ORIGINAL CONTRIBUTIONS

Perception and attitude of adults toward cosmetic products amid COVID-19 pandemic in Malaysia

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INTRODUCTION

The Pharmaceutical Affairs Act defines cosmetic products as any product which is applied to enhance the facial features or overall appearance of the user. The usage of cosmetic is varied as per population background where young generation tends to use cosmetic for aesthetic purposes, while older generation tends to use cosmetic products to counteract the effects of aging. The beauty and health market in Malaysia are developing quickly. According to the Malaysia Department of Statistics, the aggregate spending in

Abstract

Background: The use of cosmetics is growing among both male and female consumers due to the availability of different brands. While there is an increase in the usage of cosmetic products, it is concerning whether the consumers are aware of the safety of the products.

Aims: This study aimed to widely explore consumers’ perceptions and attitudes toward cosmetics within the context of the COVID-19 pandemic.

Methods: A cross-sectional study was carried out among adults in Selangor, Malaysia. Thirty-three questions divided into three dimensions (socio-demographic parameters, assessment of perception, and assessment of attitude) were developed and validated to be answered by cosmetics consumers. Descriptive and inferential statistical analysis was done using SPSS.

Results: A response rate of 87% was achieved, and the mean age of participants was 33 ± 7.2. The overall perception of consumers indicates low levels of perception and moderate level of attitude toward cosmetic products. There was a positive correlation and high relationship between participants' perception and attitude ($p = 0.001$, $r = 0.72$). A significant association was observed between demographic data of respondents and their attitude and perception toward cosmetic products. Participants were unaware that sharing of cosmetic products could lead to bacterial infection and possibly increased the chance of contracting COVID-19.

Conclusion: This study displayed a nonchalant perception and attitude of Malaysian adults toward cosmetic products by focusing on aesthetics rather than health safety. Therefore, it is recommended to raise awareness on the composition and effects of cosmetic products, increase the practice of hygiene and dissuade the sharing of cosmetics to reduce transmissions of COVID-19.

KEYWORDS

attitude, cosmetic products, perception
the Malaysian Cosmetics Method is about US$407 million, and this demand is met mainly by imports rather than domestically manufactured products. The Malaysian cosmetic industry is ever-growing, which makes it an evolving field of interest for both consumers and manufacturers.  

The use of cosmetic products usually improves the appearance and helps with the demeanor of the user, their use can be associated with multiple known and unknown adverse reactions from less severe local reactions such as irritation, burning sensation, and contact urticarial rash to systemic reactions such as infections and rhinoconjunctivitis. Therefore, awareness among consumer is very important not only in terms of their economy but also in the aspect of health. Various individuals utilize beautifying agents found to be unaware of the potential dangers that can undermine their wellbeing while using them. Additionally, wearing makeup could increase the likelihood of infection as applying regular makeup will allow the ingredients and particles including any microbes to enter the open micro holes in the skin, and this would lead to infection, dermatitis, and inflammation.

Several literature reviews revealed that cosmetics, for example, moisturizers, shampoos, and eye cosmetics, can instigate microbial development and conceivably cause contaminations. A previous study reported that mostly all of makeup kits (skin and eye cosmetics) in the beauty salon were contaminated with bacteria, including Streptococcus species and E-coli, and around 20% of them were contaminated with fungus and yeast. Therefore, the incidence of bacteria, fungi, and potentially viruses through cosmetics is admissible, which leads to the dissuasion against cosmetic sharing. However, there is evidence that as long as the cosmetic product makes the users feel more attractive and presentable, they are more inclined toward using those products despite the presence of potentially toxic ingredients. A literature study revealed that some extremist customers in the cosmetic industry are willing to endure minimal side effects as long as their appearance is enhanced, for example, enduring a tingling sensation in the lips when using a lipstick which temporarily enlarges the lips.

The general consensus is that perception and attitude in consumer behavior within the cosmetic industry is influenced by lifestyle factors such as religion, income, and age-related factors which often manifests in the interest in aesthetics and improving one’s personal appearance. The perception and attitude of consumers toward cosmetic products is essential as it helps identifying areas in which information needs to be disseminated on the safe manufacturing and usage of cosmetics. By identifying the current attitude and perception, it would provide the reasons and the rationale which drives their consumer behavior, and this can help in improving both manufacturing and distribution processes.

In response to the COVID-19 pandemic, there is still no published data that evaluate the survival rate of the virus on or in cosmetic products; however, beauty experts have recommended that proceeding with regularly scheduled beauty regimen should be done cautiously, as the virus can potentially spread through sharing of cosmetic products. Professional dermatologists stated that plastic makeup could be a source of COVID-19 infection because the virus is able to live on these plastic and metal cases for up to three days, handling and applying makeup, and then touching face could be a very real way to contract the virus. Lip products, if unsuitably cleaned, are particularly risky because lipsticks and lip liners are a natural gateway to respiratory tract. This gave the urge and motivation to conduct such a study highlighting how consciousness public is to the health effects of cosmetic use amid COVID-19 pandemic. Therefore, this study aimed to investigate the perception and attitude of adults toward cosmetic products within the context of the COVID-19 pandemic in Malaysia.

2 | MATERIALS AND METHODS

2.1 | Study design and setting

A cross-sectional study design was employed to assess consumers’ perceptions and attitudes toward cosmetic products. Attitude is a settled and distinct way of thinking which one adopts toward a subject; thus in this paper, attitude was described as the dominant way of thinking which the consumers have toward cosmetics. On the other hand, perception is defined as the process in which one receives knowledge and makes their own inferences and conclusions toward a subject. In this paper, perception was described as the own knowledge which consumers have toward cosmetics. This study was conducted in Selangor, Malaysia, where public places in this district, such as educational institutions, community pharmacies, and community halls, were selected to perform this study. Participants were recruited fairly from both urban and rural areas to avoid overrepresenting of one region from another and to reduce sampling bias. The participants for this study were selected via convenient sampling based on the following criteria: (1) Malaysian citizens, (2) aged 18 and above, (3) current user of the cosmetic product(s), and (4) not working or studying in the cosmetic field. A total of 559 cosmetic consumers were approached but only 484 successfully agreed to participate in the study (response rate 87%).

2.2 | Research instrument and data collection procedure

A self-administered questionnaire was extracted from a previously validated questionnaire, after some modifications to adapt the current pandemic, as a data collection tool. The instrument tool was specifically designed to be run among cosmetic user, and questionnaire was reviewed by two dermatologists to ensure validity of the survey to examine perception and attitude of cosmetic users amid COVID-19 pandemic. The questionnaire’s validity and reliability test were then carried out by conducting a pilot study involving 40 cosmetic users. The internal consistency value of the scales in the current study was 0.81, the content validity of the scale was 0.89, and the test-retest reliability was 0.92. Basically, there were 33 questions on the questionnaire, which were divided into three
3.2 | Consumers’ perception toward cosmetic products

The perception of the adult cosmetics users indicates their understanding of the products which they use. 26.2% (127) of users agreed that the ingredients on the product labels are misleading, while 39.9% respondents are uncertain whether they are being misled by the ingredients on the labels. While 237 (48.9%) of the respondents are uncertain whether the side effects of cosmetics are proven by scientific studies, a similar percentage of 47% (228) are uncertain that natural cosmetic products are better than chemical products. In the context of the COVID-19 pandemic, majority of the adult consumers 79.8% are uncertain whether the sharing of cosmetics increases the likelihood of spreading the virus. The overall perception of Malaysian Adult Consumers indicates low levels of knowledge and much uncertainty on the composition and effects of cosmetic products, as indicated in Table 2.

3.3 | Consumers’ attitude toward cosmetic products

A majority of the respondents (50.2%) agree that the use of cosmetic products increases their beauty and appearance. There is also an indication that the respondents would prefer to have good skin and improved appearance rather than know the potential side effects of the products which they use as 47.5% of the respondents indicate. The adult consumers show their preference of use of products with halal certification as 55.6% agree, and 12.2% strongly agree that use of halal-certified products is their preferred option. Cumulatively, 234 (48.4%) agree that halal cosmetic products have good quality. The cosmetic users believe the information which they read on product labels though only 91 respondents (18.8%) query the information which they see. The overall attitude of participants toward cosmetic products is moderate as reported in Table 3.

3.4 | Association between demographic characteristic and participants’ perception and attitude

There was a statistically significant difference between gender for perception and attitude in which the female mean score is higher which asserts that females have more knowledge and attitude toward cosmetic products than their male counterparts. Besides, middle-age group (36–50) showed statistically to have more perception and attitude about cosmetics than younger ones. Students were significantly noted to have a higher attitude and perception score than the working class, which is inverse to the income levels. Students have less income than the working class, yet they tend to be more knowledgeable on cosmetics products and developments. Urban residence statistically impacted the attitude and perception
of the Malaysian adult customers, as this is where the products are widely marketed and distributed. In this study, consumers noted that their minimum monthly expenditure on cosmetics was <RM 50 but their capacity to spend more on cosmetic products increased when their income exceeded RM 3000 as it would imply more disposable income. The remaining independent variables that have statistically significant association with perception and attitude mean score of respondents are documented in Table 4.

Lastly, there is correlation between attitude and perception as depicted in Table 5 ($p < 0.05$), and the $r$ coefficient (0.72) indicated a statistically strong relationship between perception and attitude. It is assumed that the first impression of a cosmetic product can affect consumers' perceptions and hence determine their attitudes toward the product. Therefore, the participants' perceptions toward cosmetic products would influence their attitudes toward using cosmetic products.

### 4 | DISCUSSION

This study is considered to be the first of its kind to explore widely the level of attitude and perception toward cosmetic products amid COVID-19 pandemic in Malaysia. The use of high-quality and sanitary cosmetics leads to an overall improvement in appearance and reduced the incidence of adverse side effects which are typically experienced from poorly manufactured cosmetics. The use of counterfeit and poorly manufactured cosmetics is associated with an increase in cancer and other health problems. Adult cosmetics users in the current study are still predominantly women as compared to men. However, in the past five years, there has been an upsurge in the numbers of men who use cosmetics. This trend is becoming more popular as reflected in the digital media where more men are even becoming public users and marketers of cosmetic products. Therefore, these studies collectively indicate that even though women are still the dominant users of cosmetic products, there is an equally significant population of male users.

There is a significant number of participants who state that they use cosmetic products to enhance their beauty and appearance. Basically, it is the major motivation which drives the consumers to purchase cosmetic products as they wish to improve their current appearance and fix their features which they are unhappy with. This is the motivation which the cosmetic industry capitalizes on by continuously launching and modifying products which

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**TABLE 1** Socio-demographic characteristics of respondents ($N = 484$)

| Characteristic                        | Frequency (%) |
|--------------------------------------|---------------|
| **Gender**                           |               |
| Male                                 | 86 (17.8)     |
| Female                               | 398 (82.2)    |
| **Age (years)**                      |               |
| Mean (SD): 33 (7.2)                  |               |
| 18–35                                | 249 (51.4)    |
| 36–50                                | 198 (41)      |
| ≥51                                  | 37 (7.6)      |
| **Ethnicity**                        |               |
| Malay                                | 154 (31.8)    |
| Chinese                              | 263 (54.4)    |
| Indians                              | 63 (13)       |
| Others                               | 4 (0.8)       |
| **Marital status**                   |               |
| Single                               | 317 (65.5)    |
| Married                              | 167 (34.5)    |
| **Religion**                         |               |
| Islam                                | 154 (31.8)    |
| Buddha                               | 228 (47.1)    |
| Hindu                                | 24 (5)        |
| Others                               | 78 (16.1)     |
| **Education level**                  |               |
| Secondary education and below        | 163 (33.7)    |
| Tertiary education and above         | 321 (66.3)    |
| **Type of residence**                |               |
| Urban                                | 343 (70.9)    |
| Rural                                | 141 (29.1)    |
| **Occupation**                       |               |
| Student                              | 122 (25.2)    |
| Working                              | 362 (74.8)    |
| **Smoking status**                   |               |
| Smoker                               | 71 (14.7)     |
| Non-smoker                           | 413 (85.3)    |
| **Monthly income**                   |               |
| <RM 1000                             | 26 (5.4)      |
| RM 1000–RM 2000                      | 89 (18.4)     |
| RM 2001–RM 3000                      | 174 (35.9)    |
| >RM 3000                             | 195 (40.3)    |
| **Expenses for cosmetic products (monthly)** |           |
| <RM 50                               | 86 (17.8)     |
| RM 50–RM 100                         | 137 (28.3)    |
| RM 101–RM 200                        | 167 (34.5)    |
| >RM 200                              | 94 (19.4)     |
| **Sleeping time (per day) (h)**      |               |
| 4–6                                  | 273 (56.4)    |

(Continues)
improve the appearance of the facial features of both men and women. This is consistent with the study of Handriana et al (2020), who indicated that some women were unaware that they were unhappy with their facial features until they came across cosmetic products made for those features. Similarly, they stated that there is currently a product for every feature of the face, and with more innovation and technology, the products are becoming more invasive and moving toward having semi-permanent to permanent features.\textsuperscript{19}

However, this is contrary to the projected perception and attitude which the adult consumers have toward the cosmetic products. This is consistent with the study of Alwhaibi et al (2020), which indicates that the cosmetic users have very limited knowledge on the ingredients of the products which they use.\textsuperscript{20} The users also have very little knowledge of the effects which these products have on their skin. Cosmetic products are mainly made from chemical ingredients which often have negative side effects due to reactivity and the use of synthetic materials. This is consistent with the study of Haque et al (2018), which indicates that the presence of chemically adverse ingredients in cosmetic products is prevalent especially in counterfeit products that are infiltrating the market.\textsuperscript{21}

### TABLE 2  Knowledge of Malaysian adult consumer toward cosmetic products (N = 484)

| Questions                                                                 | Strongly disagree N (%) | Disagree N (%) | Uncertain N (%) | Agree N (%) | Strongly agree N (%) |
|--------------------------------------------------------------------------|-------------------------|----------------|----------------|-------------|----------------------|
| Ingredients stated on the product label can be misleading                | 16 (3.3)                | 37 (7.6)       | 193 (39.9)     | 127 (26.2)  | 111 (23)             |
| Branded cosmetic products have good quality                             | 4 (0.8)                 | 13 (2.7)       | 94 (19.4)      | 213 (44)    | 160 (33.1)           |
| The price of cosmetic products in Malaysia is affordable                 | 53 (11)                 | 46 (9.5)       | 132 (27.3)     | 179 (36.9)  | 74 (15.3)            |
| The effects of cosmetic products are proven by scientific studies        | 23 (4.8)                | 15 (3.1)       | 237 (48.9)     | 132 (27.3)  | 77 (15.9)            |
| Natural cosmetic products are better than chemical ones                  | 9 (1.9)                 | 17 (3.5)       | 228 (47)       | 149 (30.7)  | 81 (16.7)            |
| Some of Cosmetic products have side effects                             | 2 (0.4)                 | 54 (11.2)      | 301 (62.2)     | 98 (20.2)   | 29 (6)               |
| Cosmetic products have expiry date                                      | 26 (5.4)                | 62 (12.7)      | 239 (49.4)     | 105 (21.6)  | 53 (10.9)            |
| Sharing cosmetic products with family members/ friends can transmit bacterial infection | 19 (3.9)                | 42 (8.7)       | 282 (58.3)     | 131 (27)    | 10 (2.1)             |
| Sharing cosmetic products with others increases the chance of contracting COVID-19 | 0 (0)                   | 35 (7.2)       | 386 (79.8)     | 41 (8.5)    | 22 (4.5)             |
| Cosmetic products should be disinfected regularly                        | 1 (0.2)                 | 24 (4.9)       | 167 (34.5)     | 236 (48.8)  | 56 (11.6)            |

### TABLE 3  Attitude of Malaysian adult consumer toward cosmetic products (N = 484)

| Questions                                                                 | Strongly disagree N (%) | Disagree N (%) | Uncertain N (%) | Agree N (%) | Strongly agree N (%) |
|--------------------------------------------------------------------------|-------------------------|----------------|----------------|-------------|----------------------|
| Use cosmetic product because it enhances my beauty and appearance         | 7 (1.4)                 | 60 (12.4)      | 115 (23.8)     | 243 (50.2)  | 59 (12.2)            |
| Obtain good skin condition rather than to know the side effects          | 39 (8.1)                | 46 (9.5)       | 169 (34.9)     | 104 (21.5)  | 126 (26)             |
| Inappropriate use of cosmetics causes rashes, skin darkening and wrinkles | 5 (1)                   | 23 (4.8)       | 227 (46.9)     | 113 (23.3)  | 116 (24)             |
| Past experiences influence my purchasing of cosmetic products.            | 41 (8.5)                | 82 (16.9)      | 162 (33.5)     | 132 (27.3)  | 67 (13.8)            |
| Buy natural cosmetic products if the price is inexpensive                | 11 (2.3)                | 48 (9.9)       | 129 (26.7)     | 168 (34.7)  | 128 (26.4)           |
| Prefer to use natural cosmetic products                                  | 2 (0.4)                 | 31 (6.4)       | 210 (43.5)     | 118 (24.5)  | 123 (25.4)           |
| Believe the information on the product label                             | 37 (7.6)                | 54 (11.2)      | 265 (54.8)     | 87 (18)     | 41 (8.4)             |
| I prefer to use 70% alcohol for sanitizing my cosmetics                   | 28 (5.8)                | 59 (12.2)      | 249 (51.4)     | 101 (20.9)  | 47 (9.7)             |
| Use cosmetic products with halal certification                           | 8 (1.7)                 | 17 (3.5)       | 131 (27)       | 269 (55.6)  | 59 (12.2)            |
| Use halal cosmetic products because the products have good quality        | 32 (6.6)                | 45 (9.3)       | 173 (35.7)     | 162 (33.5)  | 72 (14.9)            |
Our findings indicate that the customers are aware that there is a risk of having rashes, irritated skin, and dark marks due to the use of poorly manufactured cosmetic products. This is a side effect of some synthetic products which have high reactivity with human skin being used in the production of cosmetics.\textsuperscript{22} However, this seems to be the only deterrent for customers using the cosmetic products which they can lay their hands only. This is supported by the studies of Atari et al (2017) reveal that despite knowing of these adverse

| Characteristic          | Perception score mean |  | Attitude score mean |  |
|-------------------------|-----------------------|--|---------------------|--|
|                         |                       | \textit{p} |                       | \textit{p} |
| Gender                  |                       |           |                       |           |
| Male                    | 26.2                  | 0.019\textsuperscript{*} | 24.3                  | 0.003\textsuperscript{*} |
| Female                  | 34.5                  |           | 37.1                  |           |
| Age (years)             |                       |           |                       |           |
| 18–35                   | 33.8                  | 0.0001\textsuperscript{*} | 37.5                  | 0.002\textsuperscript{*} |
| 36–50                   | 42.3                  |           | 44.3                  |           |
| ≥51                     | 29.1                  |           | 32.2                  |           |
| Ethnicity               |                       |           |                       |           |
| Malay                   | 40.1                  | 0.015\textsuperscript{*} | 42.6                  | 0.004\textsuperscript{*} |
| Chinese                 | 36.5                  |           | 32.3                  |           |
| Indian                  | 33.4                  |           | 33.6                  |           |
| Others                  | 32.9                  |           | 32.8                  |           |
| Marital status          |                       |           |                       |           |
| Single                  | 34.5                  | 0.04\textsuperscript{*} | 39.7                  | 0.135 |
| Married                 | 41.3                  |           | 40.1                  |           |
| Religion                |                       |           |                       |           |
| Islam                   | 38.8                  | 0.157     | 44.5                  | 0.02\textsuperscript{*} |
| Buddha                  | 39.4                  |           | 42.7                  |           |
| Hindu                   | 39.2                  |           | 36.2                  |           |
| Others                  | 37.9                  |           | 34.3                  |           |
| Education level         |                       |           |                       |           |
| Secondary education and below | 26.6  | 0.004\textsuperscript{*} | 30.4                  | 0.001\textsuperscript{*} |
| Tertiary education and above | 35.9 |           | 43.5                  |           |
| Type of residence       |                       |           |                       |           |
| Urban                   | 36.4                  | 0.001\textsuperscript{*} | 44.7                  | 0.001\textsuperscript{*} |
| Rural                   | 23.1                  |           | 33.2                  |           |
| Occupation              |                       |           |                       |           |
| Student                 | 39.3                  | 0.006\textsuperscript{*} | 40.8                  | 0.001\textsuperscript{*} |
| Working                 | 21.4                  |           | 31.4                  |           |
| Monthly income          |                       |           |                       |           |
| <RM 1000                | 28.3                  | 0.01\textsuperscript{*} | 39.2                  | 0.317 |
| RM 1000–RM 2000         | 31.7                  |           | 39.8                  |           |
| RM 2001–RM 3000         | 35.2                  |           | 40.1                  |           |
| >RM 3000                | 39.4                  |           | 41.3                  |           |
| Expenses for cosmetic products (monthly) |   |           |                       |           |
| <RM 50                  | 40.3                  | 0.004\textsuperscript{*} | 36.5                  | 0.001\textsuperscript{*} |
| RM 50–RM 100            | 30.1                  |           | 42.3                  |           |
| RM 101–RM 200           | 36.7                  |           | 32.9                  |           |
| >RM 200                 | 39.8                  |           | 43.2                  |           |

* Statistically significant (\textit{p} < 0.05)
side effects, there are still users who prefer to use the products and look for way to counter the side effects rather than entirely discarding the cosmetic products.23

There is also a high level of uncertainty among participants that sharing of cosmetic products can lead to the spread of bacterial infection and increase the chance of contracting COVID-19. The cases of illnesses and spreading of bacteria through sharing of cosmetics is popular and has been investigated by a previous research which studied how publicly accessible samples in a cosmetic product store in the United Kingdom contributed to the spread of shingles. This is similar to the findings of Butschke et al (2016), which revealed that consumers were least likely to consider the hygienic implications of using the products and were more inclined to find out how they would like the appearance and texture of these products on their skin, though this is slightly changing due to alertness of the high contagion level of the coronavirus.24 In the wake of the COVID-19 global pandemic, it is essential to note how the disease is contagious and mostly transmitted from person to person by inhaling tiny droplets and through shared surfaces. Cosmetics constitute one of the most common surfaces which touch the face, eyes, and mouth of an individual; thus, they can be considered as a surface to be wary of in the context of transmission of the global pandemic. Recently, cosmetics scientist and experts reported that plastic makeup tubes, bottles, and compacts can be a concern for transmission of the virus as the virus could live on these plastic and metal cases for up to 72 hours. Therefore, public is advisable to avoid sharing cosmetics along with having regular sanitizing of cosmetic products to reduce the risk of microbial infection.16

Moreover, the age group which had higher perception and attitude was the 36–50 years, which contrasted with the popular expectation that younger population would use cosmetic products more. This would suggest the onset of increased self-consciousness and body dysmorphia in people as they age.25 They become more conscious of their features and are increasingly critical of their looks. This leads to the manufacturers of cosmetic products to prey on these insecurities and push products which would falsely address these body image issues.26 The issue of body dysmorphia and cosmetic product usage is interlinked, and either issue tends to be fueled by the other. Therefore, this is a point of discussion where the reliance of cosmetic products to counteract the effects of aging can be investigated in the adult and growing populations.27

The present study also showed there was significantly higher rate of single people who use cosmetic products than those who were married. The use of cosmetic products is often used to gain attention of the opposite sex and to be generally considered as an attractive person. This notion is supported by the study of Pu (2020), who found that there was a higher reliance on the use of cosmetic products by those who were aiming at attracting a life partner than those who are already married. Married people often need to portray a conservative image; thus, they would be sparing and modest with their use of cosmetics.28 However, another study indicated that married people have a higher attitude and perception of cosmetic products, which would suggest that they take their time to have sufficient product knowledge and consider the effects it would have on their livelihood before they spend money on cosmetic products.26,29

The income levels of people who spend much on cosmetic were also significant. There were varied categories of income levels, and there was a fairly even distribution among those who spend money on buying cosmetic product. Therefore, this shows that cosmetic products are purchased by all the people along the income spectrum.30 While this may suggest that cosmetic products are a necessity for any person despite their income, it also indicates the variety of options from which customers can buy their products. This is made possible by cheap products which cater for the lower-income groups and high-end products which cater for the higher income population.

This proved by the current study where most of respondents agreed that branded products have good quality. There is a belief that the branded cosmetic products which have higher prices are better and make the users to appear more beautiful and good-looking than what they are. This idea, according to, is fueled by the marketing campaigns and use of influential people in modeling the branded cosmetic products. However, there has been a negative psychological reaction due to the close of beauty salons and spas amid COVID-19 pandemic, leading to the increase of informal salons and cosmetic sharing, despite any expertise knowledge. Therefore, this asserts how attitude influences the consumption of even branded products, rather than actual knowledge of the production composition.14

The focus on aesthetics and appearance overrides the consideration of the composition of products within the cosmetics industry.31 The customers indicate that as long as they have an impressionable appearance, they can bear any mild side effects which the products may impose on them. There is little effort by both customers and the producers to share the information on the ingredients which they use in production. According to Brooks (2017), there is evidence that the adverse reactions which customers have from the use of cosmetics use often emanates from the lack of knowledge ingredients and their effects when they react with human skin.32

Furthermore, the use of cosmetic products in the current study was noticed to be higher in urban residents rather than rural residents. The use of cosmetics in urban areas is often fueled by the mass marketing communication which is done for cosmetic products, and this drives consumers to purchase more cosmetic products.33 The media communication and aggressive marketing tactics in the urban areas shape the knowledge of customers into viewing cosmetics as an essential part of their lifestyle, therefore influencing them to buy. In the rural areas, the usage of cosmetic products is lower, though the population, especially women, do care about their beauty and

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**Table 5** Correlation between perception and attitude

| Correlation                  | r   | p    |
|-----------------------------|-----|------|
| Perception with attitude    | 0.72| <0.001*|

*Value is significant: p < 0.05
appearance. However, due to limited access to the mass media channels of communication they are less likely to succumb to marketing ploys or have themselves buying products because they have seen their demonstrated effect to be very appealing.

The influence of religion on the attitude of customers toward cosmetic products is also recognized in this study. The study was among Malaysian consumers where Islam is the main religion and it greatly influences the lifestyle choices of its devout followers. However, most of the respondents in this study were Buddhists, yet the preference for halal-certified products was higher, which sheds insight into how the Malay Muslim majority dictates Malaysian culture and norms in a way that affects preferences across all religions. Customers indicate that they prefer halal-certified products, and they perceive them to be of a higher quality than competing products. According to Khan et al (2020), the impact of halal certification on customer knowledge and attitude is evident in the purchasing behavior of the customers and how they perceive them.

Another rising trend in the production and distribution of cosmetic products is the use of natural ingredients. Natural ingredients are proven to have less allergens and adverse reactions on skin among cosmetic product users. This makes these cosmetic products which are made using natural ingredients to be more preferable and considered to be more effective by the consumers. However, this may be slow in adaptation because, as discussed before, there is still more concern on the appearance and aesthetics of the cosmetic products more than the composition. Among the respondents, nearly half of them strongly agree and agree that they prefer natural cosmetic products, and this proportion increases to 60 percent when asked if they would prefer natural cosmetic products if they were inexpensive. This sheds light of the cost–benefit analyses of cosmetics users as it suggests that the aesthetic benefits of synthetic cosmetics could outweigh both the economic and health costs of such products, while the health benefits together with the aesthetic benefits of natural cosmetic products may not outweigh the economic cost. While there may be varied levels of perception, the usage of cosmetics remains high which suggests that attitude plays a superior role than perception. Despite having limited level of perceptions on cosmetics, consumers would have a positive attitude toward them which would encourage usage and consumption.

Within the context of the COVID-19 pandemic, there is need to raise awareness that the virus is possible to be spread through the sharing of cosmetics among infected parties. The virus is communicable and attacks the respiration system; therefore, it can be spread through sharing cosmetic products which would have come in contact with an infected person. This is a rising concern of the spreading of the virus through sharing of cosmetics, especially given that there is a significant impact population which is asymptomatic. This could be averted by stressing on the use of rubbing alcohol to thoroughly sanitize products even when there is less likelihood that they will be shared with anyone, as a precautionary measure.

5 | LIMITATION AND FUTURE STUDY

The current study was only limited to cosmetics users to have a user-centric result, instead of generalized results which include non-cosmetics users. While a comparison with non-users of cosmetic products has not been made, the study would be reflecting user-centric results that can be used as a basis for further study.

6 | CONCLUSIONS

The attitude and perception of Malaysian adult customers of cosmetic products are limited and require more attention. It is recommended to encourage more awareness on cosmetic product composition by integrating these initiatives into the purchasing process. When customers buy the cosmetic products, they could be given vital information in simple ways which will enable any user, despite their level of knowledge to grasp the information regarding the composition of their purchases. Meanwhile, in the wake of the COVID-19 pandemic, it is essential to note that cosmetic products can be probably a potential carrier of the virus and can lead to the spread of the virus when users share the cosmetic products with an infected user. This calls for more stringent hygiene standards through sanitizing cosmetic products and eliminate them from being a source of contagion.

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CONFLICT OF INTEREST

The authors have declared no conflicts of interest for this article.

AUTHOR CONTRIBUTIONS

AHM and BARH designed the study. AHM and AB conducted, analyzed data, and drafted the study. AB and JD proofread the study. AB and JD reviewed and edited the drafted study. All Authors state that they had complete access to the study data that support the publication.

ETHICAL STATEMENT

The ethical approval to conduct the study was obtained from Monash University Human Research Ethics Committee (Project ID: 2020–25746) before the distribution of questionnaires. The confidentiality and privacy of all respondents were assured as only the researchers were able to access the collected data for academic purposes.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.
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