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TOWARDS SUSTAINABLE CONSUMPTION: AN EXAMINATION OF THE USAGE OF RECYCLABLE AND BIODEGRADABLE PRODUCTS AMONG MALAYSIANS

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Abstract

One of the 2030 agendas for Sustainable Development Goals (SDGs) is to achieve sustainable management and efficient use of natural resources, substantially reduce waste production through prevention, reduction, recycling, and reuse, and encourage companies to adopt sustainable practices. However, this effort becomes difficult due to a need for more awareness among Malaysian. Solid Waste Management and Public Cleaning Corporation (SWCorp) has highlighted that the production of daily garbage among Malaysians has recorded an increase of 100.75 per cent. Recognising the importance of reducing waste and protecting the environment, this study examines the contribution of price, green knowledge, and environmental awareness towards using recyclable and biodegradable products practised by the Malaysian public. By employing correlational and regression analyses, the study analysed the final data of 316 respondents representing the Malaysian public in Klang Valley. The questionnaire form for the study was modified from previous studies, and data were analysed using SPSS 23 software. The study's findings show a significant relationship between price, green knowledge, and environmental awareness toward using recyclable and biodegradable products. The study's findings also show that environmental awareness contributes as much as 78.7% to the usage of recyclable and biodegradable products. This study suggests several strategies to improve the usage of recyclable and biodegradable products. This empirical study validates the theory of planned behaviour (TPB) framework for explaining sustainable consumption in Malaysia.

Keywords*: Price; Green Knowledge; Environmental Awareness; Recyclable and Biodegradable Products; Malaysia*

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INTRODUCTION

Since 1970, the issue of global warming has begun to be recognised by the global community (Al-Ghussain, 2019). Global warming is an imbalance ecosystem resulting from increasing the average temperature of the atmosphere, sea, and land. The increase in the earth's temperature will trigger various events that can endanger human survival and destroy several animal species and plants (Yoro & Daramola, 2020). According to an analysis released by the US National Aeronautics and Space Administration (NASA), the earth's average surface temperature in 2022 will be the same as in 2015, the fifth warmest year on record (Bernama, 2023). This warming trend is caused by human activities that contribute significant amounts of greenhouse gas emissions to the atmosphere and ongoing long-term planetary impacts.

Moreover, population growth, rapid development, advanced economy, and rising living standards have contributed to solid waste generation over time, especially in urban areas (Mejia, 2020). The report found that Malaysians produce about 37,890 tons of waste daily, with at least 1.17 kilograms (kg) generated per individual. The number is estimated to continue to increase as the population increases, contributing to the saturation of landfill sites throughout the country (Suhaila, 2019). Hence the production of solid waste, especially domestic waste, should be reduced to avoid increasing global warming. In addition, it can also reduce the government's burden every year for maintenance costs such as collection works and collection and waste transportation to the landfill (Kabirifar et al., 2020). As the United Nations (UN) Summit has approved the sustainable development agenda containing 17 Sustainable Development Goals (SDGs), reducing waste will support SDG 12, Responsible Consumption and Production. This refers to the efficient use of natural resources, minimising the use of hazardous substances, and reducing pollution and waste production along the way to the product or service life cycle (Gasper, Shah, & Tankha, 2019). Through the approach life cycle, all parties need to consider environmental impact and efficiency in using resources at each stage of production and usage. In such a situation, the concept of green consumerism emerges. Green consumerism is a continuation of the global consumer protection movement that started with consumer awareness of their rights to obtain suitable, safe, and environmentally friendly (do Paço, Shiel, & Alves, 2019).

From the marketing side, the dynamic market accompanied by changes in consumer behaviour makes marketers find new ways to market products. Companies begin to apply a marketing strategy called green marketing. Green marketing integrates a wide range of activities, including product modification, changes in the production process, packaging changes, and advertising (Szabo & Webster, 2021). In order to practice green consumption, consumers must be able to differentiate products and environmentally friendly products. Among the features of products and services of natural enemies are as follows 1) cause pollution or destruction of the current environment, 2) use many energy materials during manufacture, 3) cause excessive wastage, either due to excessive packaging or because of the short period of use, 4) using materials from species that are becoming extinct or from the endangered environment, 5) involves the use of animals either for poisoning testing or another purpose, and 6) causing adverse effects for users of other countries (Sana, 2020).

The Body Shop is one example of a Malaysian organisation that brought a mission of kindness to the environment through its products. They champion a cruelty-free or safe production system for the environment and living beings. One of the Body Shop's programs that attract many consumers is upcycling or recycling packaging. Consumers can exchange pre-packaged bottles with shopping vouchers at every official store of the Body Shop. In addition to exchanging vouchers, consumers are instructed to reuse or reuse packaging for various needs. Moreover,

in the Coffee Bean & Tea Leaf, as part of their pledge to be more environmentally friendly, they introduce and use edible rice straws, which are biodegradable, edible, and 100% turtle-friendly.

In this study, the Theory of Planned Behaviour (TPB) suggested by Ajzen (1991) was used to base this study. From the theoretical point of view of social psychology, TPB is also often modelled and used in studies to explain various situations of human behaviour. This theory considers that attitudes, subjective norms, and perceived behavioural control influence the intention to perform certain behaviours. TPB is the most detailed and descriptive theory of behaviour, with the fewest variables usually considered and formed by researchers to understand behaviour in many areas, including sociology, psychology, education, and marketing (Bosnjak, Ajzen, & Schmidt, 2020). TPB insists that human behaviour is influenced by three constructs which are 1) attitude that leads to behaviour that is desired or unwanted, 2) subjective norms, which are effects or perceptions of social pressure, and c) notions of behavioural control. All three constructs contribute to the initiation of intentions and, subsequently, to the implementation of a behaviour. The usage of recyclable and biodegradable products behaviour is a person's attitude toward consuming or making purchases of products with minimal environmental impact (Nimri, Patiar, & Jin, 2020). Based on TPB, human purchasing behaviour can be influenced by environmentally friendly intentions, divided into two aspects. These include purchasing green products, which leads to green products, and general environmental behaviour, such as minimising energy and resource consumption, reducing product waste, avoiding products and companies that are not environmentally friendly, and becoming an activist.

Previous studies have discovered that contextual factors are essential to increase the usage of recyclable and biodegradable products. Contextual factors are local conditions or situations such as the provision of facilities, the availability, price, and of recyclable and biodegradable products, and the involvement and inclination of an individual or community through demographic characteristics (Choi & Johnson, 2019; Heo & Muralidharan, 2019; Ranjan & Jha, 2019; Xu, Wang, & Yu, 2020). Several studies have determined the relationship between price and the perception of consumers on product quality (Sana, 2020; Kotler & Armstrong, 2008; Wang, Jiang, & Yu, 2020). Guo, Choi, and Shen (2020) empirically show that the price is the most valid information as an indicator of the quality of a product. Consumers are also willing to pay a certain amount for more environmentally friendly products due to their concern about environmental problems (Li et al., 2020). Conscious consumers are always considered ecological issues when making purchases.

On the other hand, some consumers want to avoid paying more for environmentally friendly products, not because they have yet to consider ecological problems but due to economic difficulties due to the high price of environmentally friendly products (Ranjan & Jha, 2019). Generally, willingness to pay the premium price will decrease if a price increase is consistent with the law of demand (Shen et al., 2019). Moreover, green knowledge and environmental awareness are also considered critical contextual factors influencing someone to use recyclable and biodegradable products (Awan, Arnold, & Gölgeci, 2021; Bangsa & Schlegelmilch, 2020; Bhutto et al., 2019). Empirical studies found that green knowledge, understanding, and perception of the community on green products depend on the extent to which information is obtained (Heo & Muralidharan, 2019). Newspapers and magazines are the main channels the general public uses to obtain the latest knowledge and information. The media and journalists can be mediators to translate the complex ideals of science into simple language. Increasing environmental awareness is also one of the essential elements in building the country's capacity toward sustainable development (Qiu et al., 2020). Therefore, this study examines the influence of price, green knowledge, and environmental awareness on the usage of recyclable and biodegradable products. The second is to examine the most robust predictor influencing the usage of recyclable and biodegradable products.

Sustainable Production: Recyclable Products versus Biodegradable Products

Recycling is breaking waste into small pieces to make it a new product (Dilkes-Hoffman et al., 2019). Among the examples are baskets made from newspapers or magazine papers, decorative flowers made from rubber leaves, earrings and women's jewellery from a typewriter and computer keys, new clothes by patching them with used cloth or denim, and handbags and backpacks from scraps of cloth or discarded cloth (see Figure 1). These handicrafts are produced from waste materials using the creativity and finesse of handiwork, and they can be sold at a relatively high price. Some recyclable products are recycled more effectively than others. Milk bottles, water bottles, and the packaging of some personal hygiene products are made of polyethene terephthalate (PET). This strong yet lightweight plastic is fully recyclable, meaning PET can be completely broken down and reused to make more PET products (Nisticò, 2020). Unfortunately, this recycling is more expensive, and the manufacturers do not use it necessarily (Sana, 2020; Wang, Jiang, & Yu, 2020). The manufacturer and seller need to have a sense of love for the environment and want to contribute to reducing the amount of garbage by recycling the available waste, having the creativity to transform waste materials into something valuable, and having the knowledge to market their green products. Examples of best practices that sellers can follow are H&M and UNIQLO Malaysia. These famous clothing stores have received used cloth fabric from various brands. Then, Palmy turned agricultural waste into handmade paper and textile goods made from pineapple leaves, bananas, stems, and bamboo shoots. Cultured from the desire to save the environment, they aim to stop the open burning of waste and lessen forest logging.

On the other hand, a biodegradable product refers to a product that can safely break down into natural forms, such as carbon dioxide or water, without leaving any nasty chemicals (Dilkes-Hoffman et al., 2019). Biodegradable refers to all things easily broken down by natural agents. Natural agents include water, oxygen, microorganisms, and others. On the other hand, non-biodegradable materials are never broken down or destroyed by environmental factors. Biodegradable materials include food waste such as vegetables and fruits, dead plants and animals, chicken, eggshells, paper materials, and garden waste. Non-biodegradable items include plastic, polystyrene, metal, plastic, aluminium cans, tires, and others (Jiang et al., 2020). Examples of biodegradable products are sugarcane food packaging, starch cutlery, wooden cutlery, bio-carrier bags, starch cups, starch straws, and paper straws. Local companies such as Coqoon offer face masks made of 100% natural, biodegradable, and recyclable materials.

Another example is plastic from shells (i.e., Chitosan). Chitosan is a biopolymer from the skin waste of crustacean animals (e.g., shrimp and crab), insects, and fungi, and Chitosan could be an alternative to plastic. Chitosan can quickly decompose with the help of hydrolysed enzymes (Priyadarshi & Rhim, 2020). In addition, another uniqueness can be seen in the fact that Chitosan can be eaten. Biodegradable materials can be decomposed in a few days or months, while non-degradable items may take thousands of years or cannot be broken down and remain in their original form. Identifying commodities and separating waste according to biodegradable and non-degradable labels is crucial in waste disposal and management. For example, items that do not decompose can be recycled and used again. This can reduce the environmental hazards caused by these non-biodegradable products and create a better and greener planet.

In Malaysia, recyclable and biodegradable products can be identified through eco-labelling. Eco-label is a labelling system for consumer goods (including food) produced to avoid environmental harm (Taufique et al., 2019). Eco-label makes it easier for consumers to choose environmentally friendly products. This voluntary scheme encouraged the business sector to produce environmentally friendly goods and services. For example, eco-labels can be used for goods that do not contain chlorofluorocarbons (CFCs). Eco-labels are also found on items that can

be recycled and items that are efficient and save energy. The Malaysian Energy Commission has developed an electricity efficiency labelling scheme in Malaysia. For example, refrigerators' energy efficiency is verified using test methods recognised and supported by the Energy Commission. A five-star Energy Rating indicates the highest energy savings (Hafizan, Hussein, & Noor, 2021).

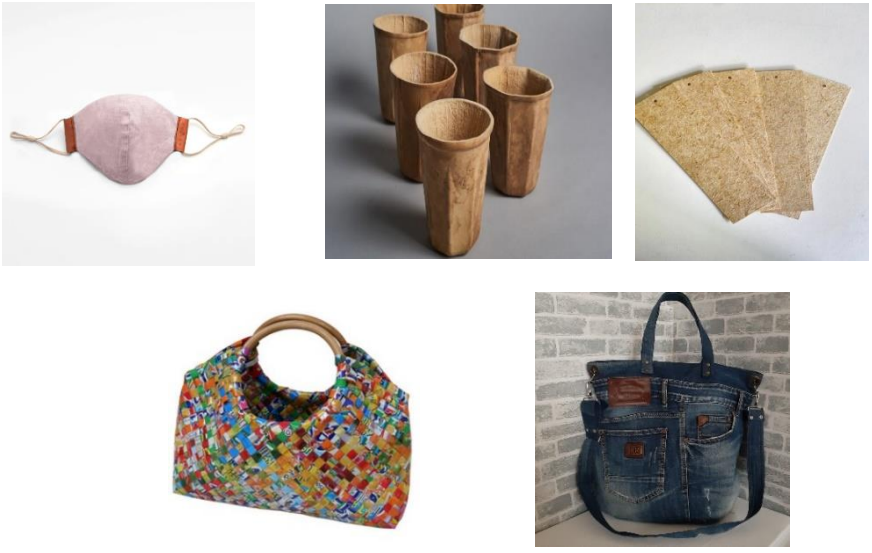

Figure 1: Recyclable and Biodegradable Products

Theoretical Orientation: Theory of Planned Behaviour

The theory of planned behaviour (TPB) by Ajzen (1991) is a conceptual basis for understanding, predicting, and changing human social behaviour. TPB advanced the theory of reasoned action (TRA) by adding a new construct: perceived behaviour control. TPB guides researchers in understanding how its components (i.e., attitude, subjective norm, and perceived behavioural control) can change individual behaviour. For this study, how consumers are changing their behaviour to consume recyclable and biodegradable products can be explained using the components. According to Ajzen (1991), intention plays a vital role in conducting behaviour. Attitudes toward behaviour and subjective norms is a fundamental aspect of influencing intention. According to the TPB, behaviour cooperates with intention and perceived control behaviour. Both perception and intention conduct behaviour as significant contributors to behavioural prediction.

Davis (1989) defines attitudes as positive or negative feelings from individuals. In other words, attitude is an assessment of liking or disliking an individual towards the behaviour. If the action to be taken gives an expected positive result, then this will form a positive attitude toward behaviour. However, if the individual's evaluation is negative, this will form a negative attitude. Therefore, it can be understood that attitudes are closely related to impressions of individuals to the benefits obtained from the implementation of an action. In creating a positive attitude, Malaysian households must see that using recyclable and biodegradable products can help preserve and conserve natural resources. Paper production requires trees to be cut down, destroying forests. Flora and fauna will lose their habitats and eventually become extinct because of human greed.

Therefore, using recyclable and biodegradable products is essential to preserve the nature that God has gifted. To inculcate a positive attitude, empirical studies discovered that a high level of knowledge of green practices and environmental awareness directly inculcate a positive attitude toward taking care of the environment and practising green practices.

Next, Ajzen (1991) defines subjective norms as other people's perceptions of the work or task that someone will do. In short, the subjective norm focuses on the impression of support from the social environment that strongly influences the implementation of specific behaviour. Typically, individuals who want to perform their behaviour will request recommendations or evaluations from the reference group. Social pressure from the reference group, considered necessary by the individual, will influence whether they want to perform the behaviour or vice versa (Al Zubaidi, 2020). If this group gives a positive assessment that supports reform, then this will simultaneously encourage the formation of behaviour.

On the other hand, if the reference group gives a negative assessment, this will result in rejection to implement the behaviour (Li et al., 2020). Hence, when every member of society discards the negative attitude and actions to protect the world from the continuous destruction of the environment, it will influence individual behaviour to use and consume recyclable and biodegradable products. Society needs to accept that humans and the environment need each other; humans need the environment for survival, and the environment needs protection from humans to continue its life. Apart from attitude and subjective norms, the perception of behavioural control is also a determining factor in predicting individual behaviour to accept a new practice, system, or technology (Wang et al., 2019). Panda et al. (2020) have broken down this control belief structure into three constructs: self-efficacy, resource-driven atmosphere, and technology. The perception of behavioural control is related to the individual's perception of his/her ability to control actions. This construct is reported to be able to influence intentions or the individual's desire to act. Products that have green value, for example, those that have the label "green," "eco-friendly," "organic," and "sustainable," are considered to be good for the environment.

Unfortunately, products that have green value are judged to be more expensive than regular products, which could control individuals from using recyclable and biodegradable products (Sana, 2020; Kotler & Armstrong, 2008; Wang, Jiang, & Yu, 2020). Environmentally friendly production requires more costs than average conventional production. The buyer's interest is considered in determining the market price. Many buyers still prioritise low prices over product quality (Guo, Choi, & Shen, 2020; Li et al., 2020). Thus, companies producing eco-friendly products that spend more capital must compete with low-price commercial products. The sellers must implement several business strategies to promote their products (Shabbir et al., 2020). For example, it is by giving a sample of products directly to the market or potential customers. By doing this, the customers can test the product first, which might influence their future purchasing decision. An effective way to promote products is by rewarding loyal customers. This reward can be a discount, coupon, money, or a product currently being marketed.

Determinants of the Usage of Recyclable and Biodegradable Products

Price and its Influence on the Usage of Recyclable and Biodegradable Products

Price is the amount of money charged for a product or service or the value customers exchange to obtain benefits from owning or using a product or service (Sana, 2020; Kotler & Armstrong, 2008). According to Kotler and Armstrong (2008), price indicators are divided into four: affordability of the price, compatibility with product quality, price competitiveness, and price-benefit ratio. Price is an attribute that consumers consider when deciding to purchase a product (Wang, Jiang, & Yu, 2020). According to Ampountolas, Shaw, and James (2019), several

factors can influence the pricing decision; These include: 1) product demand, 2) target market share, 3) market reaction, 4) screen chain penetration, 5) distribution channels and promotions, and 6) production costs. Consumers rarely choose environmentally friendly products if the price is higher than regular products. However, some groups of environmentally conscious who are willing to pay premium prices to buy environmentally friendly products if the products meet the criteria of environmentally friendly products without any reduction in quality (Guo, Choi, & Shen, 2020; Li et al., 2020). For consumers who need help understanding the technical aspects of purchasing products, the price often becomes the only factor that can be easily understood. Often, the price is used as a quality indicator (Ranjan & Jha, 2019). This gives rise to the view of marketing that a price is a monetary unit or measure, including goods or services that can be exchanged to obtain the right of ownership or use of something goods or services (Shen et al., 2019). Price indicates the overall sacrifice consumers make to obtain specific products or services. This sacrifice includes the money that must be paid to the marketer, the value of time needed to obtain products and services, transportation costs, taxes, and shipping costs. Hence, the desire of consumers to pay a certain amount of money for environmentally friendly products is more due to their concern for environmental problems (Shabbir et al., 2020). Pricing should play an essential role in every enterprise.

Green Knowledge and its Influence on the Usage of Recyclable and Biodegradable Products

Knowledge related to the environment is interpreted as a series of ecological insights owned by personnel about various topics which concern the environment (Sun & Wang, 2019). Knowledge from each individual about an environmental issue can significantly affect the chain of decision-making actions, including purchasing recyclable and biodegradable products (Choi & Johnson, 2019). Product knowledge is all information that contains accurate information stored in the consumer's memory, which will later provide information that can help as a consideration in determining further action (Heo & Muralidharan, 2019). Product knowledge is an important matter that the marketer must communicate in indicating the product to be offered to consumers (Bangsa & Schlegelmilch, 2020). The importance level of brand knowledge will significantly influence the intention to purchase a product. Consumers with higher knowledge will be more realistic in product selection, especially when selecting a product suitable with natural ingredients (Kumar, Prakash, & Kumar, 2021). According to Zhang et al. (2019), there are four indicators in product knowledge as follows: 1) product attributes are all physical aspects of a product and service that can be seen or felt, 2) physical benefits that are the impact when consumers interact with products used, 3) psychological benefits that are the social impact that consumers get when interacting with a product, and 4) the values obtained after the consumer uses the product, for example, is the consumers will feel more comfortable and enjoy using the product which is based on natural ingredients. Thus, the seller needs to find strategies to enhance the consumer experience in purchasing and using a product (Li et al., 2020). For instance, The Body Shop is actively promoting its natural product, and most consumers know well about product type, shape and packaging, and product quality. In addition, product knowledge is one factor influencing buying interest in products The Body Shop company produces.

Environmental Awareness and its Influence on the Usage of Recyclable and Biodegradable Products

Environmental concern refers to community awareness of the environmental problem and efforts to overcome it. Research by Xu, Wang, & Yu (2020) shows that people who care about environmental issues are ready to buy environmentally friendly products. Heo and Muralidharan (2019) emphasise that consumers stop buying or consuming harmful products to health and the environment. Many marketers increase and motivate customers through different channels and campaigns to switch from conventional products to environmentally friendly products (Awan, Arnold, & Gölgeci, 2021). With time, consumers are becoming more aware and interested in the environment. The research conducted by Bhutto et al. (2019) about environmental concerns shows that women

care more about environmental safety than men. While according to Salem and Alanadoly (2020), committed people are more sensitive to environmental concerns, considerate of their responsibility, and always participate to ensure environmental safety. Consumer purchase decisions depend on product performance and environmental impact (Panda et al., 2020). For example, they believe that environmentally friendly products help reduce environmental pollution. Berger (2019) said that advertisements for environmentally friendly products attract consumers, and consumers are more likely to buy them. The Internet facility has given a new dimension to society's environmental awareness and actions. Internet-enabled environmental issues to be presented and discussed, indirectly affecting the public's awareness of environmental problems (Qiu et al., 2020). Based on the reasoning, this study attempts to test several related hypotheses, namely:

H1: There is a significant relationship between price and the usage of recyclable and biodegradable products among Malaysian.
H2: There is a significant relationship between green knowledge and the usage of recyclable and biodegradable products among Malaysian.
H3: There is a significant relationship between environmental awareness and the usage of recyclable and biodegradable products among Malaysian.

Based on the literature review and previous research findings, the model and research hypothesis are shown in Figure 2.

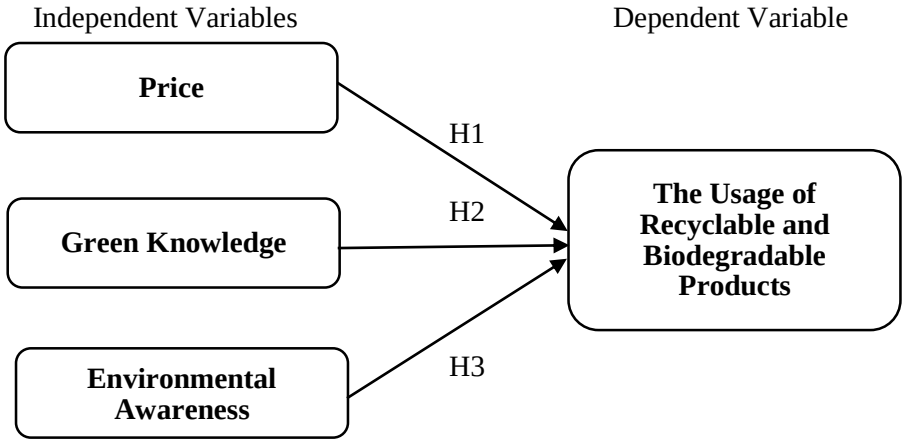

Figure 2: Conceptual Model

METHODOLOGY

A quantitative research method was chosen for this study. The approach used to collect data is a questionnaire. This study covers a group of Malaysian citizens, including women and men residing in Klang Valley. The selected sample is random and not limited by social status. Through this method, the results and findings of the study are more convincing and meaningful to apply to the entire population. Green (1991) recommends a calculation formula $N \geq 50 + 8$ m for the regression analysis, where m is the number of predictor variables in determining the appropriate sample size. Based on the formula, this study's minimum sample size is (50 + 8X3) = 74 respondents. A total of 316 respondents have responded to the questionnaire. A questionnaire was distributed via Google form

by using social media and e-mail. The questionnaire survey used in this research was adapted from Kong et al.' (2014) and Witek and Kuźniar's (2020)' studies. This questionnaire used a Likert scale with answer options from Strongly Disagree to Strongly Agree. Table 1 summarises the instrument of the study.

Table 1: Measurement of the Variables

Variable	Items
Price	1. Recyclable and biodegradable products are not expensive 2. The price affects the purchase of recyclable and biodegradable products 3. I can purchase recyclable or biodegradable products 4. I feel satisfied with the quality of the recyclable or biodegradable products that I purchased 5. I feel safe and secure when I use recyclable or biodegradable products
Green Knowledge	1. I know what recyclable products are 2. I know what biodegradable products are 3. I know the packaging that is made from recyclable material 4. I know the packaging that is made from recyclable material 5. I know the packaging is biodegradable 6. I know reusable packaging 7. I know the product I purchase is the product has no excessive packaging 8. I know that recyclable and biodegradable products were included in the green product category
Environmental Awareness	1. Green advertisements are attractive 2. I purchased a green product because I know plastics can harm the environment. 3. I purchased green products because they can help minimize fossil fuel usage. 4. I purchased green products because they are environmentally friendly 5. The information on green products usually easy to understand 6. Overall, I am satisfied with the information currently available on the eco-labels of the products I purchase

The Usage of Recyclable and Biodegradable Products	1. I use recyclable and biodegradable products to help minimize environmental problems 2. I will purchase more recyclable and biodegradable products in the future because of their positive environmental contribution 3. I am willing to spend money and time and take advantage of any opportunities to use recyclable and biodegradable products 4. I learn more about a recyclable and biodegradable product so that I can make better green purchasing decisions 5. I believe that using recyclable and biodegradable products will reduce the amount of waste in landfills or incinerators 6. I feel convinced to use recyclable and biodegradable products because they release fewer harmful substances rather than traditional plastics

Before this study was conducted, the researchers first carried out a pre-test to determine the questionnaire's goodness of measure. This test is carried out by choosing a total of 30 respondents who have the characteristics of an actual sample. Several statistical tests were carried out using the Statistical Package for the Social Sciences (SPSS) Version 23. The first tests are Cronbach's Alpha to measure reliability, the Kaiser-Meyer-Olkin (KMO) Test, and Bartlett's Test to test goodness-of-fit and factorial analysis. Reliability is an index that shows the extent to which measurement results are consistent. According to Nunnally and Bernstein (1994), the accepted rule is where Cronbach alpha (α) 0.6-0.7 is acceptable and reliable, and 0.8 or more is at an excellent level. The KMO test score for all construct questionnaire items is 0.791, with Bartlett's Test of Sphericity significant at 0.000. Next, the normality test aims to test whether the regression model has a normal distribution. The basis of decision-making can be based on determining the normality of the data can be measured by looking at the skewness value and kurtosis.

According to Kline (2005), the skewness and kurtosis values should fall within the range of -3 to +3 and -10 to +10. Correlation analysis is used to determine whether there is a relationship between the independent and dependent variables. Then, multiple regression analysis is used to predict how much influence the independent variable has on the dependent variable. Before performing regression analysis, the multicollinearity test is conducted. This is to detect any intercorrelated between the independent variables. To determine multicollinearity, the study will examine the tolerance value or Variance Inflation Factor (VIF). When tolerance value > 0.1 and VIF < 10, it can be concluded that there is a symptom of multicollinearity between independent variables in the regression model.

RESULT AND DISCUSSION

Table 2 shows the background information of the respondents. The majority of respondents are male, with 166 respondents (52.5%), and 150 female respondents (47.5%). Most respondents were 18 to 29 years old (n=198, 62.7%). As for the highest education level, most respondents obtained Bachelor/s degree (n=139, 44%). In terms of working status, there are a total of 150 students (47.5%), followed by the public sector employee (n=82, 25.9%), private sector employees (n=59, 18.7%), self-employed (n=23, 7.3%), and other (n=2, 0.6%).

Table 2: Demographic Profile

No.	Profile	Frequency (n)	Percentage (%)
1	**Gender**		
	Male	166	52.5
	Female	150	47.5
2	**Age Group**		
	18 – 29 years old	198	62.7
	30 -39 years old	26	8.2
	40 – 49 years old	51	16.1
	50 – 60 years old	41	13
4	**Highest Education Level**		
	Sijil Pelajaran Malaysia (SPM)	58	18.4
	Sijil Tinggi Pelajaran Malaysia (STPM)/Foundation	50	15.8
	Diploma	68	21.5
	Bachelor's Degree	139	44
	Other	1	0.3
5	**Working Category**		
	Public sector	82	25.9
	Private sector	59	18.7
	Self – employed	23	7.3
	Student	150	47.5
	Other	2	0.6

The measurement of the mean score level is based on three levels, the mean score range is 1.00 to 2.33 is at a low level, the mean score range of 2.34 to 3.66 is at a moderate level, and the mean score value of 3.67 to 5.00 is at a high level. Based on Table 3, the mean value for environmental awareness (3.42), the usage of recyclable and biodegradable products (3.47), price (3.36), and green knowledge (3.40) are at a moderate level. This study data has a normal distribution because the skewness and kurtosis values are in the estimated range. The reliability of all variables is also above 0.60, which means that the instruments used are valid.

Table 3: Normality & Reliability Results

Variables	Mean	SD	Skewness	Kurtosis	Cronbach's Alpha	No. of Items
Price	3.36	1.30	- 0.288	- 0.986	0.872	5
Green Knowledge	3.40	1.35	- 0.257	- 1. 166	0.877	8
Environmental Awareness	3.42	1.35	- 0.325	- 1.138	0.881	6
The Usage of Recyclable and Biodegradable Products	3.47	1.35	- 0.367	- 1.101	0.879	6

Table 4 shows the relationship between independent variables and dependent variables. The Pearson correlation analysis shows a strong association between price and the usage of recyclable and biodegradable products among Malaysians ($r = 0.821$, $p < 0.05$). Then, green knowledge has a positive correlation coefficient of 0.810, $p < 0.05$, on the usage of recyclable and biodegradable products among Malaysian. The finding also shows

the relationship between environmental awareness and the use of recyclable and biodegradable products among Malaysians ($r = 0.863$, $p < 0.05$). Based on the results of correlation analyses, all hypotheses were accepted.

Table 4: Correlation Results

		The Usage of Recyclable and Biodegradable Products
Price	Pearson Correlation	0.821**
	Sig. (1-tailed)	0.000
	N	316
Green Knowledge	Pearson Correlation	0.810**
	Sig. (1-tailed)	0.000
	N	316
Environmental Awareness	Pearson Correlation	0.863**
	Sig. (1-tailed)	0.000
	N	316

Based on the results in Table 5, the R-value of 0.450 obtained shows that price, green knowledge, and environmental awareness strongly predict the usage of recyclable and biodegradable products. Based on the Adjusted R Square value, it is known that 44.9%, meaning independent variables, can explain the variation of the dependent variable. The remaining 55.1% is explained by other variables not included in the research model. The most influential factor is environmental awareness, with a significant regression coefficient of 0.787. This shows that if the respondent's opinion on environmental awareness experiences an increase of one unit, it will increase the usage of recyclable and biodegradable products by 0.787 units. The result of tolerance and VIF values also concluded that there is no symptom of multicollinearity between independent variables in the regression model.

Table 5: Regression Results

Variables	Beta (β)	Sig. (p)	Tolerance	VIF
Price	0.076	0.122	0.217	8.155
Green Knowledge	0.113	0.009	0.131	6.335
Environmental Awareness	0.787	0.000	0.146	6.382
R^2	0.450			
Adjusted R^2	0.449			
F Change	39.602			
Sig.	0.000			

The research results show that the three variables (i.e., price, green knowledge, and environmental awareness) positively and significantly affect the usage of recyclable and biodegradable products. Consistently to the previous studies (e.g., Choi & Johnson, 2019; Guo, Choi, & Shen, 2020; Xu, Wang, & Yu, 2020), this can be proven because each variable has a significant level of 0.000. The findings also discovered that environmental awareness is the strongest predictor of using recyclable and biodegradable products. Based on the research findings, to increase awareness of green practices among children and the younger generation, parents, educators, and teachers should be role mode and exemplary in increasing knowledge of the green practice. Al Zubaidi (2020) mentions that the family is an external factor that directly influences a person buying a product. The family is considered one of the most valuable resources in building individual norms and beliefs. Thus, the influence of the family can inspire generations Y and Z to shape their behaviour toward green awareness (Li et al., 2020). Social

media is also one of the influencers that can significantly impact young people toward purchasing recyclable and biodegradable products. The sellers and marketers must also consider communication with effective media planning. Media planning can be interpreted as selecting media to introduce, promote, inform, and cover a brand (Panda et al., 2020). Undeniably, the media used also plays a role in building a brand's image.

Labelling environmental products effectively communicate the product's specific benefits, characteristics, and security claims to customers. Environmental labels can be displayed using environmentally safe symbols or messages. Environmental labels aim to project an eco-friendly image for the stakeholders (Hafizan, Hussein, & Noor, 2021; Taufique et al., 2019). Especially for first-time buyers, environmental labels that stand out could become the main criteria for purchasing. Price is also critical; consumers will only be ready to pay if a product is valued (Li et al., 2020; Ranjan & Jha, 2019).

This value can be achieved by improving product performance, function, design, power, or taste. The government also needs to stimulate public awareness by conducting an environmental campaign. According to Green et al. (2019), there are three types of green campaigns. First are campaigns that discuss the relationship between products or services and the biophysical environment. Second is the campaign that promotes a green lifestyle by highlighting a product or service, and the third is the campaign that presents the company's image in pursuing environmental responsibility.

CONCLUSION

Based on the results, the conclusion of the research results was obtained as follows: 1) price, green knowledge, and environmental awareness have a positive and significant effect on the usage of recyclable and biodegradable products, and 2) environmental awareness has a dominant influence on purchase results of recyclable and biodegradable products. This study supports United Nations SDG 12 to ensure that everyone gets relevant information and awareness for sustainable development and lifestyle and supports developing countries to strengthen the capacity to move towards sustainable consumption and production patterns. This study also helps to explain the theory of planned behaviour (TPB) by including the effect of price as perceived behavioural control and the influence of green knowledge and environmental awareness to measure the usage of recyclable and biodegradable products in Malaysia. Managerially, the findings guide practitioners on reasonably employing environmental advertising, labelling, and campaign to maximise future purchasing decisions.

However, some limitations that need to be improved in this research. First, the study conducted used a cross-sectional design. Hence, the relationship pattern only portrays a moment describing relationships during data collection. Second, the model needs to consider other variables, which limits the comprehensive view of the literature. It is recommended that future research be conducted with the longitudinal method to determine the proposed model's stability. The model will be more comprehensive in arranging the determinants of purchasing decisions and behaviour by considering other variables such as product trust, ambivalent attitudes toward green products, religious values, differentiation across Gen Z, Y, X, and Baby Boomers, and other factors. This study used an online survey to collect data on a small scale due to Covid-19. Therefore, further investigation should consider large-scale sample size.

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