
**UNIVERSITI PUTRA MALAYSIA**

# *KNOWLEDGE AND PRACTICE ON GREEN PURCHASING OF PERSONAL CARE PRODUCTS AMONG UNDERGRADUATE STUDENTS IN UNIVERSITI PUTRA MALAYSIA.*

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**KNOWLEDGE AND PRACTICE ON GREEN PURCHASING OF PERSONAL CARE PRODUCTS AMONG UNDERGRADUATE STUDENTS IN UNIVERSITI PUTRA MALAYSIA.**

**BY**

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**Thesis submitted in fulfillment of the requirement for the Degree of Bachelor Science (Environmental and Occupational Health) from Faculty of Medicine and Health Sciences, Universiti Putra Malaysia**

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## ABSTRACT

## KNOWLEDGE AND PRACTICE ON GREEN PURCHASING OF PERSONAL CARE PRODUCTS AMONG UNDERGRADUATE STUDENTS IN UNIVERSITI PUTRA MALAYSIA.

**HANA FATEHA BT HASHIM**

**Introduction:** Personal care products (PCP) has been used by all ages including, university students. However, manufacturing companies of PCP are potentially degrading the environment with irreversible impacts because of the higher usage of non-biodegradable resources. Currently, consumers were concern about environmental issues, but they still have a hard time applying green practices while purchasing green products. **Objectives**: The study was conducted to assess the level of knowledge and practice regarding green purchasing of PCP among selected undergraduate students in Universiti Putra Malaysia. **Methodology:** A cross-sectional study was carried out among 276 undergraduate students from five faculties divided into five departments in Universiti Putra Malaysia by multistage cluster sampling. The respondents answered adapted questionnaires consisting of five sections to assess the level of knowledge and practice on green purchase of PCP. Then, the researcher analysed the result of the data by using SPSS version 25.0. **Results and Discussion:** This study showed that most respondents had high knowledge (48.0%) and moderate practice (73.0%). Based on the Chi-square analysis that was conducted, the result showed there was a significant association between gender with knowledge and practice with $p<0.05$, ($p=0.0001$) and ($p=0.004$)) respectively. Furthermore, there was also an association between knowledge and practice ($p<0.05$). **Conclusion:** Ministry of Higher Education and Universiti Putra Malaysia needs to strengthen environmental education among undergraduate universities to create environmental protection and conservation awareness.



**Keywords: Knowledge, practice, green purchase of personal care product, undergraduate student**

## ABSTRAK

### PENGETAHUAN DAN AMALAN PEMBELIAN PRODUK HIJAU PENJAGAAN DIRI DALAM KALANGAN PELAJAR PRASISWAZAH DI UPM

**HANA FATEHA BT HASHIM**

**Pengenalan:** Produk penjagaan diri telah banyak digunakan oleh semua peringkat umur termasuk pelajar universiti. Namun, syarikat pembuatan produk penjagaan diri berpotensi memusnahkan persekitaran dengan memberi kesan yang tidak dapat dipulihkan kerana penggunaan jumlah sumber yang tidak biodegradasi. Kini, pengguna mempunyai sikap yang prihatin terhadap isu alam sekitar, akan tetapi mereka masih sukar untuk mengaplikasikan amalan pembelian produk hijau. **Objektif kajian**: Kajian ini dijalankan untuk menilai pengetahuan dan amalan terhadap pembelian hijau barangan produk penjagaan diri dalam kalangan pelajar sarjana muda yang terpilih di Universiti Putra Malaysia. **Metodologi**: Kajian keratan lintang telah dijalankan dalam kalangan 276 pelajar sarjana muda dari lima buah fakulti yang dibahagikan kepada lima jabatan di Universiti Putra Malaysia melalui kaedah pensampelan kluster pelbagai peringkat. Responden telah menjawab borang soal selidik yang telah diubah suai yang terdiri daripada lima bahagian untuk menilai tahap pengetahuan dan amalan pada pembelian hijau produk penjagaan diri. Kemudian, hasil data akan dianalisis dengan menggunakan perisian SPSS versi 25.0. **Keputusan dan perbincangan:** Kajian ini menunjukkan bahawa majoriti responden mempunyai pengetahuan yang tinggi (48.0%) dan amalan yang sederhana (73.0%). Berdasarkan Chi-square yang dilaksanakan, hasilnya menunjukkan terdapat perbezaan yang signifikan antara jantina dengan pengetahuan dan amalan dengan masing masing memperolehi $p<0,05$, ($p = 0,0001$) dan ($p = 0,004$). Selanjutnya, terdapat hubungan antara pengetahuan dan amalan ($p <0.05$. **Kesimpulan:** Kementerian Pengajian Tinggi dan Universiti Putra Malaysia perlu meningkatkan pendidikan alam sekitar dalam kalangan pelajar universiti bagi memberi lebih kesedaran mengenai perlindungan dan pemuliharaan alam sekitar.



**Kata kunci:Pengetahuan, amalan, pembelian hijau produk penjagaan diri, pelajar sarjana muda**

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| | |
|---|---|
| HDPE | Low-Density Polyethylene Plastics |
| MoHE | Ministry of Higher Education Malaysia |
| PCP | Personal Care Product |

# CHAPTER 1

# INTRODUCTION

## 1.1 Research Background

The challenge facing by societies around the globe has been great concern regarding environmental issues. Thus, this is an important issue to be considered since many choose to ignore these issues. Rapid growth in the human population caused rapid urbanization and development, which leads to increased production of non-biodegradable products. Currently, some people are aware of environmental concerns such as the pollution of waste. Therefore, they realize that their purchases of green products can affect the world. Green purchasing refers to ecologically friendly products or sustainable products that are environmentally harmless (Kilbourne and Pickett, 2008). These products are generally made from natural or recycled materials and have less impact on the ecosystem. Biodegradable products are products that help replenish our earth (Mansvelt, 2011).


Source: Harian Metro, 2020


Source: Berita Harian, 2020

**Figure 1.1: News about Green Products in Malaysia**

Malaysia has recognized the importance of investing in environmental conservation. As a result, people are becoming more aware of environmental issues. The government needs to enhance its initiatives and improved the ecological strategy currently being implemented to encourage individuals to embrace environmentally friendly products. According to Almossawi (2012), promoting green purchase behaviour encourages individuals to buy ecologically friendly products. It primarily depends on increasing green purchase through efficient promotional campaigns, and

marketers also determine the factors of their customers' green behaviour to achieve this goal.

Next, Personal care products (PCP) are one of the by-products of green products. There are some of the main elements that we often see in drug and department stores that are used for health and beauty. PCP includes skincare, haircare, oral care, cosmetics, toiletries, and products for feminine hygiene (Ezlika, Pat, Dilip, and Bang, 2017). Communities in Malaysia used it for personal health, hygiene, or cosmetics (Davis, 2010).

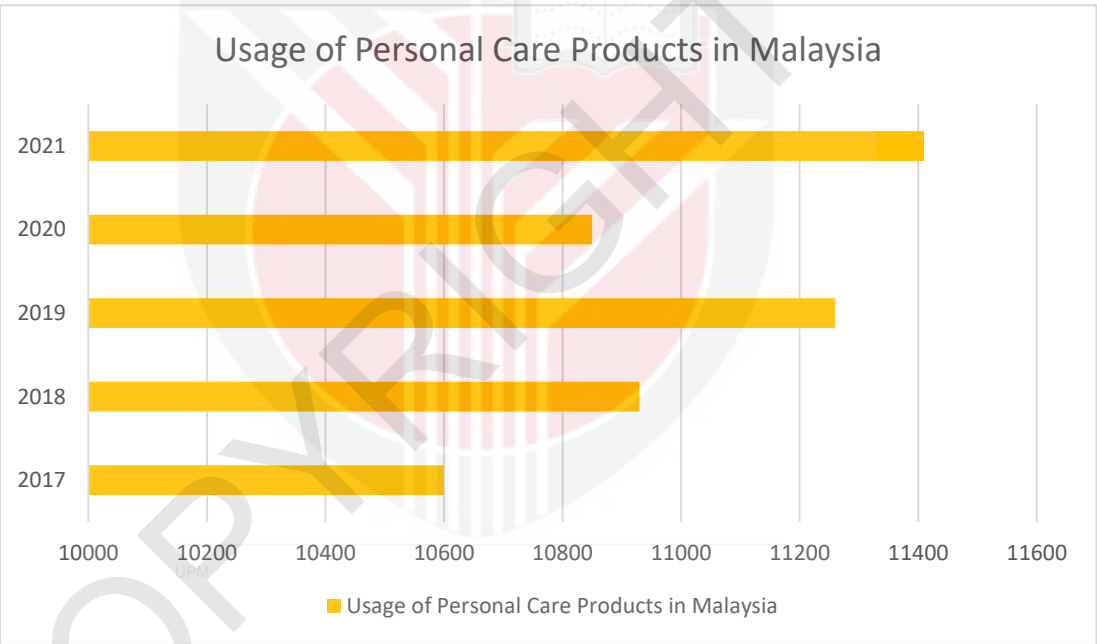



**Figure 1.2: Malaysia Revenue of Personal Care Product (Statistica Research Department, 2021)**

However, most of the packaging used by PCP are plastic which can cause environmental threat. According to JPSPN (2018), as illustrated in Figure 1.1, most of the plastic waste problem in Malaysia was from packaging purposes. It explains the high incidence of plastic packaging discovered in the water, landfills, or the stomachs of marine creatures.

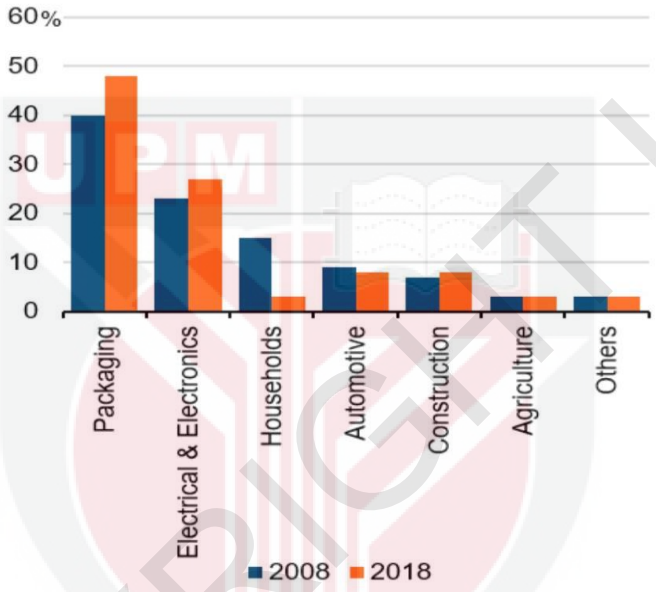



**Figure 1.3: Malaysia Plastic Usage (JPSPN, 2018)**

Many countries have raised awareness of purchasing a green product with more significant environmental benefits for the community. Hence, in Malaysia, the government has taken strong action toward environmental protection. For example, to promote the consumption of eco-friendly goods, the Ministry of Energy, Green Technology and Water (KeTTHA) has been established. In addition, market availability for desired customers of green and environmentally friendly products is being ensured. Green companies such as The Body Shop and Starbucks also bring green products into the market.

## 1.2 Problem Statements

With the increased population in the country, today's rise in PCP has been one of the threats to the environment. The study concerned on purchasing of green products among PCP rather than food and electrical products. The problems regarding the using of PCP was plastic waste disposal and harmful chemical ingredients which can cause environmental pollution and eventually can also affect human such as endocrine disruption and reproductive effect (Srinivasan et al., 2019). The toxic chemical added in the plastic production of PCP can transfer into animal tissue and later will enter the human food chain. Marine organisms consume it, and the toxins they absorb from the water accumulating up the food chain causing seafood potentially hazardous for humans (Earth Day Network, 2018). The existence of microplastics in the stomach of Manila shell sp. Venerupis Philippinarum was proven by one of the studies carried out in the Philippines (Davidson and Dudas, 2016.). Microplastics are a matter of marine pollution since they are tiny, and during the water treatment process, they cannot be filtered out, which then flowed into the marine waterways (Westphalen and Abdelrasoul, 2018).

Next, there is a significant gap between environmental concerns and ecological products. Research by Young et al. (2010) stated that even though the consumer already has a high favorable attitude towards the green purchase, it does not guarantee the actual purchase of the green product. Moreover, a lack of study focuses on the environmental knowledge and practice on green purchasing behaviour, especially PCP in Malaysia (Saleki and Seyedsaleki, 2012). A study was conducted in the Philippines entitled Knowledge, Attitude and Practice and Sources of Information on Safe Cosmetics and PCP among Journalists, but the results cannot

be generalized to the university students since they are in totally different environments. A study was conducted in Universiti Kebangsaan Malaysia, entitled The Level of Environmental Knowledge, Awareness, Attitude and Practices among UKM students. This study shows undergraduate students had a high knowledge level toward environment but shows moderate level on practices that give significance for this study's continual to determine the knowledge and practice level on green purchase of PCP among undergraduate students. The study also aimed to create baseline data regarding the level of knowledge and practice level on green purchase of PCP among undergraduate students in Universiti Putra Malaysia.

## 1.3 Study Justification

Today, green purchasing is becoming more important in ensuring the protection of climate change and other ecological problems. In this study, the researcher decided to focus on consumers of university students because students are the most influential and profitable section of the consumer spending in the green market (Mokhlis, 2009). Total number of undergraduate students enrolled in Malaysia is roughly 1.3 million (Statistic of Higher education, 2019). This number is quite high and can influence them to spending on green products and minimum the PCP waste. Moreover, students are among the consumer concerned about environmental issues because they are exposed to such issues regularly. It also reported that students were aware of environmental concerns, but they had not yet changed in practice. (Lisa. M et al., 2015). Wahida et al. (2004) also reported that environmental concerns and understanding of ecological conservation had increased among society. However, the level of individual engagement in environmental protection activities was still lacking. This study is also expected to encourage students to make more sustainable consumption decisions and purchase toxic-free and environmentally harmless products for their everyday lives.

For this study, according to The Official Portal of Universiti Putra Malaysia in 2020, UPM was selected because it ranked first position in Malaysia as the top university in UI-GreenMetric World University Ranking. UPM also committed in the efforts to become a sustainable green campus. Undergraduate students that being selected are from first year to final year students. The students are being chosen from five faculties, and five departments represent the area of their studies.

## 1.4 Research Objectives

### 1. 4. 1 General Objectives

- To study knowledge and practice on green purchasing of PCP among Undergraduate Students in UPM.

### 1. 4. 2 Specific Objectives

i. To determine the sociodemographic characteristic of UPM students.

ii. To determine the level of knowledge and practice on green purchasing of PCP among UPM students.

iii. To study the association between sociodemographic with knowledge and practice on green purchasing of PCP among UPM students.

iv. To study the association between knowledge and practice on green purchasing of PCP among UPM students.

## 1.5 Hypothesis

1. There is an association between sociodemographic data with knowledge and practice of green purchasing on PCP among undergraduate students.

2. There is an association between knowledge and practice on green purchasing of PCP among undergraduate students.

## 1.6 Conceptual Framework

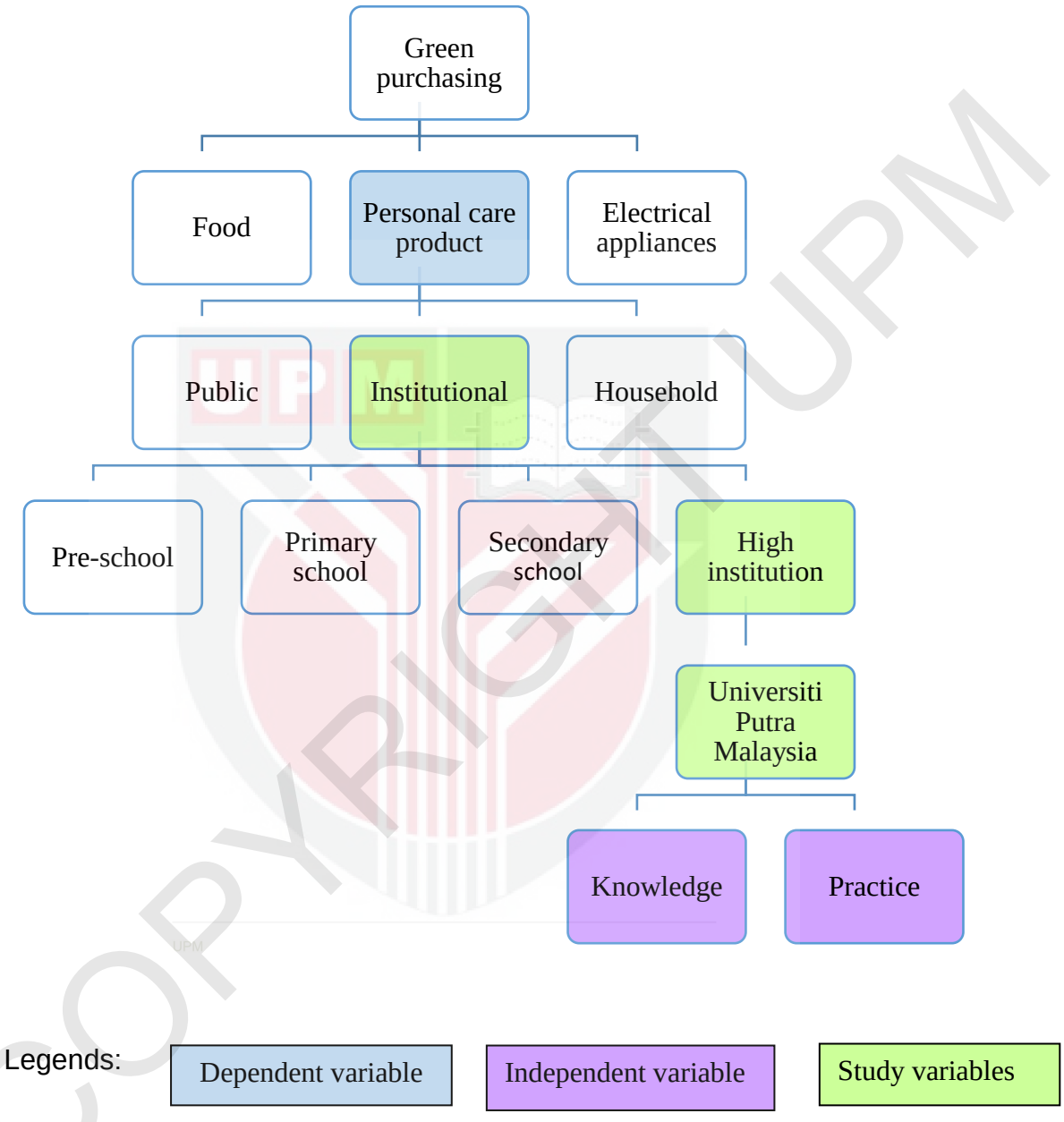



**Figure 1.4: Conceptual Framework of the Study**

## 1.7 Definition of Terms

### 1. 7. 1 Conceptual Definition

- **Personal care product**

PCP is used for all ages, including skin care, hair care, oral care, color cosmetics, deodorants, toiletries, and feminine hygiene products. (Ezlika, Pat, Dilip, and Bang, 2017)

- **Knowledge**

Understanding of information about a subject that you get by experience or study, either known by one person or by people generally (Cambridge, 2020)

- **Practice**

Practice as ‘methods in which they illustrate their knowledge and attitude through their actions’ (Kaliyaperumal, 2004; Mariani & Ruwaidah, 2018)

- **Knowledge and Practice**

Knowledge and Practice show the characteristics in knowledge, behaviour, and the person's conception on the related subject (Sybille,2019; Mariani & Ruwaidah, 2018).

### 1. 7. 2 Operational Definitions

- **Knowledge**

Their knowledge in terms general aspects, ill effects, reuse and practice in terms of usage and disposal were assessed with a questionnaire.

- **Practice**

Practice is defined to the life-long behaviour of the study participants towards green purchasing of PCP. The level of practice will be determined using questionnaire.

- **Knowledge and Practice**

Knowledge and Practice of the study participants towards green purchasing of PCP will assessed using questionnaire.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Green Consumer

Soonthonsmai (2007) stated that green consumers are described as consumers who are concerned with environmental issues. They often have a strong attitude that they are responsible for protecting the environment and thinking about environmental problems. Therefore, green consumers usually buy products that have fewer environmental effects. Renfro (2010) also describes green consumers as people who endorse companies that trade in an environmentally sustainable. They are buying green products and participating in the manufacturing process and environmental protection, and they believe there is a link between product consumption and environmental conservation (Tamer and Popescu, 2016).

### 2.1.1 Green Products Purchasing among Malaysian Consumers

The study by Williams (2014), green products are the product that is not harmful to health and friendly to environment and ecology. Mazar and Zhong (2010) also described green products as those that use recyclable, reduce waste, reduce adverse effects on the environment and produce fewer harmful contaminants. In other words, green products known as environmentally friendly or sustainable products have fewer adverse effects on humans and the environment and, from a social and economic perspective, provide more opportunities for long-term practical

growth. In the development of Malaysia's industry, knowledge of green products is significant. The green products sector has expanded significantly in line with My HIJAU, which is more sustainable under the Malaysian Government's policy to enable local manufacturers, producers, and suppliers to manufacture green products and services. Green products became increasingly popular because it is safer, hygienic and environmentally friendly (Ali, Noraziah, Mohd Azlan, 2012). The Malaysian government proposes various solutions for environmental consumption and preservations. The government should educate Malaysians to adopt sustainable developments, increase the use of products that do not harm the environment, and make the country a safe place for present and future generations to live.

### 2.1.2 Green Product Purchasing among Students

Undergraduate students are described as a young and well-educated population. In most cases, these young individuals make purchases without asking their parents (Brougham, Hershey, & Trujillo, 2011). However, using green products is unusual among students because students' needs for environmentally friendly products are not high on their priority list. Green product prices higher than regular product prices are also a source of concern since they make it difficult for students to satisfy their needs. Students tend to buy items that are less expensive because their income is unstable. Green products' companies face a difficult task in providing environmentally friendly things that are also cost-effective and popular among students. (Nam, Dong, and Lee, 2017).

## 2.2 Impact of Students' Attitude on Environmental Issues and Green Purchasing

According to Lee (2008), environmental attitudes are based on a cognitive assessment of consumers on how they are aware of environmental protection. Their attitude can impact the purchase decision of the individual. Students' environmental attitudes are described as their verbal, behaviour, and motivation regarding ecological issues and their impact on nature (Aminrad, 2009). If students develop a positive attitude toward environmental sustainability and pollution, this will eventually affect consumer attitudes and lead to green consumerism. Beckford, Jacobs, Williams, and Nahdee (2010) claim that attitude is a crucial factor of green product quality. This study supports the findings of a previous study by Paco et al. (2009), which found that consumers' environmental attitude influences their decision to buy a green product, even if it is not a primary motivation for them to buy green items.

Young consumers in Malaysia who act in a greener way claim that government has the basic and necessary responsibility to conserve the environment, even though individuals are highly aware and concerned about their environment (Abdul Wahid, 2000). Abdul Wahid et al. (2002) revealed that every agency has equally important roles in building a positive environmental attitude. Therefore, many businesses on green products have recently begun to stress their environmental obligation through environmentally friendly products created and to keep track of environmental changes.

## 2.3 Factors Contribute Green Purchasing Behaviour among Students

The green purchase behaviour was triggered by several factors, such as culture, value orientation, environmental concerns, knowledge, attitude, and demography (Goh and Wahid, 2015). The study investigates the factors of green product buying behaviours among undergraduate students in Malaysia, resulted in student buying decisions of green products associated with environmental knowledge and social influence.

### 2.3.1 Environment Knowledge

Previous studies were carried out to review community engagement for the environment, particularly students in higher institutions. Previous studies showed that the knowledge, attitudes, and environmental awareness among students in higher institutions in Malaysia are at a reasonable level (Mei, Wai, & Ahamad, 2016). This is in line with the findings by Mohd Helmi et al. (2012). In the context of Malaysia, young Malaysians are aware of the environmental problems in this country. It is consistent with the research done by Ojala (2012) that young adults can be knowledgeable about the issues of the environment. They are also capable of addressing the environmental sustainability challenges of the future.

### 2.3.2 Social Influence

Researchers are open to exploring the impact of friends as a social group on individuals' green behaviour. Social factors can be seen in peer pressure and many others. Ewing (2001) indicated that social influence defined norms that would promote environmental behaviour for consumers. The media effect will be a dominant force shaping green buying behavior with the ease of sharing information across various social media such as Twitter and Instagram, especially for youth. For

example, information received about the awareness of green products through their relatives, discussion in environmental effects, and sharing with the family details about green consumptions (Finisterra do Paço and Raposo, 2008).

Social media has played an important role for individuals to learn about environmental purchasing. If this information received is transferred into practices and, ultimately, social media can influence the purchasing behaviour of consumers towards green products (Arttachariya and Patricia,2010). According to Coulter et al. (2003), social networking and product involvement related to each other. For example, anyone who provides influence and feedback on their purchasing of environmental goods will ultimately affect and change their product, brand choice decisions, and people who are widely sharing information on social media related to environmental activities. Yati et al. (2017) stated that social influence consists of friends and family is very important since it drives the people to encourage them to purchase green products. The younger generation is always gets influenced by their friends to purchase specific products.

### 2.3.3 Environmental Concern

According to Lee (2008), the involvement of consumers in environmental issues is an environmental concern. As for Yeung (2004), environmental concerns represent consumer sympathy towards the environment. Environmental concern is what worries us about the environment, considering the value of self-affection and anxiety. Hence, consumers with environmental concerns are more likely to buy green products than those who are less worried about the environment (Kim and Choi,2005).

Therefore, in this research, it can be inferred that a consumer involved in issues related to the environment most likely purchasing environmental goods. It can also be seen nowadays, most environmental concerns involve PCP. For example, consumers prefer to buy reef-safe sunscreen to prevent harmful chemicals from entering the ocean.

### 2.3.4 Price

Consumers are less inclined to acquire green products if they are more expensive (Blend and Van Ravenswaay, 1999). It illustrates that environmental concerns and knowledge are insufficient to support environmentally friendly products at prices that are somewhat expensive compared to other commercial products. Green products help consumers in the long run and leave fewer environmental footprints. In addition, green product prices, on the other hand, are still seen as unreasonable. Manufacturing costs may be one reason eco-friendly products were more expensive than regular products (Green and Peloza, 2011; Olson, 2013). This is also supported by Eze and Ndubisi (2013), when it comes to purchasing green products, consumers are price sensitive. However, according to a previous study, consumers are more worried about the environmental implications of their purchases (Sammer and Wüstenhagen, 2006). As a result, they are ready to pay a premium price for specific green products. A widespread consumer trend toward accepting higher costs has begun to emerge (Auger et al., 2003; Laroche et al., 2001; DSouza et al., 2007). Considering this, companies can gain a more excellent knowledge of how critical it is to keep green product costs appropriate for a sustainable profit, long-term relationships, and the environment.

## 2.4 Environmental Impact on PCP

PCP was determined as an organic product when it complies with the organic standard by the Guidelines for Control of Cosmetic Products (Schleenbecker and Hamm, 2013). It relates to the control of safety and quality to promote and protect the community. One of the goals of the SDGs is focused on our sustainable consumption and production patterns. Hence, it can be supported by more sustainability-sourced ingredients and materials used during the production and post-production of PCP. Many countries have banned microbead in PCP. During 114$^{th}$ United States Congress, US ban the production of cosmetic rinse-off output on PCP (Microbead-Free Waters Act, 2015). Canada also took action by prohibiting the manufacturing, importing, and selling toiletries containing plastic microbeads on PCP (The Microbeads in Toiletries Regulation,2017). However, there are no regulatory actions in Malaysia yet.

Consumers should use natural PCP without causing harm to the skin. However, some products have been made from synthetic and chemically based. As a result, the chemical reaction in the product will damage consumers and cause severe skin diseases like skin cancer, allergic skin, tumors, and more. According to New Strait Times (May 2017), the Health Ministry's National Pharmaceutical Regulatory Department (NPRA) has warned sellers to stop selling and distributing several PCP-containing scheduled poisons that can harm health. If such chemicals are used for a long time, they will affect the customers. However, according to the Guidelines for Control of Cosmetic Products in Malaysia, they ensure safe products and good quality when choosing and buying their products.

Packaging waste from PCP and cleaning products, such as plastic bags and bottle caps, cardboard, and plastic boxes, should be placed at predefined places by municipal or national legislation, according to (Vranjanac and Spasic, 2017). When cosmetics and PCP are used up, the packaging produces tons of waste, ending in landfills (Girotto G., 2012). According to Dr. Theng Lee Chong, a Malaysian environmental and waste management expert, solid waste generation has resulted in severe issues such as a lack of disposal space, a poor recycling rate (Noor, 2016), contamination (Samah et al., 2013), and littering. As a result, these issues should be addressed at their source. Waste necessitates several financial resources, including the costs of collection, transportation, storage, and treatment (Vranjanac and Spasic, 2017).). The research by Vranjanac and Spasic, 2017 in Serbia, revealed that four categories, plastic packaging had the highest mass percentage (46 %). Glass packaging accounted for 34% of the total packaging waste mass, followed by aluminum packaging (12%) and paper and cardboard packaging (8%).

According to (National Solid Waste Management Department, 2011), the type of plastic resins and their respective symbol codes and classifications fall under number 2, reserved for high-density polyethylene plastics. In contrast, the variety of plastic resins and their respective symbol codes and categories fall under number 1, reserved for low-density polyethylene plastics (HDPE). HDPE is the most commonly used polymer in the United Kingdom (UK), accounting for 20% of all consumer (home) plastic packaging. Due to its chemical resistance, HDPE plastic bottles account for most HDPE plastic packaging (54%) and are primarily used for packaging milk and PCP (WRAP, 2013). However, when these formulations include components that react with others, producing new compounds that reach the human body, the product packaging could be harmful.

## 2.5 Promotional Event as a Medium to Enhance Environment-friendly Purchasing Behaviour

Green marketing involves generating and facilitating any exchanges satisfying human needs so that the satisfaction takes place with minimal environmental consequences (Chen and Chang, 2012). In general, companies that have penetrated green marketing need to advertise and promote their products composed of environmental green features such as organic, environmentally friendly, and capable of recycling their used products.

For a marketer's development to be sustainable, they must address sustainability policy. Environmental obligations, economic sustainability, and socio-cultural sustainability are the three critical goals of this notion for marketers (Harris, Burres and Eicher, 2004). When businesses or groups wish to promote a green event, they must include it in all promotional materials and information they give to the general public, the local community, and the media. According to Dunlap and Jones (2002), for a green event to be successful, all community members must agree on the values that the organization wishes to impart. Students need to be encouraged to buy green products, green businesses must engage in more promotional activities and lower prices to highlight their green credentials.

One of the strategies used to entice customers to buy more or try a product or service is promotion. For instance, a price promotion is a temporary price reduction offered to customers. The feature is that the shop would identify the products or services with a specified percentage or cash saving. Previous research on the

promotion of green products found that shops would see an unexpected gain in sales due to price-conscious shoppers (Smith & Sinha, 2000; Gilbert & Jackaria, 2002)

Following that, in terms of coupon promotions, customers who have received a coupon are entitled to a discount on the product's original price (Ndubisi & Chew, 2006). However, a prior study (Gilbert & Jackaria's, 2002) indicated that coupon promotions have no meaningful influence on consumers' amount of product purchases. This is backed up by Ndubisi and Chew (2006), coupons were also determined to be one of the least used and unpopular promotional techniques by customers. However, according to the findings of Dotson's (2001) study, women are more likely than men to use coupons solely, while adolescents are more inclined to take advantage of bonus packs.

Free samples or trials of green products also can be distributed as part of promotional tools so that customers can try and use the product. Shimp (2003) claimed that a free sample impacted consumer green purchasing decisions. However, Gilbert and Jackaria (2002) found that giving a free sample does not influence consumers to purchase green products. The “Two for the price of one” promotion method is one of the sorts of bonus packs in which customers are offered an additional product at the regular price but in a better package. Consumers would be readily convinced to buy products because there would be no extra cost, and the products would be viewed as greater desirable (Sinha & Smith, 2000). The advertising event might be considered the business's recognition of the necessity of teaching consumers about environmental issues and creating a green culture (Belz and Petttie, 2009).

## 2.6. Theoretical Perspective of Study

### 2.6.1 Consumer Green Purchase Process

The buyer's purchasing process consists of the following five stages according to Kotler (2011): Need recognition: The buying process first starts with the need recognition when the customer realizes a problem or threat. An external or internal stimulus can trigger this need. Information search: An interested customer can search for information about a product to fulfill the need. The amount of information searched is determined by the drive's strength. For example, family, colleagues, or marketing networks can all provide details.

Alternative evaluation: A customer can decide by ranks brands and forms purchasing intentions during the assessment stage. Post-purchase behaviour: After buying the product, the consumer may be satisfied or dissatisfied and engage in post-purchase behaviour. This can include repurchasing the product and talking to others positively about it.

### 2.6.2 The Green Consumer Purchase Model

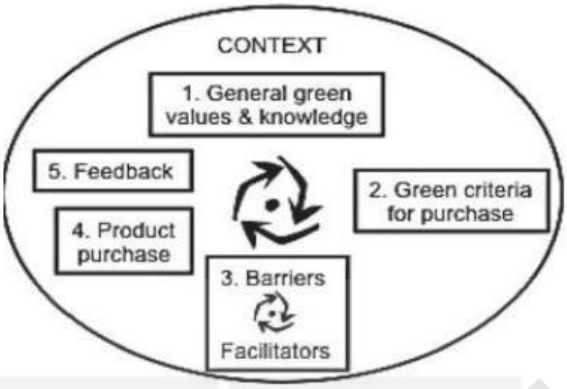



**Figure 2.1: Green Consumer Purchasing Model (Young, Hwang, McDonald & Oates, 2010)**

The green consumer buying model summarises the green consumer procurement process.

1. General awareness and green values: Customers' green values influence their desire to meet green criteria. It is informed by the consumer's previous buying experience and understanding of related issues.

2. Green purchasing criteria: When a customer chooses to research a product, ranging from research to the product's or manufacturer's ethics. This will include speaking with family members or colleagues, as well as conducting research. The most common criterion for buyers, regardless of their beliefs, is the product's environmental efficiency.

3. Barriers and facilitators: Various barriers and facilitators influence customers throughout the purchasing phase. Green labels on products and affordability are all examples of facilitators. Lack of time, product price, and lack of knowledge are all potential barriers.

4 & 5: Product Purchase and Feedback: The product purchasing and information gained from the process is feedback into the consumer's knowledge and practice, influencing the consumer's next purchase.

# CHAPTER 3

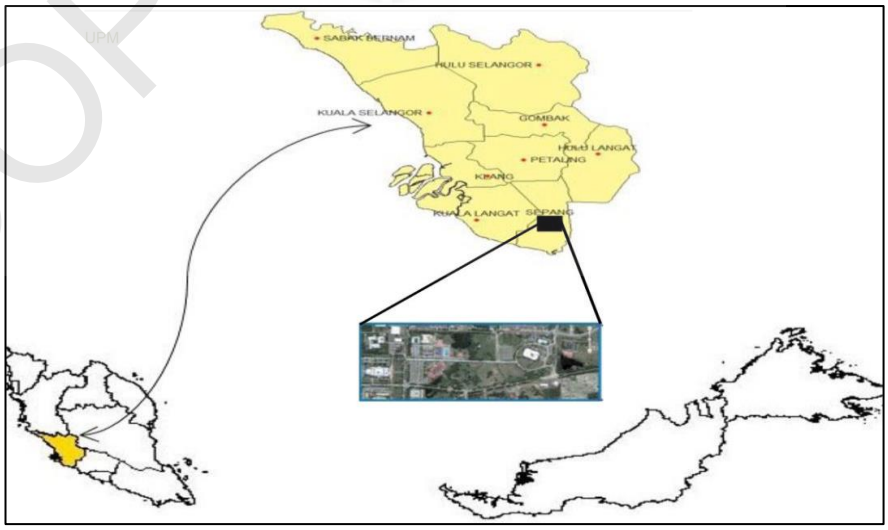
# METHODOLOGY

## 3.1 Study Design

A cross-sectional study design will be used in this study to determine the knowledge and practice of green purchasing on PCP among selected undergraduate students in Universiti Putra Malaysia.

## 3.2 Study Location

The study will be conducted in Universiti Putra Malaysia, Serdang, Selangor. Selangor is in the right and west of Peninsular Malaysia, with an estimated 6.53 million people in 2019 (Department of Statistic Malaysia, 2019).




Source: Google Map, 2020

**Figure 3.1: Study Location in Universiti Putra Malaysia**

### 3.3 Sampling Procedure

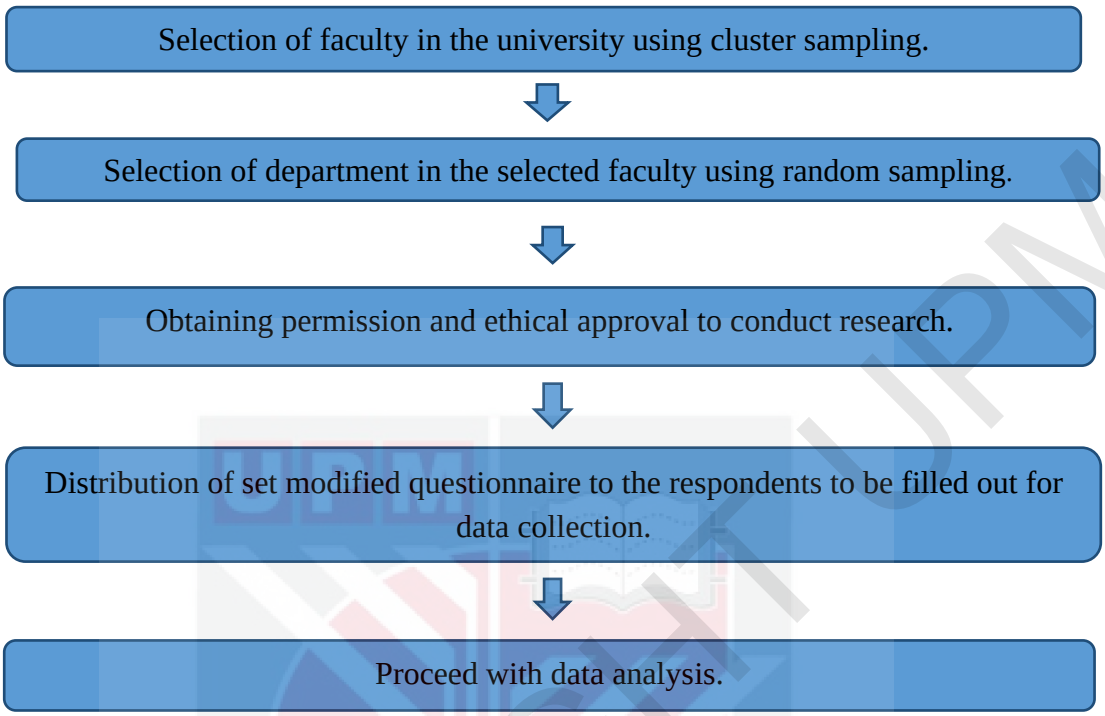



**Figure 3.2: Flowchart of Sampling Procedure**

#### 3.3.1 Sampling Population

The sample population of this study will be undergraduate students in UPM. The number of samples in this study 276 persons. This number based on 15 faculties that were divided into three disciplines which are Medicine and Health Sciences (Department of Environmental and Occupational Health) 56 students, Science and Technical (Department of Electrical and Electronic Engineering and Department of Physics), 110 students and Art and social science (Department of Accounting and Finance and Department of Food Science) 110 students.

### 3.3.2 Sampling Method

A multistage cluster sampling technique was used to select the sample. Cluster sampling will be used in the first level and followed by simple random sampling methods in the second level because the study involves a large study area and many respondents. The method of sampling used for this study was selected to enable students to represent namely the area of studies. The faculty was divided into three disciplines: Medicine and Health Sciences, Science and Technical, and Art and social science. In the first sampling stage, five faculties will be selected out of 15 faculties in UPM. Then, one department will be chosen randomly from each of the faculties by using random tables to get a specific study sample. The researcher will request the list of undergraduate students aged 19 to 25 in each department from the Academic Division of each department to identify the students' eligibility.

### 3.3.3 Sampling Frame

The sampling frame of the respondents will be undergraduate students in UPM

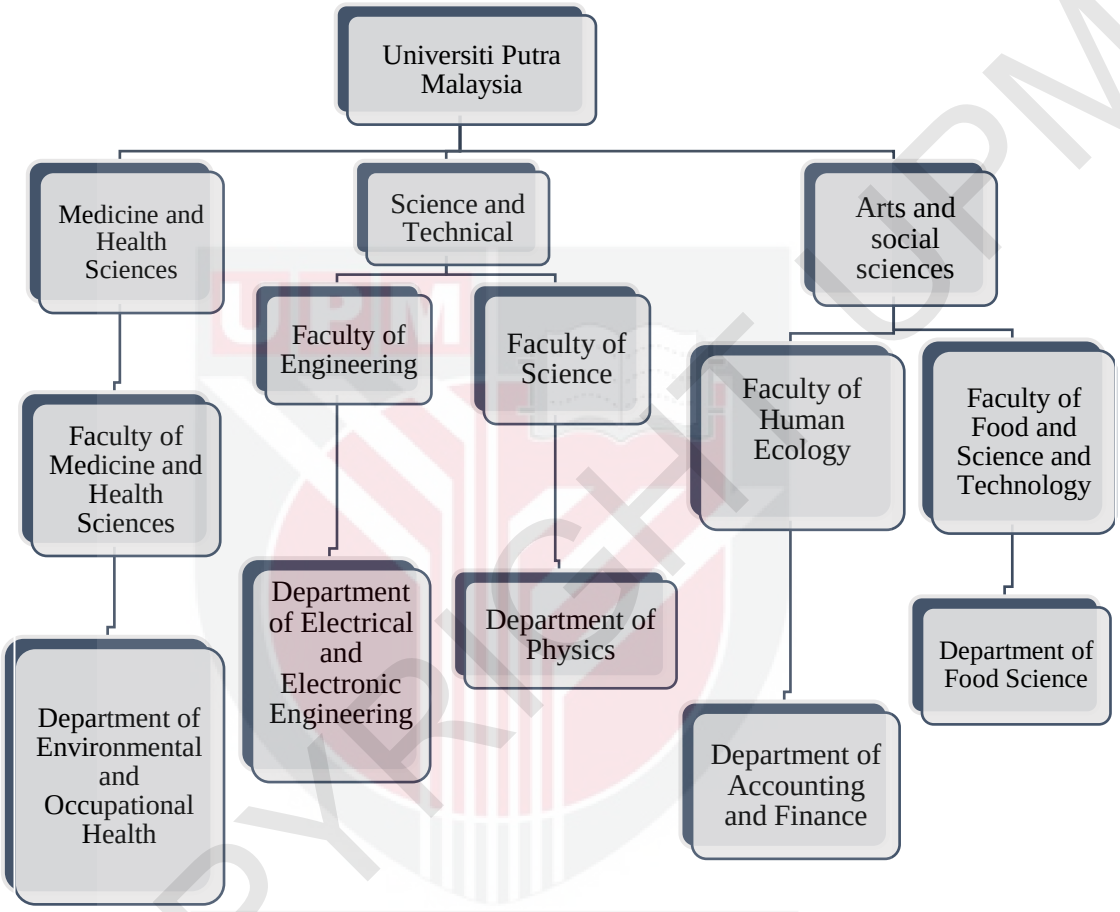



**Figure 3.3: Sampling Frame for this study**

### 3.3.4 Sampling Unit

These 15 faculties were divided into three disciplines which are Medicine and Health Sciences (Department of Environmental and Occupational Health), Science and Technical (Department of Electrical and Electronic Engineering and Department of Physics), and Arts and social sciences (Department of Accounting and Finance and Department of Food Science). The sampling unit will be undergraduate students that meet the inclusion criteria of the study. The selection of the requirements is following:

Inclusion criteria

1. Respondents who pursuing the study from selected courses.
2. Respondents have experience of purchasing PCP.
3. Respondents fall into the aged group of 18 and 26 years old.
4. Respondents who can read, write and communicate in Bahasa Melayu and English
5. Respondents who give their consent to participate in this study.

Exclusion criteria

1. International students, exchange students, mobility students, part-time students, and post-graduate students in UPM.
2. Refusal to participate in the survey.

### 3.4 Sampling Size

A study done by Arbaat et al. (2013) stated that undergraduate students in Malaysia had a 79.72% level of knowledge on the environment. According to the Corporate Strategy & Communication office (CoSComm), the number of undergraduate students in UPM as of June 2020 is 15 000. The sample size was calculated using the open pi method of proportion for one group formula (Sullivan, K. M., Dean, A., & Soe, M. M., 2009).

Equation:

Sample size n = [DEFF*Np(1-p)]/ ($d^2/Z^2_{1-\alpha/2}$) *(N-1) +p*(1-p)]

n = [1*(15, 000) (79.72) (5-79.72)]/ ($0.10^2/1.96^2_{1-\alpha/2}$) *(15,000-1) +79.72*(1-79.72)]

= Total of 276 Respondents

Where;

Population size (for finite population correction factor or fpc) (N): 15, 000

Hypothesized % frequency of outcome factor in the population (p): 79.72%+/-5

Confidence limits as % of 100(absolute +/- %) (d): 5%

Design effect (for cluster surveys-DEFF): 1

The sample size calculated is 251. However, another 10% of the sample size will be added if any likelihood of dropout respondents occurs.

=25

Therefore, the total sample size required for this study will be 276 respondents. Since this study involves five courses, the total number of respondents for each course will be 55.

### 3.5 Study Instrumentation

#### 3.5.1 Questionnaires

A modified version of the questionnaire from Serrano, M (2015) will be used in this research. The first section (Section A) is on the socio-demographic characteristics of the respondents. The second section (Section B) is a general question of the respondents regarding PCP. The third section (Section C) is questioning the respondents' knowledge about the green purchase of PCP. The fourth section (Section D) is on the respondents' practice towards green purchasing of PCP. The fifth section (Section E) recommendations where the respondents are encouraged to choose and suggest any improvement in their daily lives.

i) Section A: Socio-demographic Characteristics

The respondents will be asked about their socio-demographic statuses, such as age, gender, and race. There are three questions included in this section. Respondents are required to tick and fill in their desired answers to the questions.

ii) Section B: General question on PCP

For this part, there will be six questions that will comprise frequency and reason for using PCP and whether PCP can cause a problem.

iii) Section C: Knowledge on green purchase of PCP

For this part, there will be 15 questions that will comprise knowledge regarding PCP production, the effect of green purchase of PCP on human and marine

life. The respondents will be guided and are required to answer the questions through True and False.

v) Section D: Practice on green purchase of PCP

In this part, there will be 20 questions that will be comprised of questions regarding the practice of green purchase on PCP. The questions required answers from respondents based on the Likert scale: Strongly disagree, Disagree, Agree, and Strongly agree.

vi) Section E: Recommendations

In the recommendations part, the respondents are encouraged to choose and suggest any improvement to be made in their daily lives to minimize PCP problems regarding green purchasing of PCP.

### 3.6 Data Analysis

Data analysis was done using "Statistical Package for Social Sciences (SPSS)" Version 25.0.

#### 3.6.1 Descriptive analysis

1. Knowledge Assessment

There were 15 questions in the knowledge section. These questions were used to assess the knowledge of the respondents on the green purchase of PCP. Each correct answer was given a score of 1 and 0 scores for the wrong answer. The overall score was converted in terms of score level and was classified into three levels (low, moderate, and high knowledge). A mean score of 13.13 and standard deviation of 1.42 used to classify the subjects into three groups as follows (Ajit, 2011):

Low level : score of 0 -11

Moderate level : score of 12 - 13

High level : score of 14 -15

2. Practice Assessment

There were 20 questions in the practice section. The practice scoring method followed these scoring criteria.

Strongly agree answer : 4 points

Agree answer : 3 points

Disagree answer : 2 points

Strongly disagree answer : 1 points

The overall score was converted in terms of score level and was classified into three levels (low, moderate, and high practice). A mean score of 58.85 and standard deviation of 12.02 used to classify the subjects into three groups as follows (Ajit, 2011):

Low level : score of 0 -46

Moderate level : score of 47 - 69

High level : score of 70 -80

**3.6.2 Analytical analysis**

Chi-Square tests were used to identify the association between sociodemographic data with knowledge and practice level. It was also used to determine the association between knowledge with practice level among respondents.

### 3.7 Quality control/ Quality Assurance (QAQC)

A modified version of the questionnaire from Serrano. M (2015) was used in this research. A pilot study will be conducted among other university students to ensure the reliability of the questionnaire. A pre-testing questionnaire was conducted after modifying the questionnaire, and the value for internal consistency were obtained through Cronbach's alpha value of 0.783 for knowledge and 0.956 for practice. The study population involved in the pre-testing was 10% from the study sample size with similar characteristics: undergraduate students from different Universities to avoid contamination of study participants. Thus, 27 respondents were chosen to be included in the pre-testing to ensure the validity and reliability of data obtained from the study.

### 3.8 Ethical Approval

This study was forwarded to Ethics Committee for Research Involving Human Subjects of Universiti Putra Malaysia (Ref. No-JKEUPM-2020-485) for approval and acknowledgment. Other than that, all respondents were provided with a written consent, and all data obtained from the questionnaire will be kept confidential.

# CHAPTER 4

# RESULTS

## 4.1 Study background

The study was conducted at Universiti Putra Malaysia from 22 March 2021 to 8 May 2021. From the calculation of sample size, 276 respondents have recruited to answers the questionnaires.

## 4.2 Socio demographic characteristics

Table 4.1 shows the distribution of gender and race of the respondents. From all socio-demographic characteristic parameters, only the gender and race of the respondents were chosen to be analysed since the age of the respondents are almost the same, aged between 19-25 years.

For gender distribution, out of 276 respondents, most respondents are female that are182 respondents, and 66% of the total respondents. While there are only 34 % of males participated in the survey, which equates to 94 respondents. For the race distribution, the majority of the respondent were Malay (66.0%). Only 18.0% of the respondents Chinese, and the remaining were Indian (7.0%) and others race (9.0%), respectively.

**Table 4.1: Socio Demographic Characteristics**

| Variables | Answers | Frequencies (%) |
|---|---|---|
| Gender | Female | 182 (66) |
| | Male | 94 (34) |
| Race | Malay | 182 (66) |
| | Chinese | 49 (18) |
| | Indian | 15 (7) |
| | Others | 30 (9) |

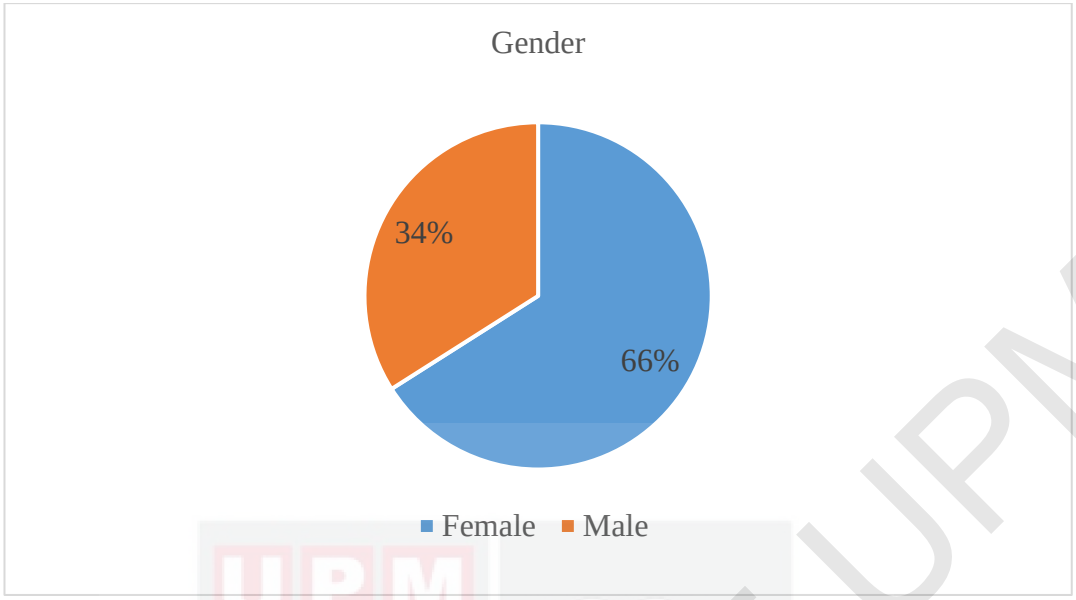



**Figure 4.1: Distribution of Gender on the Respondents (N=276)**

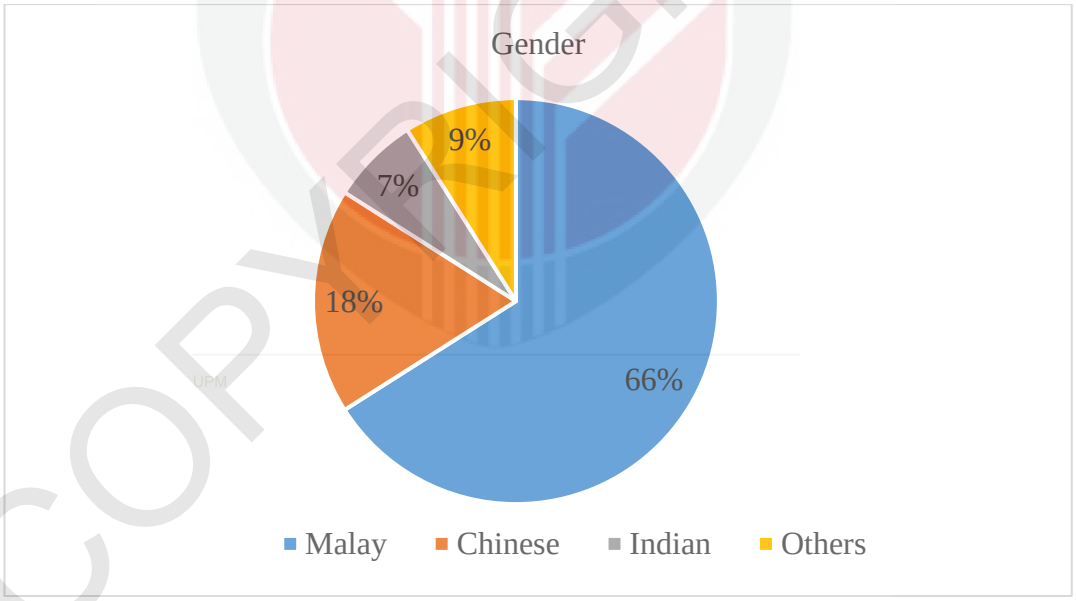



**Figure 4.2: Distribution of Races on the Respondents (N=276)**

### 4.3 Descriptive Statistic on General Question

Table 4.2 illustrated the second part of the questionnaire, which is the general question on the green purchase of PCP. The respondents were asked six questions. Descriptive statistics were done to get the frequency and percentage of respondent's chosen answers. Regarding the questions about hearing about green purchasing, out of 100% of students heard about that. On the components of how often they use PCP question, out of 84.1% of students chose they always use PCP, followed by sometimes (14.8%), seldom (1.1%), and none of the students never use PCP.

For the third question, they were asked about the type of PCP that they use. Frequency of student's preference on PCP showed was sunscreen (74.7%), followed by hair dye (14.1%), deodorants (81.9%), powder (60.6%), shampoo (98.9%), nail polish (15.5%), shower gel (93.1%), makeup (56%), hair gel (22%), perfumes (82.3%) and hand sanitizer (94.2%). Moreover, 23.5% of students spend less than RM 50 for PCP, and 46.6 % of students spend between RM 50 – RM 100 a month, followed by 18.1% students spend between RM100 – RM200 and the rest of 11.9% spend between RM100 – RM200. Besides, regarding their preference when buying PCP, most of the students prefer the ingredients (244-88.1%), followed by the availability of the products (166-59.9%). Another preference is the cheaper price (157-56.7%) and environmental packaging (100-36.1%). Meanwhile, only 84.1% of students agreed that PCP could cause a problem.

**Table 4.2: General Question on Green Purchase of PCP**

| Questions | Answers | Frequencies (%) |
|---|---|---|
| Do you know what green purchasing is? | Yes | 276 (100) |
| | No | 0 |
| How often do you use PCP? | Always | 232 (84.1) |
| | Sometimes | 41 (14.8) |
| | Seldom | 1 (1.1) |
| | Never | 0 |
| What type of PCP that you use? | Sunscreen | 207 (74.7) |
| | Hair dye | 39 (14.1) |
| | Deodorants | 227 (81.9) |
| | Powder | 168 (60.6) |
| | Shampoo | 274(98.9) |
| | Nail polish | 54 (19.5) |
| | Shower gel | 258 (93.1) |
| | Makeup | 155(56) |
| | Hair gel | 61(22) |
| | Perfumes | 228(82.3) |
| | Hand sanitizer | 261(94.2) |
| How much money do you spend a month on PCP? | Less than RM 50 | 65 (23.5) |
| | RM50 – RM 100 | 128 (46.6) |
| | RM 100 – RM200 | 50 (18.1) |
| | More than RM200 | 33 (11.9) |
| What do you prefer when purchasing PCP? Cheap | Yes | 157 (56.7) |
| | No | 120 (43.3) |

| | | |
|---|---|---|
| | Yes | 244 (88.1) |
| Ingredient | No | 33 (11.9) |
| | Yes | 166 (59.9) |
| Easily Available | No | 111 (40.1) |
| | Yes | 100 (36.1) |
| Environmental Packaging | No | 168 (60.6) |
| Do you think PCP can cause a problem? | Yes | 234 (84.8) |
| | No | 42 (15.2) |

### 4.4 Knowledge on Green Purchase of PCP

There were 15 questions had been asked to the respondents to identify respondents' knowledge on green purchase of PCP . For every correct answer, 1 point was obtained, while for the wrong answer, 0 point was given. The obtained score was converted in terms of score level and was classified into three levels (low, moderate, and high knowledge). Table 4.3 showed the frequency and percentage for the level of knowledge of undergraduate students in UPM.

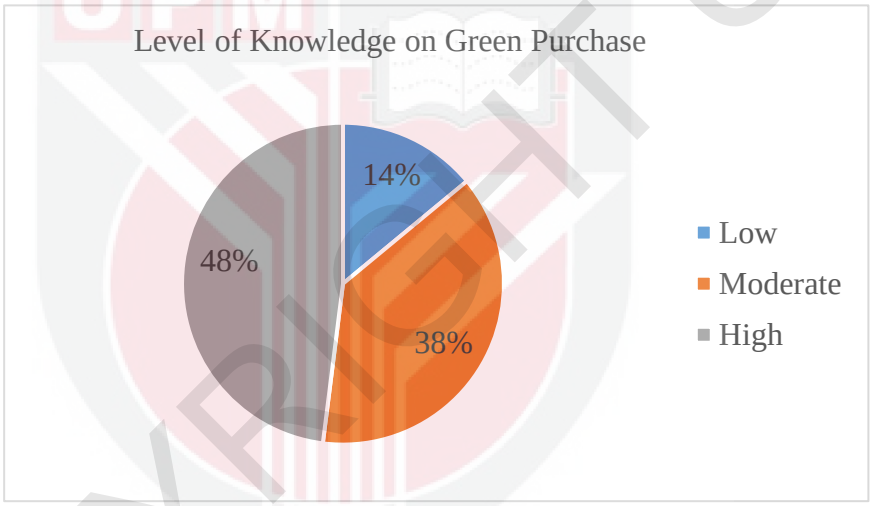



**Figure 4.3: Level of Knowledge on Green Purchase of PCP**

The majority (48%) of the respondents have a high level of knowledge, while respondents with moderate and low knowledge account for 38% and 14%, respectively.

The following tables show the detailed findings on the percentage of knowledge answers on green purchase of PCP.

**Table 4.3: Knowledge on Green Purchase of PCP**

| No. | Questions | Answers. | Frequency % |
|---|---|---|---|
| 1. | There are harmful ingredients in PCP. | False | 27 (9.7) |
| | | True | 249 (90.3) |
| 2. | Harmful ingredients in PCP can cause any ill effect on humans. | False | 15 (5.4) |
| | | True | 261 (94.6) |
| 3. | There is a law related to safe PCP in Malaysia. | False | 33 (11.9) |
| | | True | 243 (88.1) |
| 4. | PCP claimed to be hypoallergenic, dermatologist-tested, but these may still cause an allergic reaction. | False | 9 (3.2) |
| | | True | 267 (96.8) |
| 5. | PCP can endanger marine life. | False | 15 (5.4) |
| | | True | 261 (94.6) |
| 6. | Environmental packaging products are recyclable. | False | 10 (3.6) |
| | | True | 266 (96.4) |
| 7. | Most PCP packaging is made up of plastic. | False | 22 (7.9) |
| | | True | 254 (92.1) |
| 8. | Plastics packaging is harmful to human health. | False | 61 (22) |
| | | True | 215 (78) |
| 9. | Plastic packaging polluting waterways and ocean | False | 0 |
| | | True | 276 (100) |

| | | | |
|---|---|---|---|
| 10. | I have enough knowledge about environmental-friendly PCP. | False | 149 (53.8) |
| | | True | 127 (46.2) |
| 11. | Many countries already promote green living. | False | 23 (8.3) |
| | | True | 253 (91.7) |
| 12. | Malaysia already encourages green purchasing on PCP. | False | 126 (45.5) |
| | | True | 150 (54.2) |
| 13. | Green products have more environmental benefits than other products | False | 6 (2.2) |
| | | True | 270 (97.8) |
| 14. | To keep the environment beautiful, clean, and not threatened, we need to be free of plastic products. | False | 6 (2.2) |
| | | True | 270 (97.8) |
| 15. | Green purchasing of PCP can reduce the amount of plastic-based waste at the landfill. | False | 18 (6.5) |
| | | True | 258 (93.5) |

From the result, it was found that questions with the highest scores were question number 6 because all the respondents (100%) managed to answer correctly for the question "Plastic packaging polluting waterways and ocean," question number 2, where 90.3% of the sample population perceived that "There are harmful ingredients in PCP." while the remaining 9.7% of the respondents got the wrong answer. The question that respondents scored less was question number 12, which shows that only 45.5% of the respondents believed Malaysia already encourages green purchasing on PCP. Besides, for question number 10, "I have enough knowledge about environmental-friendly PCP," only 46.2 % of the respondents answered they have enough knowledge. In comparison, the other 53.8% answered

they do not have enough knowledge.

### 4.5 Practice on green purchase of PCP

For practice on green purchase of PCP, all the respondents were asked 20 questions regarding their practice on green purchase of PCP. The respondents were given strongly agree, agree, strongly disagree, and disagree as answer choices to indicate their practice on a green purchase of PCP. The scores of 4, 3, 2, and 1 were given, respectively. The practice score was converted into practices score level and classified into three levels (low, moderate, and high practices). Table 4.4 shows the distribution of responses by the respondents on questions regarding practice on green purchase of PCP.

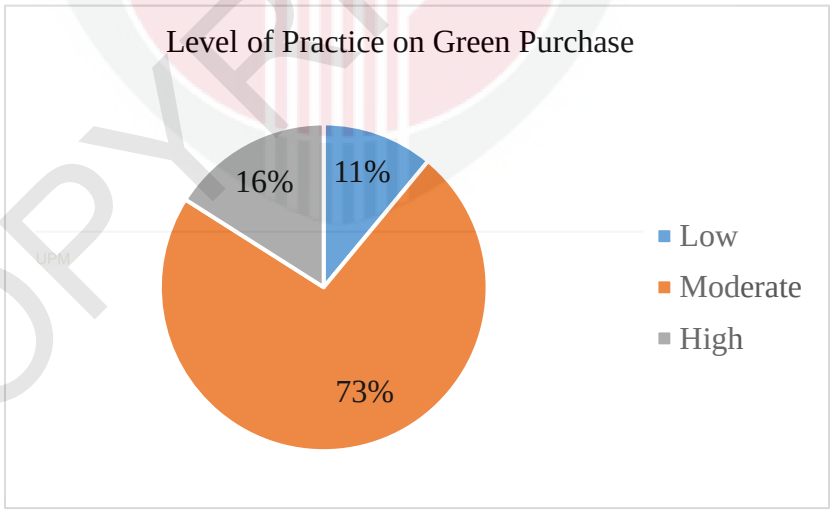



**Figure 4.4: Level of Practice on Green Purchase of PCP**

It shows that 73% of the respondents have shown a moderate practice on green purchase of PCP. Only 16% of the respondents have shown moderate practices, while another 11% shown poor practices.

**Table 4.4: Practice on Green Purchase of PCP**

| Strongly disagree | Disagree | Agree | Strongly agree |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

| No. | Questions | Frequency % | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| 1. | I will share information about PCP hazards. | 19 (6.9) | 39 (14.1) | 140 (50.9) | 78 (28.2) |
| 2. | I read the labels when purchasing PCP. | 22 (7.9) | 18 (6.5) | 115 (41.5) | 121 (44) |
| 3. | I can understand whether a product is environmentally friendly from the information about the content of the product. | 7 (2.5) | 85 (30.7) | 124 (45.1) | 60 (21.7) |
| 4. | I have a considerable interest in organic, ecological, and natural PCP. | 10 (3.6) | 85 (30.7) | 126 (45.8) | 55 (19.9) |
| 5. | I always educate my family and friend to purchase green PCP. | 32 (11.6) | 89 (32.1) | 123 (44.8) | 32 (11.6) |
| 6. | I often buy environmental PCP with my family and friend. | 18 (6.5) | 124 (45.1) | 97 (35) | 37 (13.4) |
| 7. | I am willing to spend more on environmental-friendly PCP if they are available. | 3 (1.1) | 88 (31.8) | 148 (53.8) | 37 (13.4) |
| 8. | I will recommend to my family and friend to use environmentally-friendly PCP when buying the products. | 18 (6.5) | 22 (7.9) | 176 (63.9) | 60 (21.7) |
| 9. | I intend to buy environmentally friendly PCP because it is less polluting. | 19 (6.9) | 13 (4.7) | 157 (57) | 87 (31.4) |
| 10. | I intend to buy environmentally friendly PCP because it will protect the environment more. | 19 (6.9) | 7 (2.5) | 171 (62.1) | 79 (28.5) |

| | | | | | |
|---|---|---|---|---|---|
| 11. | I intend to switch to another brand for ecological reasons. | 22 (7.9) | 50 (18.1) | 151 (54.5) | 54 (19.5) |
| 12. | I prefer PCP manufactured from recycled materials. | 22 (7.9) | 46 (16.6) | 151 (54.5) | 58 (20.9) |
| 13. | If I learn that the manufacturing process of a product that I bought will harm the environment, I stop buying that product. | 18 (6.5) | 42 (15.2) | 126 (45.8) | 90 (32.5) |
| 14. | I always get information about the negative impact of plastic packaging and its effect on the environment. | 30 (10.8) | 44 (15.9) | 126 (46.2) | 75 (27.1) |
| 15 | The successful purchasing of green PCP depends on the attitudes and practices of the person. | 19 (6.9) | 21 (7.6) | 134 (48.7) | 102 (36.8) |
| 16. | I will purchase the environmentally friendly packaging product to replace the plastic packaging product. . | 22 (7.9) | 29 (10.5) | 175 (63.5) | 50 (18.1) |
| 17. | If I found the plastic packaging product litters everywhere, I will take it and throw it according to the designated recycling bins category. | 25 (9) | 37 (13.4) | 144 (52) | 71 (25.6) |
| 18. | I will take care of the environment to prevent it from deteriorating. | 19 (6.9) | 7 (2.5) | 169 (61.4) | 81 (29.2) |
| 19. | I will join or participate in the environmental program that is held at school or home area. | 25 (9) | 47 (17) | 132 (48) | 72 (26) |
| 20. | I will deliver the positive impacts on green purchasing of PCP to others. | 19 (6.9) | 17 (6.1) | 171 (62.1) | 69 (24.9) |

Table 4.4 shows the percentage of answers on practice on green purchase of PCP. There were statements where most of the respondents mostly agreed with. Based on the result shown in the 4.5, 176 respondents (63.9%) decided to recommend to their family and friends buying environmental PCP, and 60 (21.7%) strongly agreed. 22 people (7.9%) answered strongly disagree, 18 people (6.5%) answered disagree,171 people (62.1%) answered agree, and 79 people (28.5%) responded strongly agree when the respondents asked about their intention on buying environmentally PCP because it will protect the environment.

Next, 171 (62.1%) and 69 (24.9%) of respondents agreed and strongly agreed to deliver the positive impacts on green purchasing of PCP to others.

### 4.6 Association between Socio Demographic Data with Knowledge and Practice on Green Purchasing of PCP

The association between gender and race of the student's knowledge on green purchasing of PCP was analysed using the Chi-square test. The p-value for gender with the knowledge was less than 0.05, thus indicating a significant association between gender with knowledge of respondents. The Chi-square test obtained for gender was 13.574, and the p-value was 0.001 and. However, there was no significant association between race with knowledge: the p-value for Fisher's Exact test was 0.075. Fisher's Exact Test was used as 2 cells (16.7%) have expected counts less than 5. The minimum expected count is 1.78.

There was also a significant association between gender with the practice level towards the green purchase of PCP among respondents. The p-value for gender was less than 0.05, which was 0.004. Thus, it indicates a significant association between gender and the level of practice of students. However, there was no significant association between race with practice: the p-value for Fisher's Exact test was 0.060. Fisher's Exact Test was used as 4 cells (33.3%) have expected counts less than 5. The minimum expected count is 1.41.

**Table 4.5: The Association between Gender with Knowledge among UPM Students (N=276)**

| Gender | Knowledge Level, N (%) | | | $X^2$ | p-value |
|---|---|---|---|---|---|
| | Low | Moderate | High | | |
| Male | 4 | 34 | 56 | $13.574^a$ | 0.001* |
| Female | 34 | 73 | 75 | | |

N=276, Chi-square test, *significant at p<0.05

**Table 4.6: The Association between Race with Knowledge among UPM Students (N=276)**

| | **Value** | **df** | **Exact Significance (2 sided)** |
|---|---|---|---|
| Fisher's Exact test | 35.229 | 6 | 0.075 |
| N of Valid Cases | 276 | | |

**Table 4.7: The Association between Gender with Practice among UPM Students (N=276)**

| Gender | Practice Level, N (%) | | | $X^2$ | p-value |
|---|---|---|---|---|---|
| | Low | Moderate | High | | |
| Male | 18 | 60 | 16 | $11.158^a$ | 0.004* |
| Female | 12 | 143 | 27 | | |

N=276, Chi-square test, *significant at p<0.05

**Table 4.8: The Association between Race with Practice among UPM Students (N=276)**

| | **Value** | **df** | **Exact Significance (2 sided)** |
|---|---|---|---|
| Fisher's Exact test | 12.829 | 6 | 0.060 |
| N of Valid Cases | 276 | | |

### 4.7 Association between Knowledge with Practice on Green Purchasing of PCP

Chi-square analysis was used to analyse the association between knowledge and on practiced green purchasing of PCP. The data obtained were tabulated in Table 4.9.

Based on Table 4.11, about 84 (30.4%) students had moderate knowledge and moderate practiced green purchasing of PCP. Meanwhile, only 25 (9.0%) students had a high level of knowledge with a high level of practice, and 3 (1.0%) students had a low knowledge level with a low level of practice. The Chi-square test obtained was 4, and the p-value was 0.002, which is more than 0.05. Therefore, there was an association between knowledge and practice level.

**Table 4.9: The Association between Knowledge with Practice among UPM Students (N=276)**

| | Practice level, N (%) | | | $X^2$ | p-value |
|---|---|---|---|---|---|
| | Low | Moderate | High | | |
| **Knowledge** | | | | | |
| Low | 3 | 34 | 1 | 17.260 | 0.001* |
| Moderate | 5 | 84 | 17 | | |
| High | 22 | 85 | 25 | | |

N=276, Chi-square test, *significant at p<0.05

### 4.8 Recommendation of Respondents

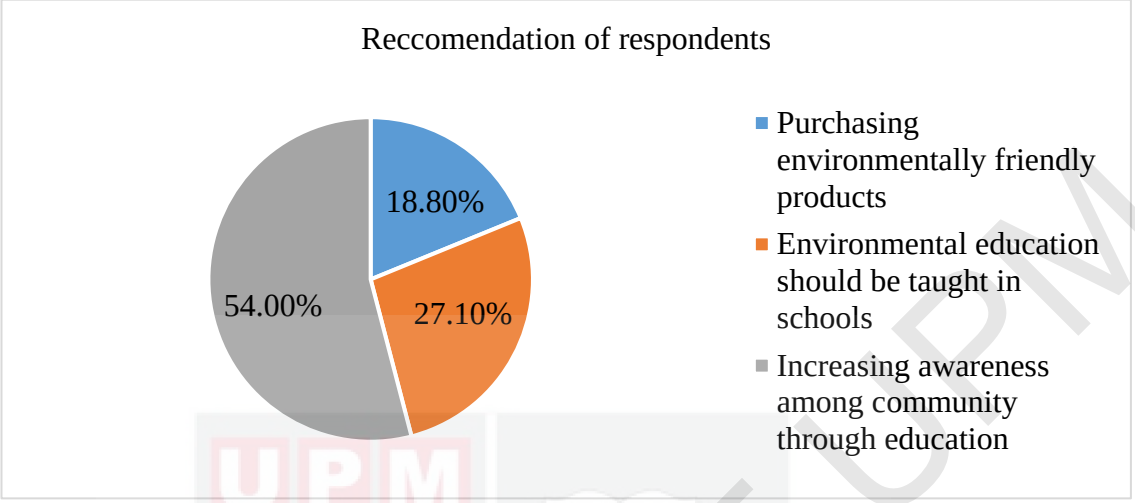



**Figure 5: Recommendation of Respondents on Green Purchase of PCP**

It shows that 54.0% of the respondents suggest increasing awareness among the community through education to improve knowledge and practice on green purchase of PCP. Next, 27.1% of respondents suggest environmental education should be taught in schools, and only 18.8% of the respondents recommend purchasing environmentally friendly products.

**Table 4.10: Frequency of Recommendation of Respondents on Green Purchase of PCP**

| Recommendation | Frequency % |
|---|---|
| Purchasing environmentally friendly through education | 52 (18.8) |
| Environmental education should be taught in schools | 75 (27.1) |
| Increasing awareness among community through education | 149 (64.0) |

# CHAPTER 5

# DISCUSSION

## 5.1 Socio Demographic Distribution of Respondents

The main objective of this study is to study the knowledge and practice of green purchasing among undergraduate students at UPM. All the respondents in this study were aged between 19-25 years old, considered students and youth. Most of the respondents are female, and it represents 66% of the total respondents. The remaining respondents are 34 % male, participated in the survey. For the race distribution, the majority of the respondents were Malay (66.0%). Only 17.0% of the respondents Chinese, and the remaining were Indian (7.0%) and others race (9.0%), respectively.

## 5.2 Level of Knowledge and Practice among Undergraduate Students

### 5.2.1 Level of Knowledge

This study was found that 48.0% of undergraduate students had high knowledge on green purchase of PCP, 38.0% of them possessed moderate knowledge and 14.0% of the rest possessed low knowledge on green purchase of PCP. In addition, the survey showed that a mean score of 13.13 with a standard deviation of 1.42. This indicates that most of the respondents having a high knowledge followed by moderate knowledge and low knowledge on green purchase of PCP.

According to Ahmad et al. (2011), respondents' level of knowledge of the environment is unsatisfactory. They need more experience and exposure to improve their knowledge and their practices toward the environment. However, the finding of this study is similar to previous research conducted among UKM students, showed that there had a high level of knowledge followed by moderate knowledge (Arbaat et al., 2013). This study proves that most respondents show appropriate knowledge and are already concerned about environmental issues regarding PCP. Many sources of information related to the environment are readily available. They might know or read about the eco-label PCP, and the information on the packaging reaches the level that catches their attention to what is inside the PCP (Shahnei, 2012). When this information about PCP is available, it usually turns into knowledge to the consumers (Kaufmann et al., 2012)

As recommended by Aman et al. (2012), environmental knowledge significantly influences students' behaviour on green PCP. Their level of environmental care positively influences a higher level of knowledge and concern toward the environment, and this attitude can lead to their green purchase intentions.

### 5.2.2 Level of Practice

The respondents scored moderate for the level of practice on green purchase of PCP. This shows a similar finding, according to Zurina et al. (2003), which stated that environmental awareness among university students was at a high level, but the practice of the environment was at a moderate level. Even the students have a good level of environmental care, they still lack environmental practice (Hadi et al., 2003). This is because most students tend not to purchase the environmentally PCP as the price is higher. They think that other commercial products are cheaper and readily available. D'souza et al. (2006) also stated that consumers are less likely to buy them if the green products are more expensive.

A study conducted by Norhusna (2014) also stated students' involvement and practices in environmental-related activities are moderate as young people do not participate in environmental protection even though they understand the need for ecological conservation.

## 5.3 Association between Socio Demographic Data with Knowledge And Practice on Green Purchase of PCP

Green purchase behaviour stated by Han, Hsu and Lee (2009), indicates that socio-demographic characteristics such as age, gender, and income influence green products purchasing. For example, Rezai et al. (2011) stated that the socio-demographic variables of educational level, income level, age, and marital status have a significant impact on the intention of the respondents to buy green. There was an association between gender with the knowledge level towards the green purchase of PCP among respondents. The p-value for gender variables was more than 0.05. A previous study by Hariharan et al. (2016) emphasized that there was an influence of gender on the distribution of green PCP. Females were expected to be more adaptable to purchase eco-labeled products than males (Thogersen et al., 2010). Yiridoe et al. (2005) reported that female is more aware of chemical and preservatives in PCP. Tikka et al. (2000) also stated that females express more positive attitudes toward the environment than males. In addition, Olivová (2011) also find that females have a greater intention of practicing green behaviour in terms of gender. Thus, it shows that gender has an association with the knowledge on green purchase of PCP as women are more likely to use organic products. Besides, Bryunina et al. (2011) showed that respondents with higher educational levels also tend to concern more and have higher knowledge levels on green purchasing. However, educational level information was not included in the questionnaire of this study because the respondents were all at the same level of educational level. Mohammad et al. (2012) reported a positive correlation on race's role in choosing green packaging among Malaysian people. It is indicated that three main races in Malaysia may differ in knowledge toward green products.

In contrast, there was no association between race and level of knowledge and practice towards the green purchase of PCP. There were only a few studies were examining the moderating effect of ethnic groups on green purchase intention. Sinnappan and Rahman (2011) examined the role of an ethnic group toward green purchasing behaviour among Malaysian consumers. The finding indicated that the role of the ethnic group is not vital among Malaysian consumers in green purchasing. Tang (2014) stated that the prime minister of Malaysia applies the "1 Malaysia" concept to all races and ethnicities in Malaysia. This means that despite different cultures and family backgrounds, they must be responsible and influence each other to prevent environmental issues and encourage green purchasing.

### 5.4 Association between Knowledge with Practice on Green Purchase of PCP

The Chi-square test obtained was 17.260, and the p-value was 0.001. Therefore, there was an association between knowledge and practice of green purchase on PCP. Bokhari, Hassan, and Saadan et al. (2012) show that consumers who had high knowledge will lead to good environmentally friendly practices. However, UPM students show the contrast result but similar to previous knowledge and practice study by Srinivasan, Swarnapriya, Felix, and Pravin (2019) on assessing of professional students on knowledge and practice on plastic at Annamalai University, Tamil Nadu that shows there was a significant relationship between knowledge and practice. A study conducted by Hafizah, Nazalina, Nur Afiqah, and Mohd Narwawi (2012) among students at UPM also discovered that the relationship between the level of awareness with green environmental behaviour is significant, although relatively weak. This suggests that, despite having a high degree of environmental knowledge, these students do not always act environmentally in their daily lives. Even the knowledge of health behaviour was useful, and it did not seem automatically intent that this behaviour is followed (Wang et al., 2014). It is also backed by Wahida (2004), which indicates that while community knowledge and understanding of the need to conserve the environment has improved, individual involvement in ecological preservation initiatives remains low. It proves that knowledge does lead to practices, but it has often forgotten shortly after it is acquired. Thus, the student's knowledge must be maintained to increase their environmental awareness and influence them to practice good practice.

### 5.5. Recommendation on Green Purchase of PCP

Around 149 respondents suggest that raising community awareness will help with green PCP purchases. The community level of awareness and participation towards the environmental programs is vital to improving the green purchase of PCP. According to Shen (2012), those who perceive awareness of green products are more environmentally sensitive and inclined to buy ecologically friendly products. However, Steg et al. (2014) indicated that individual understanding of environmental issues may or may not influence them to participate actively in environmental programs. This is also supported by previous research, revealings that having alone awareness does not always equate to pro-environmental behaviour (Kollmus and Agyeman 2002; Steg et al. 2014). Thus, the concept of sustainable development emphasises environmental well-being needs to be improved through community participation. In addition to awareness, an environmentally responsible community should have a fundamental grasp of the environment and its problems, feelings of environmental care, skills, and motives to solve and eventually engage in environmental programs (Sengupta et al.2010; Ostrom 2014).

# CHAPTER 6

# CONCLUSION AND RECOMMENDATION

## 6.1 Conclusion

In conclusion, findings from the study have found that level of knowledge was high, but they showed a moderate level of practice towards the green purchase of PCP.

In this study, it was found that gender contributed significantly to the respondents' level of knowledge. Females showed a high percentage of knowledge than males. However, both play important roles in this issue. In contrast, it was found no significant relationship between race and level of knowledge among the respondents.

In terms of the level of knowledge and practice, it was found that there is an association between knowledge and practice among the respondents. Applying good practice must be supported by having a good knowledge level that totally influences the level of practice of the respondents. Thus, it is crucial to make sure people get enough information regarding a green purchase on PCP.

## 6.2 Limitation

The researcher found several study limitations throughout the process of completing this study. First, this study only focused on undergraduate students in five departments in UPM. Other public and private universities could also develop different knowledge and practice because of different perspectives on the environment. Next, most of the respondents recruited were Malay. This is because most of the courses that had been chosen in the faculty only consisted of Malay. Besides, recall and information bias might occur in this study as respondents may not remember the information to fill the questionnaires. Lastly, the duration to conduct this research short. The research only depends on an online survey, and if there is more time had been given to conduct this research, the outcomes of this research will be better.

## 6.3 Future Recommendation

Firstly, to obtain more valid data, future research should include all faculties in Universiti Putra Malaysia. It also recommends conducting and distributing equally among all variables so the findings can be more generalized and comprehensive towards students' green purchasing behaviour in the universities.

Next, Ministry of Higher Education (MoHE) and Universiti Putra Malaysia needs to strengthen environmental education in universities to create more awareness on environmental protection and conservation. Students will become future leaders in the country, and their good behaviour toward the environment can manage the ecosystem to live sustainably.

Lastly, the marketer had the most significant influence in the PCP market. The marketer could emphasize green purchasing on social media mainly to potential customers such as university students. As a result, consumers will increase their green purchase intent and change their habits to produce a good attitude towards preserving the environment.

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# APPENDIX A

# CONSENT FORM

**RESPONDENT'S INFORMATION SHEET AND INFORMED CONSENT FORM**

Please read the following information carefully and do not hesitate to discuss any questions you may have with the researcher.

**1.STUDY TITLE :**

Knowledge and Practice of Green Purchasing for Personal Care Products among Undergraduate Students in Universiti Putra Malaysia.

**2. INTRODUCTION:**

This study is about environmental issues that causes by pollution that comes from personal care product. The manufacturing companies produced larger amount of non-recyclable resources for personal care product consumed by the customer. However, the practice will cause environmental issues which give bad effects to human health. Moreover, students who concern about environment issues, but they still have a hard time to apply green practice during purchasing. Personal care product has been used by all age including University students. University students was chosen as study population to assess their knowledge and practice on green purchasing of personal care product. This research will give an understanding into the opinions of the students about this issue and their behaviours and actions concerning green purchasing of personal care products. Besides, this study can use as the basis for future governmental plans, public organizations, and private initiatives that can help lessen the degree of this increasing threat.

**3. WHAT WILL YOU HAVE TO DO?**

It is important that you read and understand this research information before agreeing to participate in this study. Your participation is voluntary and you may withdraw at anytime.No compensation is given for the completion of this survey. Your participation in this study is expected to be done in 10 to 15 minutes. This study is estimated to include up to 276 respondents. A set of questionnare qill be given to you if you agree to involve in this research and you are acquired to fill up the form.The questionnares consist of five sections which are Section A (socio-demographic data), Section B (general question on the respondents regarding of personal care products), Section C (Respondent's knowledge on green purchasing of personal care products, Section D (Respondents' practice on green purchasing of personal care products) and Section E (recommendations where the respondents are encouraged to choose and suggest any improvement in their daily life).

**4. WHO SHOULD NOT PARTICIPATE IN THE STUDY?**

Only students from selected courses are invited to participate in this study. Students who are not fit to answers due to sickness or other problems should not participated.

**5. WHAT WILL BE THE BENEFITS OF THE STUDY:**

**a) TO YOU AS THE SUBJECT?**

As the subject, your responses will contribute to the research and add to the study of knowledge and practice regarding youth consumer behaviour on green purchasing of personal care product.

**b) TO THE INVESTIGATOR?**

Researcher assists in promoting the knowledge and awareness of university students towards green purchasing of personal care products. It also can provide useful foresight to any consumers who wish to purchase green products.

**6. WHAT ARE THE POSSIBLE RISKS?**

There are no risks to respondents who participated in this research project.

**7. WILL THE INFORMATION THAT YOU PROVIDE AND YOUR IDENTITY REMAIN CONFIDENTIAL?**

The information collected will be kept confidential and will only be used for academic purposes only.

**8. WHO SHOULD YOU CONTACT IF YOU HAVE ADDITIONAL QUESTIONS DURING THE COURSE OF THE RESEARCH?**

Should you have any enquiry about this survey, kindly contact us at:

1.Hana Fateha bt Hashim (Researcher)
H/P: 014 – 6703946
Emel: hanafateha681@gmail.com

2.Associate Proffesor. Dr. Haliza Abdul Rahman (Supervisor)
H/P: 012 – 2111129
Emel: dr.haliza@upm.edu.my
Department of Environmental & Occupational Health,
Faculty of Medicine & Health Sciences,
Universiti Putra Malaysia,

**9. CONSENT**

I …… Identity Card No. …… address…… ……... ……..hereby voluntarily agree to take part in the research stated above *(clinical /drug trial/video recording/ focus group/interview-based/ questionnaire-based).

I have been informed about the nature of the research in terms of methodology, possible adverse effects and complications (as written in the Respondent's Information Sheet). I understand that I have the right to withdraw from this research at any time without giving any reason whatsoever. I also understand that this study is confidential and all information provided with regard to my identity will remain private and confidential.

I* wish / do not wish to know the results related to my participation in the research

I agree/do not agree that the images/photos/video recordings/voice recordings related to me be used in any form of publication or presentation (if applicable)

* delete where necessary

Signature ……..…… Signature ……..…….
(Respondent) (Witness)

Date :…….….. Name :…….…..

I/C No. :…….…..

I confirm that I have explained to the respondent the nature and purpose of the above-mentioned research.

Date ……..…… Signature ……..…….
(Researcher)

# APPENDIX B

# QUESTIONNAIRES

Date/ *Tarikh:* | | ID No: | |


| **NO.** | **RESEARCH TITLE/ *TAJUK KAJIAN*** | **RESEARCHER NAME/ *NAMA PENGKAJI*** |
|---|---|---|
| 1. | KNOWLEDGE AND PRACTICE ON GREEN PURCHASE OF PERSONAL CARE PRODUCTS AMONG UNDERGRADUATE STUDENTS IN UNIVERSITI PUTRA MALAYSIA | HANA FATEHA BT HASHIM |

**Instruction/ *Arahan***

This questionnaire contains 4 sections:
*Borang kaji selidik ini mengandungi 4 bahagian*:

1. Section A: Socio demographic characteristics
   *Bahagian A: Latarbelakang sosio-demografik*
2. Section B: General question on green purchase of personal care product
   *Bahagian B: Soalan umum mengenai pembelian hijau produk penjagaan diri*

3. Section C: Knowledge on green purchase of personal care products
   *Bahagian B: Pengetahuan mengenai pembelian hijau produk penjagaan diri*

4. Section D: Practice on green purchase of personal care products
   *Bahagian C: Sikap mengenai pembelian hijau produk penjagaan diri*

5. Section E: Recommendation
   Bahagian E: Cadangan

Please be informed that you have been chosen as the study respondent. Kindly answer all questions and follow the given instructions. All data obtained from this questionnaire will only be used for study purpose. Thank you for your cooperation. If you have any questions, please reach out to this research coordinator, Associate Professor Dr Haliza Abdul Rahman, at 03-89472643 and email dr.haliza@upm.edu.my/ *Dimaklumkan bahawa anda telah dipilih sebagai responden di dalam kajian ini. Sila jawab semua soalan dan ikut arahan yang telah ditetapkan. Semua data yang diperolehi hanya akan digunakan bagi tujuan pembelajaran sahaja. Terima kasih atas Kerjasama anda.sekiranya anda mempunyai sebarang pertanyaan, sila kemukakan kepada penyelia bagi penyelidikan ini, Prof Madya Dr Haliza Abdul Rahman, di talian 03-89472643 dan emel dr.haliza@upm.edu.my*

## SECTION A: SOCIO DEMOGRAPHIC CHARACTERISTICS

## *BAHAGIAN A: LATARBELAKANG SOSIO-DEMOGRAFIK DAN CIRI-CIRI TEMPAT TINGGAL*

**INSTRUCTIONS:** Please tick your answer and fill in the blanks for the questions below
**ARAHAN:** *Sila tandakan jawapan anda dan isi jawapan di ruang yang disediakan untuk soalan dibawah*

1. Age/ *Umur*: _____

2. Gender/*Jantina*

☐ Male/ *Lelaki*

☐ Female/ *Perempuan*

3. Race/ *Bangsa*:

☐ Malay/ *Melayu*  ☐ Indian/ *India*

☐ Chinese/ *Cina*  ☐ Others/ *Lain-lain*
Specify/ *Nyatakan*: _____

## SECTION B: GENERAL QUESTION ON GREEN PURCHASE OF PERSONAL CARE PRODUCTS

## *BAHAGIAN B: SOALAN UMUM MENGENAI PEMBELIAN HIJAU PRODUK PENJAGAAN DIRI*

**INSTRUCTIONS:** Please tick your answer and fill in the blanks for the questions below

**ARAHAN:** *Sila tandakan jawapan anda dan isi jawapan di ruang yang disediakan untuk soalan dibawah*

1. Do you ever heard of "Green Purchasing"?
*Adakah anda pernah mendengar pembelian hijau?*

a. Yes*/Ya*
b. No/*Tidak*

2. How often do you use personal care product?
*Berapa kerap anda menggunakan product penjagaan diri?*

a. Always/*Selalu*
b. Sometime*/Kadang-kadang*
c. Seldom*/Jarang*
d. Never*/Tidak pernah*

3. What type of personal care product that you use?
*Apakah jenis product penjagaan diri yang anda gunakan?*

a.Sunscreen/*Krim pelindung matahari*
b. Hair dye/*Pewarna rambut*
c. Deodorants/Deodoran
d. Powder/*Bedak*
e. Shampoo/*Shampu*
f. Nail polish/*Pengilat kuku*
g. Shower gel/*Gel mandian*
h. Makeup/*Alat solek*
i. Hair gel/*Gel rambut*
j. Perfumes/*Minyak wangi*
k. Hand sanitizer/*Pensanitasi tangan*
l. Others/*lain-lain*

4.How much money do you spend a month for personal care products?

*Berapakah wang yang anda gunakan untuk produk penjagaan diri dalam masa sebulan?*

a. Less than RM 50/ *Kurang daripada RM 50*

b. RM50-RM10/ *RM50-RM10*

c. RM 100-RM 200/ *RM 100-RM 200*

d. More than RM 200/ *Lebih daripada RM 200*

5. What do you prefer when purchase personal care products?
*Apakah yang anda suka ketika membuat pembelian produk penjagaan diri?*

a. Cheap/*Murah*

b. Ingredient/*Bahan*

c. Easily available/*Mudah didapati*

d. Environmental packaging/*Pembungkusan alam sekitar*

6.Do you think personal care products can cause problem?
*Adakah anda rasa produk penjagaan diri boleh menyebabkan masalah?*

a. Yes*/Ya*

b. No/*Tidak*

## SECTION C: KNOWLEDGE ON GREEN PURCHASE OF PERSONAL CARE PRODUCTS

## *BAHAGIAN C: PENGETAHUAN MENGENAI PEMBELIAN HIJAU PRODUK PENJAGAAN DIRI*

**INSTRUCTIONS:** Please tick your answer and fill in the blanks for the questions below
**ARAHAN:** *Sila tandakan jawapan anda dan isi jawapan di ruang yang disediakan untuk soalan dibawah*

| **No.** | **Questions/*Soalan*** | **True/ *Betul*** | **False/ *Salah*** |
|---|---|---|---|
| 1. | There are harmful ingredients in personal care products.<br>*Terdapat bahan-bahan berbahaya dalam produk penjagaan diri.* | | |
| 2. | Harmful ingredients in personal care products can cause ill effect to human.<br>*Bahan-bahan berbahaya dalam produk penjagaan diri boleh menyebabkan kesan buruk kepada manusia.* | | |
| 3. | There is law related to safe personal care products in Malaysia.<br>*Terdapat undang-undang yang berkaitan dengan produk penjagaan diri yang selamat di Malaysia.* | | |
| 4. | Personal care products claimed to be hypoallergenic, dermatologist-tested but these may still cause allergic reaction.<br>*Produk penjagaan diri didakwa boleh menyebabkan alahan, diuji oleh pakar dermaologi tetapi masih boleh menyebabkan reaksi alahan.* | | |
| 5. | Personal care product can endanger marine life.<br>*Produk penjagaan diri boleh membahayakan hidupan laut.* | | |
| 6. | Environmental packaging products are recyclable.<br>*Produk pembungkusan lestari boleh dikitar semula.* | | |

| | | | |
|---|---|---|---|
| 7. | Most of personal care product packaging are made up from plastic.<br>*Kebanyakan pembungkusan produk penjagaan diri terdiri daripada plastic.* | | |
| 8. | Plastics packaging are harmful to human health.<br>*Pembungkusan plastik berbahaya kepada kesihatan manusia*. | | |
| 9. | Plastic packaging polluting waterways and ocean<br>*Pembungkusan plastik akhirnya mencemarkan laluan air dan lautan.* | | |
| 10. | I have enough knowledge about environmental-friendly personal care product.<br>*Saya mempunyai ilmu yang cukup mengenai produk penjagaan diri mesra alam.* | | |
| 11. | Many countries already promote green living.<br>*Banyak negara telah menggalakkan kehidupan hijau.* | | |
| 12. | Malaysia already encourage the green purchasing on personal care product.<br>*Malaysia telah menggalakkan* pembelian hijau untuk product penjagaan diri. | | |
| 13. | Green products have more environmental benefits than other products<br>*Produk hijau mempunyai lebih banyak manfaat alam sekitar daripada produk lain.* | | |
| 14. | To keep the environment beautiful, clean and not threatened, we need to be free of plastic products.<br>*Untuk memastikan alam sekitar cantik, bersih dan tak terancam kita perlu bebas daripada produk plastik.* | | |
| 15. | Green purchasing of personal care product can reduce the amount of plastic-based waste at the landfill.<br>*Embelin produk penjagaan diri hijau dapat mengurangkan jumlah sisa berasaskan plastik di tapak pelupusan sampah.* | | |

## SECTION D: PRACTICE ON GREEN PURCHASE OF PERSONAL CARE PRODUCTS

## *BAHAGIAN C: AMALAN MENGENAI PEMBELIAN HIJAU PRODUK PENJAGAAN DIRI*

**INSTRUCTIONS:** Please tick your answer and fill in the blanks for the questions below
**ARAHAN:** *Sila tandakan jawapan anda dan isi jawapan di ruang yang disediakan untuk soalan dibawah*

| Strongly Disagree/ *Sangat Tidak Setuju* | Disagree/ *Tidak Setuju* | Agree/ *Setuju* | Strongly Agree/ *Sangat Setuju* |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

| **No.** | **Questios/** ***Soalan*** | **Scale/*Skala*** | | | |
|---|---|---|---|---|---|
| | | **1** | **2** | **3** | **4** |
| 1. | I will share information about personal care products hazard.<br>*Saya akan berkongsi maklumat mengenai bahaya produk penjagaan diri.* | | | | |
| 2. | I read the labels when purchasing personal care products.<br>*Saya membaca label ketika membeli produk penjagaan diri.* | | | | |
| 3 | I can understand whether a product is environmentally friendly from the information about the content of the product.<br>*Saya dapat memahami produk itu adalah mesra alam dari maklumat mengenai kandungan di produk itu.* | | | | |
| 4 | I have a big interest in organic, ecological and natural personal care products.<br>*Saya mempunyai minat yang besar dalam produk penjagaan diri organik, ekologi dan semulajadi.* | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 5. | I always educate my family and friend to purchase green personal care products.<br>*Saya sering mendidik ahli keluarga dan kawan untuk membeli produk penjagaan diri yang hijau.* | | | | |
| 6. | I often buy environmental personal care products with my family and friend.<br>*Saya sering membeli produk penjagaan diri alam sekitar dengan keluarga dan rakan saya.* | | | | |
| 7. | I willing to spend more on environmental-friendly personal care product if they are available.<br>*Saya sanggup berbelanja lebih untuk produk penjagaan diri yang mesra alam jika mereka boleh didapati.* | | | | |
| 8. | I will recommend to my family and friend to use environmental- friendly personal care product when buying the products.<br>*Saya akan mengesyorkan kepada keluarga dan rakan saya untuk menggunakan produk penjagaan diri yang mesra alam apabila membeli produk.* | | | | |
| 7. | Plastic packaging of personal care product should be replaced with environmentally friendly packaging such as bamboo and paper packaging.<br>*Pembungkusan plastik produk penjagaan diri perlu digantikan dengan bungkusan mesra alam seperti buluh dan pembungkusan kertas.* | | | | |
| 9. | I intend to buy environmentally friendly personal care products because it is less polluting.<br>*Saya berhasrat untuk membeli produk penjagaan diri yang mesra alam kerana ia kurang mencemarkan.* | | | | |
| 10. | I intend to buy environmentally friendly personal care products because it is protecting the environment more.<br>*Saya berhasrat untuk membeli produk penjagaan diri yang mesra alam kerana ia lebih melindungi alam sekitar.* | | | | |
| 11. | I intend to switch to another brand for ecological reasons.<br>*Saya berhasrat untuk beralih kepada jenama lain atas sebab-sebab ekologi.* | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 12. | I prefer personal care products manufactured from recycled materials.<br>*Saya lebih suka produk penjagaan diri yang dihasilkan daripada bahan kitar semula.* | | | | |
| 13. | If I learn that the manufacturing process of a product I bought is harming the environment, I stop buying that product.<br>*Jika saya belajar bahawa proses pembuatan produk yang saya beli membahayakan alam sekitar, saya berhenti membeli produk itu.* | | | | |
| 14. | I always get the information about the negative impact of plastic packaging and its effect towards the environment.<br>*Saya selalu mendapatkan maklumat mengenai kesan negatif pembungkusan plastic dan kesannya terhadap alam sekitar* | | | | |
| 15. | If I found the plastic packaging product litters everywhere, I will take it and throw it according to the designated recycling bins category.<br>*Jika saya menemui sampah produk pembungkusan plastik di mana-mana, saya akan mengambilnya dan membuangnya mengikut kategori tong kitar semula yang ditetapkan.* | | | | |
| 16. | I will purchase the environmental friendly packaging product to replace the plastic packaging product.<br>*Saya akan membeli produk bungkusan mesra alam itu untuk menggantikan produk bungkusan plastik.* | | | | |
| 17. | I will take care the environment to prevent it from deteriorate.<br>*Saya akan menjaga alam sekitar untuk mengelakkannya daripada merosot.* | | | | |
| 18. | I will join or participate in the environmental program that being held at school or home area.<br>*Saya akan menyertai atau menyertai program alam sekitar yang diadakan di sekolah atau kawasan rumah.* | | | | |
| 19. | I will deliver the positive impacts of green purchasing on personal care product to others.<br>*Saya akan menyampaikan kesan positif pembelian hijau ke atas produk penjagaan diri kepada orang lain.* | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 20. | I am not interested to purchase the environmentally friendly personal care product.<br>*Saya tidak berminat untuk membeli product penjagaan diri mesra alam sekitar.* | | | | |

## SECTION E: RECCOMENDATION

## *BAHAGIAN E: CADANGAN*

**INSTRUCTIONS:** Please tick your answer and fill in the blanks for the questions below
**ARAHAN:** *Sila tandakan jawapan anda dan isi jawapan di ruang yang disediakan untuk soalan dibawah*

*:* What do you think the most appropriate ways that can be taken to improve green purchasing on personal care products?

*Apakah cara yang paling sesuai yang boleh dilakukan anda bagi meningkatkan pembelian hijau untuk produk penjagaan diri?*

| | |
|---|---|
| | Purchasing environmentally friendly personal care products/<br>*Membeli produk penjagaan diri yang mesra alam* |
| | Environmental education should be taught in schools/<br>*Pendidikan alam sekitar harus diajar di sekolah* |
| | Increasing awareness among the community through education/<br>*Meningkatkan kesedaran dalam kalangan masyarakat melalui pendidikan* |

If any other recommendation, please specify:

_____
_____
_____
_____

*Jika terdapat cadangan lain, sila nyatakan*

THANK YOU/*TERIMA KASIH*

# APPENDIX C

# ETHICAL APPROVAL

**ETHICS COMMITTEE FOR RESEARCH INVOLVING HUMAN SUBJECTS (JKEUPM)**
**UNIVERSITI PUTRA MALAYSIA**

| | | |
|---|---|---|
| **Research title** | : | **Knowledge and Practice on Green Purchasing of Personal Care Product among Undergraduate Students in UPM.** |
| **Study Site** | : | **Universiti Putra Malaysia** |
| **JKEUPM Ref No.** | : | **JKEUPM-2020-485** |
| **Researcher** | : | **Hana Fateha Hashim** |
| **Supervisor** | : | **Assoc. Prof. Dr. Haliza Abdul Rahman** |

Documents received and reviewed with reference to the above study:

1. Ethics Application Form, Version 2 dated 3/2/2021
2. Respondent Information Sheet & Consent (English), Version 2 dated 3/2/2021
3. Respondent Information Sheet & Consent (Malay), Version 2 dated 3/2/2021
4. Proposal (English), Version 3 dated 26/3/2021
5. Questionnaire/Interviews (English), Version 2 dated 3/2/2021
6. Questionnaire/Interviews (Malay), Version 2 dated 3/2/2021
7. Curriculum Vitae of:
    a. Assoc. Prof. Dr. Haliza Abdul Rahman

The University Research Ethics Committee, Universiti Putra Malaysia (JKEUPM) operates in accordance to the ICH-GCP Guidelines.

Decision by JKEUPM:

[X] Approved

[X] **Permission MUST BE OBTAINED from the respective hospitals/ institutions before conducting the research**

[ ] Disapproved

Please note that the approval is **VALID UNTIL 5 APRIL 2022**

Researchers should comply with the following:

I. Complete a Study Final Report upon study completion (Form 3.2).

II. Ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.

III. Applicable for Clinical Trial Studies and Clinical interventional Studies only: Progress Report has to be submitted to JKEUPM at every 6 months from the date of approval (Form 3.1). Report occurrences of all Serious Adverse Events (SAEs), Suspected Unexpected Serious Adverse Reaction (SUSARs) and Protocol Deviation/ Violation at all JKEUPM approved sites to