

## MILLENNIAL'S BEHAVIOUR AND ATTITUDE TOWARDS NATURAL COSMETICS: A CASE STUDY IN UNIVERSITI MALAYSIA TERENGGANU

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**Abstract:** Investing in natural cosmetics contributes to the sustainability of natural resources in two ways – the emission of less harmful by-products, and the conservation of ecosystems through sustainable harvesting of resources. Therefore, studying students' (millennials') behaviour and attitude towards these products may help improve awareness-raising approaches on their benefits for local market acceptance. A study was conducted in Universiti Malaysia Terengganu (UMT), Malaysia with the aim to understand the current perception and habits of UMT students towards natural cosmetics and their readiness to convert to natural cosmetics. 521 responses were collected through an online survey that focused on three themes: Stage of Change, Decisional Balance Inventory, and Product Knowledge and Perception. The study found that most of the respondents (79%) claim to be using natural cosmetics, while only nine percent are not considering at all. Eighty-six percent of those users practice label reading habits although most respondents could not distinguish natural cosmetics from synthetic ones if solely based on personal knowledge and appearance of product. This proves that product design does influence customers' purchasing behaviours. Moreover, results indicate that existing natural cosmetic users are quite likely to maintain the habit, while others are still indecisive. Meanwhile, label reading habits are quite likely to be maintained by many respondents. Hence, based on results, businesses should acknowledge that there is a demand in natural cosmetics among Malaysian millennials, and should increase their promotional activities, improve product design and affordability in order to grab consumers' attention to switch from synthetic to natural cosmetics.

**Keywords:** natural cosmetics, youth consumerism, sustainable lifestyle, eco products, Malaysian millennials

### Introduction

Natural cosmetics are products that contain plant-based ingredients and avoid harmful chemicals (Belova & Eilks, 2015). Commonly, people perceive cosmetics to be just make-up. However, according to the U.S. Food and Drug Administration (2016), cosmetics also comprise of cleansers such as shampoos, toothpastes, and facial cleansers. Hence, both men and women of a wide age range are consumers (Annis, 2011), and contribute to the market. Furthermore, it is a hot and growing topic in Malaysia, especially among millennials,

since the consumption of cosmetics is high and rising (Swidi *et al.*, 2010; Marketing Magazine Asia, 2017). Thus, it shows that the type of products made and the choices of consumers matter. Also, businesses prioritizing the safety and health of their consumers should use this opportunity to do their part in sustaining our ecosystems by producing natural and more eco-friendly cosmetics.

The importance of considering natural cosmetics lie in the current harmful effects of synthetic ones and the potential encouragement for the conservation

of ecosystems as resources for natural ingredients. Among the common ingredients of synthetic cosmetics causing detrimental impacts to our environment and health are parabens (Eriksson *et al.*, 2008), micro plastics (Leslie, 2014), and parfum (Lange *et al.*, 2014). On the other hand, there are also brands that use natural cosmetics as an opportunity to conserve ecosystems, such as Rahua and Kahina Giving Beauty. While benefitting Rahua oil from the unguahua nut for hair care products, the brand commits to preserving the people and culture of the Amazon Forest (Rahua Blog, 2015). On the other hand, Kahina Giving Beauty is dedicated to protecting the argan forest in Morocco while utilizing its service (Isler, 2017). This implementation could be the ideal practice for cosmetic brands to invest in the contribution of ecosystem sustainability and being more eco-friendly.

A playing factor of this healthier practice of cosmetic brands is positive support from their consumers. However, past research show that some communities are still reluctant to adopt the habit of consuming more natural and eco-friendly products. This is due to various reasons, such as not realizing the potential to making a change through these products (Belova and Eilks, 2015), high product loyalty to current (synthetic) products (Annis, 2011; Isaacs, 2015), inadequacy of information and promotion through media campaigns (Annis, 2011), expensive price (“4 in 5 Consumers Think Eco-Friendly”, 2015), etc. It is vital to explore this matter, as consumer lifestyles, mindset, and actions give a significant amount of effect towards the environment. As emphasized by the United Nations’ Sustainable Development Goals (SDG3, SDG11, SDG12, SDG14, SDG15), the inclusiveness of communities is greatly prioritized. Thus, as a step towards environmental change, this study was carried out to assess the behaviour and attitude of a community (the students of Universiti Malaysia Terengganu)

towards natural cosmetic products and their readiness to change from synthetic to natural cosmetics.

## **Materials and Methods**

The study was a quantitative research, where questions were closed-ended and executed via online survey. The studied population was Universiti Malaysia Terengganu students, and the sample was obtained using mix-aided sampling (combination of convenience and quota sampling; 50 students per school to avoid bias). The target sample size was 400 respondents (confidence level 95%) out of 11,000 students. The survey was open to all students aged 18 to 30 years old, regardless of marital status, origin, race, religion, and other demographics.

### **Information Groups**

The constructed survey questions revolved around the following information groups: 1) Regular Use of Cosmetics; 2) Regular Use of Natural Cosmetics; 3) Active Reading of Cosmetic Labels; and 4) Perception and Knowledge towards Products and Ingredients.

### **Measures and Frameworks**

To determine respondents’ current habits in usage of natural cosmetics and reading labels, the first section of questions was constructed based on the Stages of Change Trans-theoretical Model (Prochaska & DiClemente, 1983). According to the framework, there are five possible Stages of Change, namely Pre-contemplation (PC), Contemplation (C), Preparation (P), Action (A) and Maintenance (M). The questions were referred to and derived from Organic Cosmetics Attitudes and Behaviours of College Women by Carmen K. Annis (2011). Below is the interpretation of the measures and scales used for the possible stages of change of respondents.

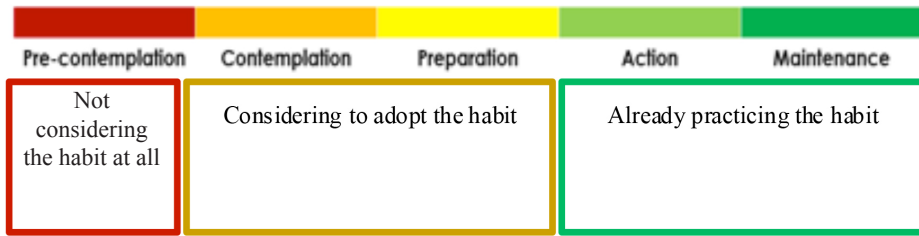


Figure 1: Measures used for stage of change transtheoretical model outcomes (current stages in practicing a habit)

The second section of questions was constructed based on the Decisional Balance Inventory (Janis & Mann, 1977), where respondents were asked to rate on a Likert scale of 1 to 5 regarding certain advantages and disadvantages that may or may not affect their decision-making process when using or buying natural cosmetics, and reading labels of cosmetic products (1 is “not important at all, I do not think about this when...” and 5 is “very important, it affects my decision making when...”). Hence,

the outcomes of this section may indicate how inclined respondents are to switch or maintain the habit (based on the difference between total average scores of advantages and disadvantages) and determine the important positive or negative factors that influence their decision in practicing the habit (based on the highest scores between advantages and disadvantages). Below is the interpreted measure of scores used to determine the inclination of respondents to switching or maintaining a habit.

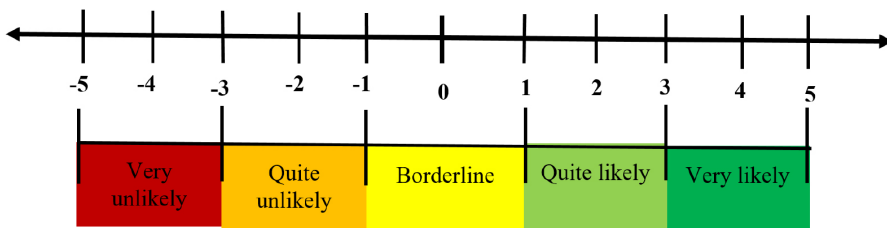


Figure 2: Decisional balance inventory outcome (measures used to indicate respondents' inclination to switch or maintain a habit based on the differences between the scores for advantages and disadvantages)

The last section of the questionnaire evaluated respondents based on their knowledge or perception towards cosmetic products and its (harmful) ingredients, despite “natural-looking” product appearance. The questions were “yes or no” questions on whether the “product is natural

and/or safe for health and the environment”. Then, respondents were categorized based on the number of correct answers obtained for each product category (0-2 correct: low score; 3-4 correct: high score). The questioned products can be categorized into three types of products (4 products for each category) (Table 1).

Table 1: Description of products chosen and their categories

Product Description	Category
Synthetic-looking design with harmful ingredients	Product is What it Appears to Be
Natural-looking design with safe ingredients	
Synthetic-looking design with safe ingredients	Product is Not What it Appears to Be
Natural-looking design with harmful ingredients	
Ambiguous design, with either safe or harmful ingredients	Ambiguous

**Data Analysis**

The survey outcomes were analyzed using statistical methods, performed through Microsoft Excel. Percentages of the fraction

of respondents for each category were used to identify which fractions are dominant. Then, chi-square test was used to determine whether there are significant differences between those fractions of respondents.

**Results**

A total of 521 respondents were collected. However, due to the scope of the study, only responses that were provided by regular cosmetic users were analysed (72%). The proposed quota of 50 students per school was also not met (M, A) ( $\chi^2 = 241.523$ ,  $df = 2$ ,  $p < 0.05$ ).

**Stage of Change**

According to Figure 3, 79 per cent of regular cosmetic users use natural cosmetics (M=52%, A=27%) ( $\chi^2 = 241.491$ ,  $df = 2$ ,  $p < 0.05$ ). The remaining cosmetic users are either still considering to switch to natural products (twelve per cent) (P=5%, C=7%) ( $\chi^2 = 52.362$ ,  $df = 2$ ,  $p < 0.05$ ) or not considering at all (PC=9%) ( $\chi^2 = 68.953$ ,  $df = 2$ ,  $p < 0.05$ ).

Percentages of Cosmetic Users: Natural Cosmetic Usage

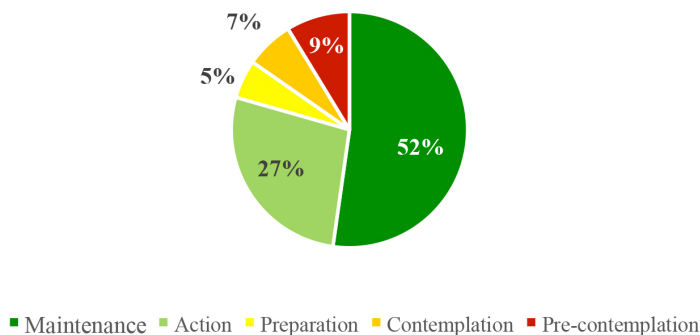


Figure 3: Percentages of cosmetic users that use natural cosmetics

Meanwhile, referring to Figure 4, a good majority of natural cosmetic users

do practice label reading habits (86%) (M=66%, A=20%) ( $\chi^2 = 288.035$ ,  $df = 2$ ,  $p < 0.05$ ).

Percentages of Natural Cosmetic Users:  
 Read Cosmetic Labels

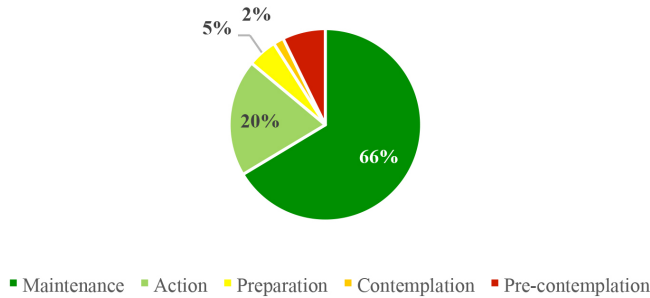


Figure 4: Percentages of natural cosmetic users that read cosmetic labels

**Decisional Balance Inventory – Readiness to Change to Natural Cosmetics**

Based on the Decisional Balance Inventory Scores for Usage of Natural Cosmetics according to Stage of Change (Table 2), the average respondents already using natural cosmetics (M, A) gained positive difference between scores (1.818 and 1.705 respectively), which shows potential for the habit to be maintained. However, for the other Stages of Change (P, C, PC), the difference between scores were within the range for borderline potential to change

(0.013, -0.005 and 0.001 respectively), which is between -1 to 1. This indicates the acknowledgement of both advantages and disadvantages of using natural cosmetics among majority of respondents. Hence, for non-natural cosmetic users, there is a 50-50 potential for either change or reluctance to switch to natural cosmetics. Furthermore, chi-square test shows significant difference between each stages of change's difference between scores (M  $\chi^2 = 1.749$ ; A  $\chi^2 = 1.412$ ; P  $\chi^2 = 0.681$ ; C  $\chi^2 = 0.716$ ; PC  $\chi^2 = 0.704$ ,  $df = 4$ ,  $p < 0.05$ ).

Table 2: Decisional balance inventory for usage of natural cosmetics

Stage of Change	Advantages Score	Disadvantages Score	Difference between Scores
Maintenance	4.932	3.114	1.818
Action	4.917	3.212	1.705
Preparation	4.785	4.772	0.013
Contemplation	4.415	4.420	-0.005
Pre-contemplation	4.297	4.296	0.001

**Factors Influencing Decision to Switch to Natural Cosmetics**

With reference to the total average scores for Positive Factors (Table 3), most respondents are influenced to switch to natural cosmetics when their surrounding community show positive feedback and support towards it (Benefit to Others). The second major influence in decision making

is the acknowledgement of the benefits of natural cosmetics towards health. These factors overshadow the other factors, which are Benefit to Environment, Self-Approval, Peer-Approval and Convenient Accessibility. Meanwhile, according to Table 4, most respondents also agree that the expensive price, followed by inconvenient accessibility to natural cosmetics results in reluctance to switch to these products.

Table 3: Average scores for positive factors influencing decision for usage of natural cosmetics

Stage of Change	Average Scores for Positive Factors					
	Benefit to Health	Benefit to Others	Benefit to Environment	Self-Approval	Peer Approval	Convenient Accessibility
Maintenance	4.4	4.3	4.1	4.3	3.9	3.5
Action	4.5	4.4	4.2	4.5	3.9	3.2
Preparation	4.3	4.2	4.3	4.0	3.7	3.3
Contemplation	3.9	4.0	3.9	3.4	3.2	4.0
Pre-contemplation	3.8	4.16	3.72	3.54	3.39	2.79
Total	20.9	21.06	20.22	19.74	18.09	16.79

Table 4: Average scores for negative factors influencing decision for usage of natural cosmetics

Stage of Change	Average Scores for Negative Factors					
	Expensive	Loss to Others	Insignificance to Environment	Self-Disapproval	Peer Disapproval	Inconvenient Accessibility
Maintenance	3.7	2.2	2.3	1.9	2.4	3.1
Action	3.8	2.2	2.2	2.0	2.5	3.3
Preparation	3.8	2.5	2.6	2.6	3.1	3.4
Contemplation	4.0	2.1	2.4	2.1	2.4	3.2
Pre-contemplation	4.0	2.4	2.6	2.2	2.2	3.4
Total	19.3	11.4	12.1	10.8	12.6	16.4

**Decisional Balance Inventory – Readiness to Change to Reading Cosmetic Labels**

Referring to Table 5, the average outcome for difference between scores in this information group was positive and encouraging. For natural cosmetic users who are already practicing label reading habits (M, A), they are quite likely to maintain this habit (1.624 and 1.09 respectively). Additionally, those in C stage to start reading labels also show potential to adopting this habit (1.1). Other

stages of change (P, PC) have difference in score that fall into the range of scores that are on the borderline in deciding to start the habit (0.838 and 0.848 respectively). However, chi-square test shows that there is no significant difference between the differences between scores (M  $\chi^2 = 0.296$ ; A  $\chi^2 = 9.09E-05$ ; P  $\chi^2 = 0.062$ ; C  $\chi^2 = 0$ ; PC  $\chi^2 = 0.058$ ,  $df = 4$ ,  $p > 0.05$ ). Hence, we can conclude that all stages of change have slight and positive chance to adopt or maintain label reading habits.

Table 5: Decisional balance inventory for reading cosmetic labels

Stage of Change	Advantages Score	Disadvantages Score	Difference between Scores
Maintenance	4.42	2.796	1.624
Action	4.036	2.946	1.09
Preparation	3.942	3.104	0.838
Contemplation	4.134	3.034	1.1
Pre-contemplation	3.792	2.944	0.848

**Factors Influencing Decision to Read Cosmetic Labels**

The survey outcomes (Table 6) show that most respondents are inclined to read cosmetic labels when understanding its

importance for one's health (Benefit to Health), followed by encouragement from surrounding community (Benefit to Others) and acknowledgement of the benefit of this habit towards the environment (Benefit to Environment).

Table 6: Average scores for positive factors influencing decision for reading cosmetic labels

Stage of Change	Average Scores for Positive Factors				
	Benefit to Health	Benefit to Others	Benefit to Environment	Self-Approval	Peer Approval
Maintenance	4.7	4.3	4.5	4.5	3.9
Action	4.4	4.1	4.1	3.5	3.0
Preparation	4.3	4.0	4.0	3.6	3.5
Contemplation	4.3	4.0	3.7	3.7	3.9
Pre-contemplation	4.2	3.7	3.8	3.5	3.2
Total	21.9	20.1	20.1	18.8	17.5

**Product Knowledge and Perception**

Based on Figure 5, generally, approximately 60 per cent of respondents obtained high score for Product is What it Appears to Be ( $\chi^2 = 9.579$ ,  $df = 1$ ,  $p < 0.05$ ). However, for

Product is Not What it Appears to Be and Ambiguous Products, only 12 per cent ( $\chi^2 = 145.69$ ,  $df = 1$ ,  $p < 0.05$ ) and 10 per cent ( $\chi^2 = 162.59$ ,  $df = 1$ ,  $p < 0.05$ ) of respondents respectively obtained high scores.

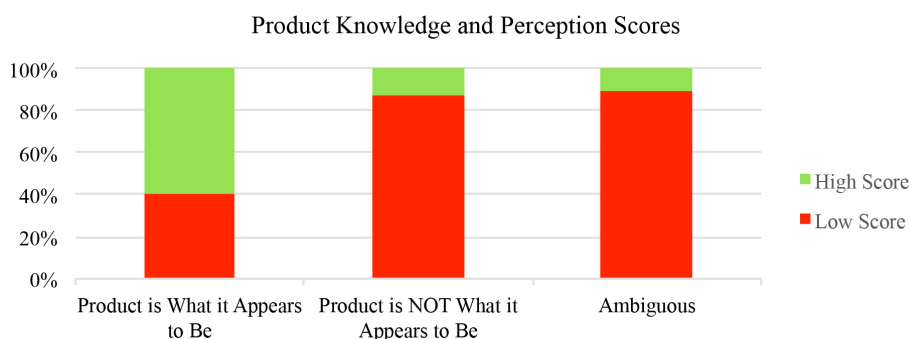


Figure 5: Percentages of general product knowledge scores according to type of products

**Discussion**

**Habits, Perceptions and Readiness to Change**

The dominant fraction of respondents that claim to regularly use cosmetics show that the Malaysian youth may be a

large contributor to this industry, and that cosmetic usage is undeniably a big part of daily lifestyle nowadays. Swidi *et al.* (2010) stated that since the years 1997 to 2010, Malaysians' rate of expenditure for cosmetics and toiletries have increased more than 40 percent and will further



escalate to accommodate to the local demand. Hence, it is crucial to pay attention to this industry, as the ingredients used will heavily influence the type of waste emitted into our environment – whether safe or detrimental. However, most importantly, a practicing community is the element that controls and balances this issue. Market production of safe and natural cosmetics must be complemented by a supporting and well-aware community to ensure long-term environmental sustainability.

Encouragingly, results show that most respondents who are cosmetic users currently choose natural cosmetics. This contradicts the study done by Annis (2011), where most college women were in PC stage and the least of them purchase natural cosmetics. According to the study, the perceived benefits are valued but overlooked when having to go through multiple processes of trial-and-error for effectiveness and price of new natural cosmetics, alongside locating stores with those products. As for this study, the great number of respondents that choose natural cosmetics may be due to the raising awareness about personal and environmental health discussed in social media among Malaysians.

On the other hand, majority of those natural cosmetic users do actually read cosmetic ingredient labels, and regardless of stages of change, they are quite likely to adopt or maintain this habit. This is a rather positive response, especially since past studies show that people are reluctant to read labels. For example, Annis (2011) found that most college women are in PC stage – acknowledging the benefits but still contemplating to adopt the behavior, due to the uncertainty of what ingredients to look for on the label and ingredients panel. Furthermore, Ambak *et al.* (2018) states that only four out of ten Malaysian adults read food labels, which is relatively low as compared to population studies of other countries. Hence, it is only encouraging that

the respondents of this study show positive feedback for this behaviour.

The potential to maintain or adopt both habits is proven through the results of the Decisional Balance Inventory for Usage of Natural Cosmetics and Label Reading Habits, where respondents ranked Benefit to Others, Benefit to Health and Benefit to Environment as the top factors that influence their decisions to adopt both habits. This means that the youth community is likely to switch to natural cosmetics and/or read labels when the people around them discuss about the importance of their consumer preference. In this case, the online community plays a significant role.

The drastic rise in awareness towards the detrimental effects of uncertified cosmetics emerged after several viral online postings show ‘victims’ with health effects ranging from worsened breakouts, eczema to breathing difficulties and kidney failures (Manan, 2015). Furthermore, the online community has recently adopted the trend of discussing environmental issues revolving around conservation of biodiversity, irresponsible mass production, daily consumption of plastics and several others. Malaysian social media influencers often raise these issues and have an effect towards the community’s mindset. A comparable case would be the impact of social media on Malaysian youth towards national voting outcomes (Wok & Mohamed, 2017). Moreover, celebrities such as the well-known, respected actress Maya Karin has been actively sharing her participation in campaigning and conservational activities, alongside her thoughts and environmental issues on her social media page, which is followed by a great amount of support from her young fans.

Despite the mentioned points, there still is a slight chance that non-natural cosmetic users may not want to switch to natural cosmetics. Although they acknowledge the benefits of this habit, they also highly



agree with the disadvantages. These negative elements have high probability in influencing their decision to not adopt the habit, where expensive price, inconvenient accessibility and peer-disapproval are the top three factors. This may be due to the student lifestyle, where cost is always at stake and anything inconvenient is not worth investing in (Leong & Ng, 2014). Also, peer influence enhances these factors and convinces individuals that adopting this habit is wasteful. Nonetheless, respondents will be influenced to change to the positive if their surrounding community encourages the importance of this habit towards their health and environment.

Therefore, to work on the lack of market support for natural cosmetics, we must embrace the fact that Malaysian millennials are prone to follow online discussions and trends. Although some parties find it redundant, it seems like campaigning and viral marketing is the best way to gain attention and spread the significance of this issue (Subramani & Rajagopalan, 2003; Monica & Balas, 2014). Simply, exposure to health and environmental benefits are important factors when adopting to change to organic behaviours (Hall, 2008) and more information results in higher willingness to pay (Leong & Ng, 2014). However, traditional one-way campaigns should be modified to incorporate more discussions that are open, inclusive and relevant, as the youth of today are very outspoken and active. Other than influential individuals (whom are consumers themselves), Lassila (2018) suggests that natural cosmetic companies should follow current trends and engage more with people through social media postings on sustainability, ethical issues, and new product releases to ensure successful marketing. With attractive designs, sharing of relatable information and easy navigation, social media has been proven to have the power to attract new and

maintain loyal customers (Hassan *et al.*, 2016).

On the other hand, behaviours can be further elaborated based on the scores for Product Knowledge, which tests respondents solely on background knowledge and appearance of product. In this section, most respondents, regardless of their Stage of Change for using natural cosmetics and/or reading cosmetic labels, scored high when identifying products that appear as they are (synthetic cosmetics that look like synthetic cosmetics; natural cosmetics that look like natural cosmetics). However, when tested on ambiguous designs and products that do not look as they are (synthetic cosmetics that look like natural cosmetics; vice versa), majority of the respondents scored low. This shows that product design is suggestive of what it is. Product design is a part of promotion and advertising; thus, plain and grey designs (those that appear “synthetic”) may be one of the reasons certain natural cosmetic products are not well-promoted nor attention-grabbing.

For example, Lifu (2012) claims that consumers are more likely to buy products with attractive packaging as it reflects good quality, and it is an easier way for identification. Only a small number of the study's respondents go for product content, rather than appearance. Furthermore, although there is scarce information on whether consumers prefer natural, green or eco-designs on a product, it has been found that an eco-natural environment is an attraction factor for potential customers. For instance, the designs of ecological spaces and natural scenarios in a shopping mall through vegetation and architecture is a commercial factor that attracts customers (Ortegón-Cortázar & Royo-Vela, 2017). Hence, to attract those non-natural cosmetic users into switching to natural cosmetics, product design may be a factor worth investing in.

### ***Study Limitations and Suggestions***

Results may have resulted in bias according to respondents' school as it was not possible to obtain the ideal quota of 50 students per school. Also, a language barrier may have produced misunderstanding of the survey questions as it was in English, and most students were more fluent in Bahasa Malaysia. Furthermore, future studies should explore more on these behaviours and attitudes according to different demographics, such as financial background, state of origin, etc. to develop different approaches in spreading awareness and grabbing consumers' attention according to their different perspectives.

### **Conclusion**

To conclude, the results from this study is very encouraging and positive, as most cosmetics users in Universiti Malaysia Terengganu choose natural cosmetics and practice label reading habits. This indicates that UMT and other student communities has the potential to develop into a green society that practices environmentally friendly behaviours. This is especially possible when the community is exposed to the right materials with suitable and effective approaches. Nonetheless, this study still lacks data on demographics and other possible assessing methods that may explain other influences on students' behaviour and attitude in purchasing or in general. Therefore, future studies should approach this matter from different perspectives to better understand this community. Also, future studies may also focus on other universities or target groups to understand their current perceptions and the suitable methods in sharing about green lifestyle behaviours. Soon enough, we will be able to achieve a green youth community, nationwide.

On the other hand, the outcomes of this study (including data on factors influencing

the decision to use, purchase and read natural cosmetic labels) can be utilized by local natural cosmetic businesses. For our industry to improve social marketing strategies while conserving ecosystems, markets should understand that there is a demand for natural cosmetics among millennials in Malaysia. Thus, this a call of action to invest in this business. Proper investments, research, and development to further improve this business to cater to this student/millennial market should be executed, especially in terms of resources harvesting, product manufacturing and product packaging. Furthermore, it is also important to improve promotion and advertising, especially on product design and promotion on social media. This is to attract and establish relationships with customers, alongside spreading environmental awareness. Moreover, to increase product loyalty within students, product affordability and accessibility should be improved.

Hence, in the long run, when the demand of well-aware and environmentally conscious communities are complemented by the safe production of natural products by supporting markets, we will be able to achieve environmental sustainability, globally.

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### **References**

- 4 in 5 Consumers Think Eco-Friendly Products Cost More "Green". (2015). PR Newswire. Retrieved from <https://www.prnewswire.com/news-releases/4-in-5-consumers-think-eco-friendly-products-cost-more-green-300061649.html>

- Ambak R, Tupang L, Hasim MH, Salleh NC, Zulkafly N, Salleh, R., Ahmad, M.H. & Naidu, B.M. (2018). Who do not read and understand food label in Malaysia? Findings from a population study. *Health Science Journal*, 12(1), 548.
- Annis, C. K. (2011). Organic cosmetics attitudes and behaviors of college women. Ph.D. dissertation. Miami University, Mississippi, United State of America.
- Ayob, A., Awadh, A., Jafri, J., Jamshed, S., Ahmad, H. A., & Hadi, H. (2016). The enlightenment from Malaysian consumers' perspective toward cosmetic products. *Journal of Pharmacy and Bioallied Sciences*, 8(3), 229.
- Belova, N., & Eilks, I. (2015). Learning with and about advertising in chemistry education with a lesson plan on natural cosmetics—a case study. *Chemistry Education Research and Practice*, 16(3), 578-588.
- Eriksson, E., Andersen, H. R., & Ledin, A. (2008). Substance flow analysis of parabens in Denmark complemented with a survey of presence and frequency in various commodities. *Journal of Hazardous Materials*, 156(1-3), 240-259.
- Eze, U. C., Tan, C.-B., & Yeo, A. L.-Y. (2012). Purchasing cosmetic products: a preliminary perspective of gen-y. *Contemporary Management Research*, 8(1), 51–60.
- Hall, M. C. (2008). The marketing of organic products: an instrumental/symbolic perspective. *Journal of Food Products Marketing*, 14(3), 1-11.
- Hall, M., Gough, B., & Seymour-Smith, S. (2012). "I'm METRO, NOT Gay!": a discursive analysis of men's accounts of makeup Use on youtube. *The Journal of Men's Studies*, 20(3), 209-226.
- Hassan, S., Shiratuddin, N., Hashim, N. L., Ab Salam, S. N., & Sajat, M. S. (2016). *Social media as persuasive technology for business: trends, and perceived impact in Malaysia*. Universiti Utara Malaysia. Retrieved from [https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/UUM\\_Social\\_Media\\_Persuasive\\_Technology.pdf](https://www.mcmc.gov.my/skmmgovmy/media/General/pdf/UUM_Social_Media_Persuasive_Technology.pdf)
- Isaacs, S. M. (2015). Consumer Perceptions of Eco-Friendly Products. Ph.D. dissertation. Walden University.
- Isler, E. B. (2017). These 4 Organic Beauty Brands Are Eco-Friendly and Effective. Allure. Retrieved from <https://www.allure.com/story/green-beauty-brands-effective-and-eco-friendly?verso=true>.
- Lange, C., Kuch, B., & Metzger, J. W. (2014). Estrogenic activity of constituents of underarm deodorants determined by E-Screen assay. *Chemosphere*, 108, 101-106.
- Lassila, E. (2018). Social media marketing of natural cosmetic companies in the UK and in Finland: four case companies. Bachelor thesis. Oulu University of Applied Science.
- Leong, G. Y., & Ng, Y. L. (2014). The factors influence consumer behaviour on the purchase of organic products. Undergraduate-Research project. Universiti Tunku Abdul Rahman.
- Leslie, H. A. (2014). *Review of Microplastics in Cosmetics: Scientific background on a potential source of plastic particulate marine litter to support decision-making*. Amsterdam, The Netherlands: VU Amsterdam.
- Lifu, F. L. (2012). An analysis of the effect of product packaging on consumers' buying choice in Calabar Municipality, Cross River State, Nigeria. *Asian Journal of Business Management*, 4(2), 186-191.

- Marketing Magazine Asia. (2017). Gen-Y Shaping Up Beauty Shopping in Malaysia. Retrieved from <https://marketingmagazine.com.my/gen-y-is-shaping-up-savvy-beauty-shopping-in-malaysia/>
- Meet Amazon Beauty's Founders: Fabian Llinguin and Anna Ayers. (2015). Retrieved from <https://rahua.com/us/blog/rahua/>
- Monica, B., & Balaş, R. (2014). Social media marketing to increase brand awareness. *Journal of Economics and Business Research*, 20(2), 155-164.
- Ortegón-Cortázar, L., & Royo-Vela, M. (2017). Attraction factors of shopping centers: Effects of design and eco-natural environment on intention to visit. *European Journal of Management and Business Economics*, 26(2), 199-219.
- Subramani, M. R., & Rajagopalan, B. (2003). Knowledge-sharing and influence in online social networks via viral marketing. *Communications of the ACM*, 46(12), 300-307.
- Swidi, A., Cheng, W., Hassan, M. G., Al-Hosam, A. & Mohd Kassim, A. W. (2010) The mainstream cosmetics industry in Malaysia and the emergence, growth, and prospects of halal cosmetics. In: The Third International Conference on International Studies (ICIS 2010). Kedah: Universiti Utara Malaysia.
- United States Food and Drug Administration. (2016). Are all "personal care products" regulated as cosmetics? Retrieved from <https://www.fda.gov/forindustry/fdabasicsforindustry/ucm238796.htm>
- Wok, S., & Mohamed, S. (2017). Internet and social media in Malaysia: Development, challenges and potentials. In B. Peña Acuña (Ed.), *The Evolution Of Media Communication*. IntechOpen, Rijeka, Croatia.