What Factors Influence Local Female Consumers in Making Facial Skincare Choices? Evidence from Penang, Malaysia

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Abstract

Although the Malaysian skincare products market possesses a bright prospect and its market size is generally expanding, however, the market is largely dominated by imported cosmetic products. This situation is distressed when the serious trade imbalance in the industry is coupled with the aggravating and disproportionately export and import growth. Hence, this study attempts to investigate what influence the local female consumers in making facial skincare choices that may be neglected by the local skincare manufacturers. A total of 360 female respondents aged above 20 years old are interviewed in the study by applying non-probability random sampling. The feedback given is then descriptively analysed and regressed in a model to provide a decent statistical finding. Independent variables of the regression model are the factors of age, marital status, monthly income, content, price, brand, daily face wash, facial mask, facial treatment, and monthly expenses. The result has shown that the factors of content, price, brand, facial treatment, facial mask, income factor and monthly expenses on facial skincare products or services are positively correlated to total expenses on facial skincare products. Meanwhile, the factor of the daily face wash is negatively correlated to total expenses on facial skincare products. The study has found that mutualism occurs between facial skincare products and facial services. Thus, it is recommended that the local facial skincare manufacturer should work closely or collaborate with the local beauty salons, skin specialist clinics and facial treatment centres as well as pharmacies to promote their products to the customers so as to increase the exposure of products and their market shares.

Keywords: Cosmetics, Daily Face Wash, Facial Mask, Facial Treatment, Regression, Trade Imbalance

Introduction

Global sales of cosmetics or beauty products industry are impenetrable by economic fluctuations, except during the severe economic recession – like the pandemic of Covid-19. Nevertheless, cosmetic is believed to retain stable sales due to emerging market in both women and men. The growth in the cosmetic market is caused by the ageing population as women and men nowadays are chasing after youthful and glowing appearances. The population over 60 years old is projected to reach 2.09 billion by the year 2050. The life expectancy for women is expected to reach 86.3 years old in 2050 as compared to 82.8 years old in 2005. The projected increment for men in the corresponding period is from 78.4 years old to 83.6 years old. Thus, the share of the elderly in the cosmetic industry is on the rise, which encourages the growth of the cosmetic industry (Reuters Editorial News, 2018).

Notwithstanding that the cosmetic industry has been growing promptly, the Asian cosmetic market seems to be leading the trend. As Asia Pacific market value has reached more than US$ 70 billion, the second-highest market value after the Western European market (Hassali, Al-Tamimi, Dawood, Verma, & Saleem, 2015).

In Malaysia, the National Pharmaceutical Regulatory Agency (NPRA) has defined cosmetic product as "any substance or preparation intended to be placed in contact with various external parts of the human body (epidermis, hair system, nails, lips, and external genital organs) or with teeth and the mucous membranes of the oral cavity, with a view exclusively or mainly to cleaning them, perfuming them, changing their appearance and/or correcting body odours and/or protecting them or keeping them in good condition". The cosmetic industry in Malaysia is growing well both locally and internationally due to the great demand for cosmetic products. However, the Malaysian cosmetic industry is facing world competition, especially from the neighbouring strong competitors that exhibit different comparative advantages. The UN Comtrade database (2021) shows that from 2009 to 2020 the average export growth of the Malaysian cosmetic industry (HS3304) is less than the average import growth (1.05 < 1.10), suggesting that the development of the Malaysian cosmetic industry is not impressive and triggered by the trade deficit. Furthermore, the trade deficit is generally getting larger from year to year which the trade deficit of US$ 134 million in 2009 has worsened to US$229 million in 2020. It is worth mentioning that the trade deficit accounted for more than US$300 million in 2018 and 2019 (the historical high of US$330 million in 2019), then the amount went down due to the outbreak of Covid-19 that the Malaysian government subsequently announced several movement control orders (MCOs) from March 2020 until mid-2021. Regardless of the external factor, this is indeed not a good sign for the Malaysian cosmetic industry where the domestic demand is more toward imported products rather than domestic products. The situation could be getting worse if nothing or fewer efforts have been done to ameliorate the demand for local cosmetic products.

In thinking about why this study focuses on facial skincare, it is essential to understand the importance of the products in the cosmetic industry. The cosmetic industry produces thousands of types of products every year. Of many cosmetic products, skincare is the largest category in the industry and the face cream segment holds the largest share of the market (Grand View Research, 2020). Global Data's report (2020) also proclaims that skincare was the largest sector, with value sales of US$470 million in 2019. At the same time, Bhandalkar (2020) also states that the Malaysian skincare products market size was valued at US$805 million in 2019 and is expected to surge up to US$1,288.7 million by 2027, registering a compound annual growth rate (CAGR) of 8.1 percent from 2021 to 2027. Nevertheless, it would be quite embarrassing if such an aspiring projected market size is going to be dominated by imported cosmetic products. Hence, this study attempts to investigate what influences Malaysian female consumers in making facial skincare choices (ex: sunscreen, whitening, moisturizer, or any combinations).

Literature Review

Demand refers to the number of goods and services willing to be paid for by consumers at certain prices. Price is a payment made by the consumer of a unit of good or service; while the total number of units purchased at the price willing to be paid by the consumer is known as quantity demanded. An increment in the price of goods or services generally leads to a lower quantity of goods or services demanded. Alternatively, a decrease in price results in a higher quantity demanded, thus the inverse relationship between price and quantity demanded is recognised as the law of demand, for the assumption behind the demand curve is no other economic factors other than product's price changes. This assumption refers to ceteris paribus

where other economic factors are not being held constant, the law of demand is not necessarily upheld (OpenStax Economics, 2016).

Changes in the general determinants of demand (such as income, prices of related goods, tastes and preferences, and expectations), resulting in changes of quantity demanded with respect to price, could shift the entire demand curve. For instance, an increase in income could unnecessarily accompany the rise in quantity demanded. The rationale behind this is due to the classification of goods into two types: normal goods and inferior goods. As income rises, the quantity demanded for inferior goods may fall, while the quantity demanded for normal goods may rise. Despite consideration of inferior goods and normal goods, particular consumers may differ from each other. Nevertheless, income is a substantial factor during the decision-making process and generalizations.

The interaction of a particular good with other goods in the marketplace is isolated hence the price of related goods have specific classifications in economics: complement goods and substitute goods. Complement goods refer to additional goods that are consumed with a given good. Demand for complementary goods is positively correlated with the prices other goods. On the other hand, substitute goods refer to goods a consumer consumes in replacement of a given good. Demand for substitute goods is negatively correlated with the pricing of other goods. The tendency of alteration of tastes and preferences over time due to the affection of other users is the source of marketing departments in influencing consumers' preferences. As such, demand has a positive correlation with the more preferred product. In reality, consuming daily face wash, facial mask, and having facial treatment are those ordinary indecisive behaviours between complement and substitute goods and services for facial skincare products. Everyone has projected that the Covid-19 pandemic has brought a great impact on consumers' perceptions of cosmetic products, however, Choi, Kim, & Lee (2022) have stated that while the makeup products are negatively impacted by the pandemic, global consumers still perceive skincare as an important aspect during the pandemic. In fact, the spread of pandemic has a positive impact on skincare products. Daily face wash refers to the daily facial cleanser for all skin types that does not contain the compounds or agents of sunscreen, whitening, and moisturizer. The daily face wash is a normal face hygiene practice using a milder cleanser to maintain the skin health by mechanical removal of sebum and dirt (Nitiyarom, Banomyong, & Wisuthsarewong, 2022). Studies have shown that facial wash products remained to be consumers' principal choice when expenses on skincare products are made and are measured to explore the differences by types of cosmetic consumers (Naganathi & Mahalakshmi, 2016; Mansor, Ali & Yacob, 2010). The facial mask is a condensed product commonly made from mineral clays, moisturising agents, skin softeners, aromatherapy oils, botanical extracts, and other advantageous elements. Typically, it is known as a beauty treatment for the face. There are several sorts of masks available in the market which are: clay-based masks, cream masks, gel masks, Alginate (al-gin-ate) masks, Paraffin wax masks, and Modelage (mod-a-LAHJ) masks. It is one of the important variables in cosmetic and facial skincare research (Mansor et al., 2010; Milady, 2012). Besides, Choi et al. (2022) has also stated that interest in masks has a positive relationship with interest in skincare products, such as cleansing products.

Besides, facial treatment is also an important variable in research. Facial treatment is also a beauty treatment for the face, and sometimes medical care may be given to a patient for an illness or injury. Facial treatment could maintain facial skin health by sanitising perfectly, improving blood circulation, relaxing nerves and initiating skin glands as well as metabolism through facial massage. Other than that, rectifying particular facial skin conditions, such as dryness, oiliness, comedones, ageing lines, and minor acne conditions are also parts of the facial treatment demanded by consumers. Consumers' skin tone texture and appearance could be enhanced if the facial treatment is performed regularly (Mansor et al., 2010; Milady, 2012).

Consumers determine the acquisition of goods with the highest marginal utility, or the most value gained – a sum of both tangible and intangible benefits and costs to consumers. The customer value triad, which is defined as the value of a good being determined by a combination of price, quality, and service. Price is defined as the value of the product at which consumers are willing to exchange, trade or receive in the form of a service or a product benefit (Kokoi, 2011). Therefore, price is usually measured by Pearson's correlation coefficient to estimate the strength of a linear relationship between two variables which are price and consumer buying behaviour (Hossain, M.T.B. & Lim, 2016). Theory of purchasing behaviour points out that price is one of the factors that influences consumer's purchasing decisions, and a higher product price indirectly indicates a higher quality product when compared to a lower product price. This assumption is proven by a study whereby most females, especially in the age group of 40 to 60 years old, believe that more expensive products are better quality products (Kokoi, 2011).

Content is determined as one of the major factors in influencing consumers' purchasing decisions as most consumers tend to examine products' ingredients before purchases are made (Gilitwala & Nag, 2020; Rani & Krishnan, 2018; Latha, 2017). Thus, content is measured to know the level of concern of consumers about the content inside the cosmetics product that they are using (Mansor et al., 2010). Despite a study that has shown that content examined by consumers does not influence facial skincare product purchasing decisions (Jothi, 2015). Nonetheless, female consumers are more preferable towards natural cosmetic products, for instance, herbal cosmetic products or green products instead of chemical-based products (Gilitwala & Nag, 2020; Junaid & Ahmed., 2013; Gan, Wee, Ozanne, & Kao, 2008). This is more applicable for elder women who are aged between 40 and 60 years old as compared to younger women who are aged from 20 to 35 years old (Kokoi, 2011).

The brand depicts a type of product manufactured by a particular company under a particular name. It refers to propound from an existing source yet corporations endeavour in building a feasible brand image with vigorous, pleasing and peculiar brand associations (Gilitwala & Nag, 2020; Kotler & Keller, 2012). In addition, a brand is an insight for consumers when making consumption decisions, as a brand is one of the major factors which influences consumer consumption decisions (Boonmangmee & Methavasaraphak, 2020; Rani & Krishnan, 2018; Mansor et al., 2010) . Hence, the brand is measured to know the level of concern of respondents about the brand of cosmetics products that they are using. Moreover, the Pearson value is usually used to test the correlation coefficient between branding towards cosmetics usage (Mansor et al., 2010). A positive significant relationship is discovered between brand and consumer consumption decision due to superior image brand tends to be lower product perception risk and have positive feedback from consumers (Anjana, 2018).

Methodology

This study is a primary research, obtaining the primary data through a questionnaire interview. A non-probability convenient sampling approach (in which the sample is taken from a group of people easily reachable) is applied in conducting the questionnaire interview in Penang. Two locations, Universiti Sains Malaysia main campus and Island Glade commercial shop lots, have been selected for conducting the questionnaire interview. Besides, the study of Faul, Erdfelder, Buchner, and Lang (2009) with the application of a statistical power analysis (GPower3.0) and the proposed typical sample size for social studies of human behaviour by Sudman (1976) are both referred to determine the sample size required for the study. The questionnaire of the study is distributed to a total of 360 respondents aged above 20 years old.

Descriptive analysis is conducted to summarise the general behaviour and characteristics of respondents. While regression analysis is conducted to investigate what

influences Malaysian female consumers in making facial skincare choices. A regression model is stated as follows:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \ldots + \beta_n X_{ni} + \ldots + \varepsilon$$

where Y is the dependent variable referring to the six-month expenses of the respondent on the selected facial skincare products (sunscreen, whitening, moisturizer, or any combinations), X is the independent or explanatory variables hypothesised to influence the dependent variable, β denotes the coefficients of the explanatory variables, i denotes the ith respondent, n denotes n^{th} explanatory variable and ε denotes stochastic error term.

After reviewing the previous studies, several explanatory variables are selected to study their impacts on the expenses of selected facial skincare products (Table 1). For the independent variable, using the 6-month basis in measuring the expenses of the selected facial skincare products is in accordance with the purchasing behaviour of respondents. Most of the respondents stated that the selected products are usually purchased every several months, while only a small number of respondents state that they purchase the products almost every month due to their eventful outdoor activities. To apply the abovementioned theory and concept in the section of literature review, this study has selected income, daily face wash, facial mask, facial treatment, and other expenses (the expenses besides spending on the selected facial skincare products) as the economic demand factors to examine their impacts on consumer consumption of the selected facial skincare products; while content, price, and brand of the selected facial skincare products are the product factors applied. Age, marital status, and income of respondents represent the characteristics of respondents and socio-economic factors are also considered in the study.

Table 1: Description of Variables

Variables	Measurement
Dependent variable:	
Six-month expenses on the selected facial skincare products (sunscreen, whitening, moisturizer, or any combinations), Y	Ringgit Malaysia (RM)
Independent variables:	
Age, X_1	Years
Marital status, X_2	1 if the respondent is married; 0 otherwise.
Monthly income, X_3	1 if the respondent has more than RM2,500 monthly income; 0 otherwise.
Content, X_4	1 if the content of the product is the concern of respondent; 0 otherwise.
Price, X_5	1 if the price of the product is the concern of respondent; 0 otherwise.
Brand, X_6	1 if the brand of product is the concern of respondent; 0 otherwise.
Daily face wash, X_7	1 if the respondent consumes the daily face wash products; 0 otherwise.
Facial mask, X_8	1 if the respondent consumes the facial mask products; 0 otherwise.
Facial treatment, X_9	1 if the facial treatments are performed to the facial skin of respondent; 0 otherwise.
Other expenses, X_{10}	Monthly, Ringgit Malaysia (RM)

Source: Authors

An ordinary linear regression model is considered ideal only if the model is free from statistical and stability issues. Therefore, this study i.e., primary research using cross-sectional data, could be suffered from the heteroskedasticity issue (the error term of a regression model does not have a constant variance). Heteroskedasticity often occurs in data sets in which there

is a large disparity between the largest and smallest observed values of the dependent variable (Stundenmund, 2017). The major consequence of having heteroskedasticity is the regression output tends to be biased, leading to unreliable hypothesis testing and confidence intervals. In essence, heteroskedasticity causes the regression to produce incorrect standard errors for the coefficients of explanatory variables and t-scores (Stundenmund, 2017). Hence, the Breusch-Pagan test is generally used in statistical diagnostic testing to detect heteroskedasticity in a regression model. The null hypothesis and alternative hypothesis are:

H_0 = There is no heteroskedasticity in the model
H_A = There is heteroskedasticity in the model

The regression output is accepted if the null hypothesis is not rejected. Otherwise, using White's heteroskedasticity-consistent standard errors is one of the options to rectify the issue of heteroskedasticity when the null hypothesis is rejected.

Results and Discussion

The demographic profiles and perceptions of respondents are depicted in Table 2. There are four factors for the demographic profile and perception of respondents. The demographic profile of respondents shown includes the factors of age, marital status, ethnicity, and income; whereas the perception of respondents highlighted are the selected facial skincare products consumed (sunscreen, whitening, moisturizer, or any combinations), determinants of product choice, other facial skincare products and services consumed, and a list of other facial skincare products and services consumed.

As depicted in Table 2, the factor of age is categorised into 5 categories (below 30, 30-39, 40-49, 50-59, 60 & above). Nearly two-thirds of the respondents (67.9 percent) are below 40 years old. By scrutinising the percentage of respondents into age groups, the respondents are mainly those aged 30-39 years old (36.9 percent), followed by below 30 years old (31 percent), 40-49 years old (23.8 percent), 50-59 years old (7.4 percent), and 60 years old & above (0.9 percent). The factor of marital status is categorised into only 2 categories (single and married). This study categorises the marital status of widow and divorce into single. The respondents are mainly those who are married (61 percent), while the rest are single (39 percent). The study's ethnicity distribution is designed to resemble the Penang ethnicity population, with both the Chinese and Malay ethnicity populations accounting for 46 percent, and the Indian and other ethnicity populations accounting for 8 percent.

The occupation of respondents comprise various fields or industries, such as business and administrative executives, health professionals, information technology and communication professionals, plant and machine operators, legal and cultural professionals, and others. Two-thirds of the respondents are working women, while housewives and students account for one-third of the total respondents. This study narrows the focus to the income level of respondents. As shown in Table 2, the income level is categorised into 6 categories (below RM1000, RM1000 to RM2499, RM2500 to RM4999, RM5000 to RM7499, RM7500 to RM9999, RM10000 & above). Nearly half of the respondents (56 percent) earn below RM2500, and the number of respondents becomes lesser as each category, as indicating a typical income pyramid (DOSM, 2019). By looking into detail, the respondents are mainly those with the income below 1000 (33 percent), followed by RM2500 to RM4999 (30 percent), RM1000 to RM2499 (23 percent), RM5000 to RM7499 (10 percent), RM7500 (3 percent) and RM10000 & above (1 percent).

Table 2: Summary of demographic profiles and perceptions of respondents

Factors	Categories	Percent
Age	Below 30	31.0
	30 to 39	36.9
	40 to 49	23.8
	50 to 59	7.4
	60 & above	0.9
Marital status	Single	39.0
	Married	61.0
Ethnicity	Malay	46.0
	Chinese	46.0
	Indian & others	8.0
Income	Below RM1000	33.0
	RM1000 to RM2499	23.0
	RM2500 to RM4999	30.0
	RM5000 to RM7499	10.0
	RM7500 to RM9999	3.0
	RM10000 & above	1.0
Selected facial skincare products consumed (sunscreen, whitening, moisturizer, or any combinations)	Yes	87.0
	No	13.0
Criteria for product selection	Content	19.9
	Price	15.2
	Brand	13.6
	Promotion/ Discount	12.3
	Friend	11.7
	Advertising	11.5
	Family member	6.5
	Salesperson	5.6
	Packaging	2.8
	Others	0.7
Other facial skincare products and services	Yes	92.0
	No	8.0
Types of other facial skincare products and services	Daily face wash	44.1
	Facial mask	26.1
	Facial treatment	15.1
	Traditional facial practice	7.6
	Oral supplement for facial skin health	6.7
	Others	0.4

Source: Authors

This study is concerned with the consumption of the selected facial skincare products (sunscreen, whitening, moisturizer, or any combinations), and has found that 87 percent of the total respondents consume these products (Table 2). The respondents were asked about the criteria used in selecting the facial skincare products. The criteria listed are content, price, brand, promotion or discount, friends, advertising, family members, salesperson, packaging, and other reasons. The selection of the criteria is identical to other related studies (Boonmangmee & Methavasaraphak, 2020; Rani & Krishnan, 2018; Milady, 2012; Mansor et al., 2010) . The respondents are allowed to select more than one criterion. Out of 315

respondents who consumed facial skincare products, 19.9 percent of them perceive content as an important criterion when selecting facial skincare products, followed by price (15.2 percent), brand (13.6 percent), promotion or discount (12.3 percent), friend recommendation (11.7 percent), and advertising (11.5 percent). Packaging surprisingly does not show the importance in the study (2.8 percent). Besides using moisturizer, sunblock, and skin lightening, 92 percent of the total respondents also consume other facial skincare products and services, such as daily facial cleansers, facial masks, facial treatment, traditional facial practice (like using herbs), oral supplements for facial skin health, and others. Most of the respondents are using daily face wash (44.1 percent) and facial masks (26.1 percent) frequently. Some even have facial treatment (15.1 percent) when they need deep cleansing or special treatment for their facial skin problems. Respondents seldom reporting using oral supplements (collagen, honey, and others) for facial skin health (6.7 percent). The respondents seldom purchase the selected facial skincare products (sunscreen, whitening, moisturizer, or any combinations) every month because these products they consume can last for a few months. Hence, the expenses on the selected facial skincare products are expressed on a 6-month basis. Instead, monthly costs include other expenses on facial skincare products and services (daily face wash, facial mask, facial treatment, traditional facial practice (like using herbs), oral supplement for facial skin health, and others). Descriptive analysis is not able to answer what truly influence or have the relationships with the local female consumers in making facial skincare choices, hence further analysis (regression analysis) is necessary for clarification.

This study investigates the factors affecting expenses on the selected facial skincare products (sunscreen, whitening, moisturizer, or any combinations) by using an ordinary least square regression model. After the regression output is provided, the Breusch-Pagan test is conducted to test heteroskedasticity. This result shows that the null hypothesis of no heteroskedasticity is rejected. Therefore, the model is rectified by using White heteroskedasticity-consistent standard errors and covariance. The model is finalised as shown in Table 3. The adjusted R square is 0.40, indicating that the factors in the model explain 40% of the variation in Y (Table 3). Out of ten variables, eight variables (income, content, price, brand, normal facial cleansing, facial mask practice, facial treatment, and other expenses) have significantly affected the expenses on the selected facial skincare products.

Monthly income is the only socio-economic factor significantly affecting the expenses on the selected facial skincare products. The relationship between the variables is positive, implying that the probability of a consumer consuming the facial skincare products increases by 17 percent if she earns more than RM 2499. From the economic perspective, the products are considered normal goods. This finding corresponds to the previous studies that indicate that female consumers with higher monthly incomes spend more on cosmetic products as compared to females with lower monthly incomes (Junaid & Ahmed, 2013).

After the discussion on the socio-economic factor, product-related factors are next discussed. All the product-related factors (content, price, and brand) are found to positively and significantly affect the expenses for the selected facial skincare products. If a consumer feel safe about the content, the likelihood of her purchasing facial skincare products increases by 59%. The finding is identical to the finding of Kokoi (2011). The researcher said that women between 40 and 60 years old prefer cosmetic products including facial skincare products that are made from natural ingredients more than younger women. It is because they believe the products made from natural ingredients are safer compared to other chemical-based products. On the other hand, the probability of a consumer consuming facial skincare products increases by 25 percent, if she is concerned about the price of the product. This finding is supported by the finding of Kokoi (2011). A general consumer's perspective on the price of facial skincare products is that the higher the price, the better the quality of the product. This

implies that every single facial skincare product has its own targeted consumers by price, and the consumers themselves take note of the price of the facial skincare products they usually consume and other higher-priced products. Consumers may switch to the higher-priced product if it is on promotion and the price is similar to the price of the product they usually consume. Therefore, price strategy is always an important factor to improve the sales of facial skincare products. Also, branding is important as well. If a consumer cares about the brand, her likelihood of purchasing facial skincare products increases by 19%. This finding is in line with a previous study, which found that brand is one of the major factors influencing consumer consumption decisions (Boonmangmee & Methavasaraphak, 2020; Rani & Krishnan, 2018; Mansor et al., 2010) . Consumers usually have the intention to stick to certain brands of facial skincare products. They usually try on a certain brand of product that they feel confident about it and continue to stick on it if they are satisfied with the product; otherwise, they will keep looking for other brands products until they found a product that they prefer the most or suitable for their facial skin.

Besides, the skin skincare routine also plays a vital role in the study. Factors of facial cleansing, facial masking, and facial treatment are found to significantly affect the expense of the selected facial skincare products. Both the factors of facial mask and facial treatment have shown a positive effect (implying the two factors play the roles as complementary goods), yet the variable of facial cleansing has shown a negative effect (implying the role of a substitute good the factor plays). The probability of a consumer consuming facial skincare products increases by 21 percent, if she is also having the facial treatment at the same time. Many people are facing different facial skin problems like acne, acne scar, blackheads, enlarged pores, dark eye circles, dry skin, rosacea, sunburn, and wrinkles due to various reasons. They believe that facial treatment is one of the effective ways to maintain and improve their facial skin health rather than only using facial skincare products. Besides, the facial mask also has a positive relationship with the expenses of facial skincare products. The probability of a consumer consuming facial skincare products increases by 24 percent, if the facial mask is used in her daily life. This study discovers that the facial mask is a complementary product of the selected facial skincare products (sunscreen, whitening, moisturizer, or any combination). However, the factor of facial cleansing is found to have a negative correlation with the expenses of facial skincare products. The probability of a consumer consuming facial skincare products decreases by 42 percent, if she is using the daily face wash. Respondent reviews have indicated that the negative correlation could be due to i) some selected products they consume already consisting of the cleanser formula, thus intentionally using the daily face wash is unnecessary; and ii) practice of facial treatment is a substitution of daily face wash. These two reviews from the respondents have shown the atypical consumer behaviour towards substitution product – daily face wash when expenses on the selected facial skin skincare products are performed.

Other expenses show a positive relationship with the selected facial skincare products expenses (sunscreen, whitening, moisturizer, or any combinations). If other expenses increase by 1 percent, the expenses of the selected facial skincare products will increase by 41 percent. The great changes in the selected facial skincare products are due to the measurement of the 6-month basis expenses of the selected facial skincare products. For instance, the respondents averagely spend RM91 each month on the facial products and services (except sunscreen, whitening, moisturizer, or any combinations products), but they spend an average of RM431 for every 6 months on the sunscreen, whitening, moisturizer, or any combinations products. The increased expenses of both variables could have happened if the consumers face facial skin problems (such as ache, eczema, dry skin, darkened skin, and others). This phenomenon has resulted from the affordable cost and an effective way that most of the consumers urge to maintain or enhance their facial skin health.

Table 3: Result of the Regression Model (with Heteroskedasticity Rectified)

Variable	Coefficient	Std. Error	T-Statistic	Prob.
Constant	0.925747	0.217390	4.258471	0.0000*
Age	0.002163	0.004493	0.481456	0.6305
Marital status	0.070165	0.096880	0.724246	0.4694
Income	0.167586	0.082051	2.042470	0.0419*
Content	0.588194	0.085198	6.903852	0.0000*
Price	0.250284	0.070450	3.552651	0.0004*
Brand	0.185825	0.072453	2.564773	0.0107*
Daily face wash	-0.420372	0.183205	-2.294547	0.0224*
Facial mask	0.242248	0.091163	2.657300	0.0082*
Facial treatment	0.205399	0.091604	2.242259	0.0256*
Other expenses	0.406306	0.086069	4.720694	0.0000*

* Significant at 5 percent level
Source: Authors

Conclusion

The market size of skincare products in Malaysia is generally expanding every year; however, the domestic demands (especially for face cream products like sunscreen, whitening, moisturizer, or any combinations) are met by imports from the United States, Japan, Thailand, and other countries. Understanding the factors that influence Malaysian female consumers in making facial skincare choices could serve as a reference for the local industry to penetrate the domestic market and reverse the situation they encountered. The study shows that the factors of content, price, brand, facial treatment, facial mask, income and, other expenses on facial skincare products and services are positively correlated to expenses on the selected facial skincare products (sunscreen, whitening, moisturizer, or any combinations). This study proposes that the local facial skincare manufacturer should work closely or collaborate with the beauty salons, skin specialist clinics, and facial treatment centres as well as pharmacies to promote their products to the customers. The mutualistic relationship or win-win situation between the facial skincare manufacturers and the skin service providers can be mutually beneficial for both parties by further enhancing their sales and market shares. On the other hand, the factor of daily face wash has a negative correlation with the selected facial skincare products expenses.

This study would also like to highlight that the working ladies with an income of at least RM2500 and above, should be targeted as the potential consumers because with the increased income they could spend more on the selected products. At the same time, they also constantly apply the facial mask and seek facial treatment for their facial skin healthy instead of using normal daily face wash products. Although the ladies seem to be the skincare enthusiast or obsessed with skincare, they are also the wise consumers researching the product thoroughly from different aspects (content, price, and brand). Nevertheless, limitations of the study are observed as the study is limited to a particular area – Penang as well as the face cream segment of the cosmetic products. To expand the study, a broader geographical research area could be adopted where the survey distribution can be enlarged to more regions in Malaysia to provide more precise and intact reference data for the facial skincare industry in Malaysia as a whole. Immense study scope in Malaysian cosmetic products should be also adopted for a more comprehensive analysis.

Acknowledgement

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