Halal Cosmetic Literacy (PF)					Mean Score	Std Deviation	Mean statistic
			1 SA	2 A	3 SA	4 D	5 SD			
PF 4 NEED TO GET NOTIFICATIONS FROM NPRA FROM TIME TO TIME										
Gender										
Male	52	20.2	2	5	21	15	9	0.5077	0.20374	Z=-0.753
Female	206	79.8	9	8	88	57	44	0.4845	0.20158	
Age										
<20 years old	45	17.4	0	4	18	17	6	0.4889	0.16817	Z=-0.140
21-25	213	82.6	11	9	91	55	47	0.4892	0.20860	
Faculty										
APIUM	110	42.6	5	8	46	28	23	0.4982	0.20940	K=1.283
Soc. Science	95	36.8	6	3	41	26	19	0.4968	0.21009	
Pure Science	53	20.5	0	2	22	18	11	0.4566	0.16815	
Islamic background										
Islamic	117	45.3	5	8	46	28	23	0.4991	0.20615	Z=-0.824
Non- Islamic	141	54.7	6	5	58	43	29	0.4809	0.19854	
Sponsorship										
Government	74	28.7	3	5	33	15	18	0.4919	0.21246	K=0.270
PTPTN	86	33.3	5	5	33	27	16	0.4977	0.20975	
Parents	76	29.5	3	3	31	25	14	0.4842	0.19394	
Others	22	8.5	0	0	12	5	5	0.4636	0.16775	

Appendix 6: Notes

Short Form	Meaning	Value	
		Non- Reversal Code	Reversal Co
SA	Strongly Agree	5	1
A	Agree	4	2
SA	Slightly Agree	3	3
D	Disagree	2	4
SD	Strongly Disagree	1	5