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Investigating Students' Attitude and Intention to Use Biodegradable Drinking Straw in Emerging Country

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Abstract: ***Plastic drinking straw is widely used for drinking water and has been very important for society as an effective tool in a restaurant and other service businesses. However, excessive use leads to large amount of plastic waste that would harm the environment. Plastic waste pose serious environmental pollutions, economical disadvantages and health problems in humans and animals. Therefore, the government has taken its first step to ban the usage of plastic straw in Kuala Lumpur, Putrajaya and Labuan in 2019. The government has strategies for public outreach to advocate the drawbacks of using plastic straw. The government suggested the public to reduce the usage of plastic straw or to choose biodegradable drinking straw as an alternative in order to save the environment. Efforts to design the best strategy are worth it if environmental awareness and attitude with regards to the plastic consumption among society are high. Therefore, this research is important to examine the students' attitudes, subjective norm and perceived behavioral control towards students' intention. A total of 242 participants aged between 18 to 24 years participated in the survey via systematic random sampling technique. The findings revealed that students attitudes, subjective norm and perceived behavioral control have a significant influence on their favorable intention toward biodegradable drinking straw. The outcome of this research would be in form of a guideline for both scholars and policymakers to plan for further strategies with regards to the usage of biodegradable straw. Furthermore, this study contributes to theory by providing empirical evidence of the relationship between attitudes toward the environment, subjective norms, and perceived behavioral controls on intentions of young educated consumers in using biodegradable drinking straw.***

Keywords: Attitude, Subjective Norm, Perceived Behavioral Control, Intentions, Biodegradable Drinking Straw

1. Introduction

Besides the increase of environmental concern by the government and public, the influential factors on environmental protection need to be highlighted. Factors such as attitude and environmental intention have been measured using some instruments. Majority of researchers believed that the attitude and intention are related to each other. To analyze these linkages, a framework of the theory of planned behavior (TPB) is applied [1]. This theory has been used extensively in many researches as a benchmark for attitude-intention relationship.

The Malaysian government has expressed its strong commitment towards strengthening of sustainable consumption and production. This can be seen in the 11th Malaysian Plan, which expressed green growth as one of the key strategic thrust to stay ahead for environmental challenges. The utilization of green product can minimize pollution as the product use natural resources; whereas non-biodegradable product such as conventional plastic straw is unrecyclable which gradually harm the environment. As such, plastic-based product contributes to air, water and soil pollution and will take a long time to degrade in soil as well as could harm aquatic animal in rivers and waterways [2].

Thus, the government through Ministry of Energy, Science, Technology, Environment & Climate Change (MESTECC) has taken an initiative to ban plastics bags and polystyrene food packaging to support environment sustainability and resilience. Malaysia is the first in Southeast Asia to take this zero-waste plan aims to abolish single-use plastic by 2030. Beginning January 1st 2019, the government has implemented further strategies to ban plastic straw in Kuala Lumpur, Putrajaya and Labuan before fully enforcing it to the entire country in 2020. An awareness campaign on the negative impact of using plastic straw has been extensively conducted throughout the year. Although numerous campaigns have been launched to preserve the environment, consumers' perception of eco-friendly products is still low [3] and most of them are not well informed about the benefits of green products [4]. This shows that the consumers have misconception about the product due to insufficient understanding and information. These are vital in spreading awareness and help leading the society towards becoming more environmentally friendly.

The plastic straws that are used in restaurants, food courts or hawker stalls in Malaysia may not be safe to the environment in the long run. The real concern is whether the consumers are aware of the drawbacks of using plastic straw. In addition, whether or not they are aware of the ban imposed by the government on the usage of conventional plastic straw in the near future, and whether they know of any alternative, namely, drinking without straws or using biodegradable straws, in the face of such changes. Therefore, consumers' favorable attitudes toward biodegradable straw is important to study in order to know their level of perception and understanding on many aspects particularly regarding the usage of eco-friendly product.

Students are the younger generation that would be the future labor force and subsequently give rise to high expenditure in the future. Their attitudes toward green or eco-friendly products are important to ensuring the world's survival, and, for this reason, this study examines students' intentions with regard to the green drinking straw as alternative to plastic straw. As such, enhanced understanding regarding the present state of green consumption, as well as the effects of environmental literacy, attitude, subjective norms, and

perceived behavioral control, is crucial to encourage mass consumption of green products.

Some researches including [5]; [6]; [7]; and [8] have explored young consumers' attitude towards eco-friendly products, but none of them focused specifically on biodegradable straw, and many were ambiguous. Several studies have found that students in developing economy have an average level of environmental awareness, despite having higher understanding and knowledge on the matter, thereby revealing the need on this topic. Hence, this study aims to examine the attitude and intentions to use biodegradable straw among students in emerging country.

As highlighted earlier, it is important for this research to identify the level of students' intention in using biodegradable drinking straw. Besides, the outcome would give policy makers a better understanding of students' perception on the topic. The findings generated from this phase of the research will benefit universities and authorities in support for government strategic planning in introducing the usage of alternatives to plastic straw that will be started in 2020.

2. Literature Review

2.1 Study Background

Literatures on environment sustainability have been extensively uncover the ways to promotes lifestyle that cherish the environment for the benefit of people and the earth. This includes studies looking from many different perspectives of consumers, corporate and the government on how they practice environment sustainability matters. The consumers nowadays show interest towards environmental protections and sustainable development [4]. They are starting to change their purchase behavior to show their concern about environment and practices towards green attitude [3].

The business societies supporting the production of environment sustainability products, packaging and processes as a result of increasing green consumers who became the motivating force behind the green marketing process. Thus, green concept becomes part of social responsibility value in business societies [4]. They are supporting the promotion of environmentally friendly behavior to minimize impact on the environment so as to avoid considerable cost of environmental lawsuits [9].

[3] highlighted that Malaysia too, focused on international trade that emphasize on environmental protection such as buying and selling green products to compete internationally while maintaining effort to conserve the environment. Even though the green concept is still new in Malaysia as compared to the other developing countries, many green movements and campaigns have been carried out by the government and NGOs to promote practice of environment sustainability.

In such, in Malaysia, program such as the no plastic bag day program was introduced to reduce the use of plastic bag in retail stores has been recorded as 52.3 percent effective in encouraging consumer to use reusable grocery bags to carry purchased grocery items [2]. In addition, it can be seen through the government program that continues to promote the practice of reduce, reuse and recycle of product to lower impact of environmental problems. The government also targeted to increase the recycling practices from 5 percent to 22 percent by year 2020. Thus, MESTECC promotes green technology and eco-friendly products and services to encourage and motivates the people to go green by conducting effective seminars and channel the information through all mass media.

Therefore, it is timely to improve our understanding and practices of the new challenge towards greener and eco-friendly products to save the environment. In many emerging countries, the environmental education program has aggressively focused on younger generations and many of them focused in developing a green community with extra environmental knowledge and skill [10]. Some students are more perceptive of environmental issues [11], and reflect high awareness and knowledge of the environment that is not reflected in their behaviors [6]. Although students have high levels of environmental awareness, their perception and exposure to environmental problems remains shallow, leading to lower levels of awareness and sensitivity to environmental concerns [12].

2.2 Theoretical Foundation

Theory of planned behavior is psychological theory which was developed in order to form a relationship between self-principle that will direct the self's act. The theory explains that one's attitude towards the behavior, subjective norms and perceived behavioral control will direct the intention [1]. Study conducted by [1] on extension of theory of reasoned action, adding perceived behavior control to test the theory has been applied to conduct studies which relates to human psychology in area of marketing and promotion, healthcare, sports management and environment sustainability.

This theory discusses about the various situation-specific cognition that influence an individual's initial intention to behave specifically. The TPB hypothesizes that one's behavior could be determined by behavioral intentions that can be predicted by certain socio-cognitive factors, such as attitudes, subjective norms, and perceived behavior control. The positive and negative beliefs are influential on the intention and behavior in certain actions, which provide a favorable direction to strengthen consumer commitment [13]. They reported that consumers' intention to buy green products would ultimately influence green purchase practices. They further extended theory of planned behavior by including new variables, which are perceived value and the willingness to pay premium, to examine green purchase intention and behavior, which then ultimately confirmed that the theory fully supported the consumer intention and behavior to choose green products and services.

According to [14] TPB model was used to measure the

degree of green consumerism in European Union countries and facilitate policy implementation. For instance, Denmark and Austria supplied more eco-friendly products for consumers to choose. On the contrary, Sweden, Italy and Czech Republic through government intervention have provided subsidy in green products that allowed their consumers who were sensitive to higher price to be able to afford eco-friendly products. [3] who used this theory as the conceptual framework have suggested that the attitude towards green movements and campaigns as well as the benefit of the practice of going green has caused the consumers to go green.

In addition, [15] also believed that the performance of behavior is a joint function of intentions and perceived behavioral control. They modified theory of planned behavior in a case of buying organic food by adding moral decision-making after attitude was formed. The study assumed that the decision to buy organic food is a moral decision by looking at the effect of such intention towards environmental well-being and also individual well-being. This finding was supported by [16] who stressed that the theory is able to provide framework for combination of many factors, which in turn may affect people's behavior since the theory focuses on the central factor as such attitude, subjective norms and perceived behavioral control which may affect individual's intention and behavior.

In other study, [17] investigated the influence of demographic and psychographic on environmentally conscious consumers. They confirmed that age, gender and perceived consumer effectiveness have significantly explained characteristics of pro-environmental behavior. According to [18], pro-environmental attitudes may not always reduce the environmental impacts of consumptions as it has been proven that there were no differences between ecological footprints of green and brown consumers. However, knowledge and ecological factors have affected young consumers' involvement towards green practices [19].

2.3 Behavioral Intention towards Eco-Friendly Products

Behavioral intention is a suggestion of individual's readiness to perform a given behavior [1]. [3] indicated that awareness, good knowledge and better perception towards green products are positively related to consumers' purchase intention. They also found that some socio-demographic variables such as education level and age have a strong relationship with the respondents' intention to go green other than subjective norms which also influenced the respondents' intention to go green.

Other than that, factors such as gender, age, political issues, parent's income and level of education also have an impact on environmental education variables i.e. awareness, knowledge and attitude [20]. The same study conducted by [18] showed that family income and levels of parents' education are known to be a predicator factors on students attitude, knowledge and environmental awareness. However, the relationship between income-environmental behaviors was seen to be slightly lower than parents' education-environmental behavior.

Moreover, the connection between intention and behavior in green consumerism has been investigated in details. For example, few studies have revealed that there is positive relationship between the intentions and behavior towards organic products purchase [15]; and [16]. [21] stated that students' environmentally-related behavior enhanced when they intend to protect the environment. This is in line with the study done by [19] who has posited that younger consumers have greater intention to buy green products. According to [1], when participants have higher intention to behave in a specific manner, they are likely to perform that manner.

[15] has also proved that the intention to buy organic food - towards behavior was positively significant. This showed that consumers' intention to buy organic food could be predicted by their attitude, followed by subjective norms and behavioral intention to predict the behavior. [4] revealed that majority of the respondents buy green products for health reasons while some of them purchasing eco-friendly products in order to serve the environment. Even though for some price sensitive consumers, their attitude and behavior towards green products will influence their intention to purchase such products that will encourage future green purchase behavior [13].

2.4 Attitudes towards Eco-Friendly Products

Attitude can be better determinants of natural food shopping than values, [22]. It is a mental position consists of feeling, emotions and opinion that responded to external matters. However, the effect could be momentary or become long-term habitual response in consumers' evaluation on products. This in turns will develop certain attitude about the things being evaluated [4]. For example, the attitude towards environmentally sustainable products supports the relationship between environmental knowledge and purchase intention [16]. Attitude is the result of behavioral beliefs which the individual believes about effect of acting in certain behavior and the outcome evaluations of favorable or unfavorable judgment about consequences of such behavior [13].

The attitude towards something is developed from external stimulus that helps to shape certain behavior. Attitude toward the environmental concern is an indirect determinant of specific behavior [21]. According to [23], consumer with perceived level of self-involvement towards the environmental protection may engage in recycling activities. This manner was also contributed by high level of conservation-related products [24]. However, [25] argued that green food purchases attitude does not strongly facilitated by moral thinking of consumers but significantly affected by positive attitude towards environmental protection.

[4] conducted a study to assess the level of environmental knowledge and concern and to examine the awareness and consumer attitude towards eco-friendly product. They stated that the customers decided to use green goods, which are

environmentally safe and good for health. Furthermore, the product label and outdoor advertisement are important sources to create awareness towards green products. The study stressed that lack of knowledge and not aware on the benefits of using or consuming eco-friendly products is the reason of the lack of positive attitude towards eco-friendly products.

[3] suggested that external factors such as socio-demographic profiles such as gender, age, geographical area, income and education level will increase consumers' intention to adopt green lifestyle and consumers' attitudes towards their own environment, which in turn will influence their behavior. Furthermore, they also reported that the impact of green campaign in Malaysia with consumers concerned about the positive environment is related to consumer perceptions and attitude towards green practices.

In addition, individuals have different opinions, attitude and values towards the environment. Individual's beliefs have the power to influence the environmental issue, which caused them to develop attitude and respond to environmental concerns [17]. The consumers' intention to purchase green products and services are determined mainly by their attitude towards green products, followed by perceived behavioral control and subjective norm [13].

2.5 Subjective Norm towards Eco-Friendly Products

Personal norm is the feeling of moral obligation of consumers which would become a powerful motivator towards environmental behavior [26]; [27]; and [28]. Subjective norm is the opinions of others that are influential on an individual's decision-making. It can be referred to perceived social pressure, which deals with ethical or moral decision-making and might be affected by personal benefit [15]. In other word, it is a perception of those who are important to an individual who would like them to behave in certain manner by motivating the subjects to follow their personal opinion [13].

In the past studies, subjective norms' effect on attitudes was found in behaviors that involve some kind of ethical decision. For example, those who think positively about buying green products have influence on the attitude formation of others. In the study of buying organic food, [15] found that subjective norms affected consumer intention indirectly through attitude formation, and having a positive relationships between subjective norms and attitudes, and attitudes and buying intentions. However, [16] found that subjective norm is not related to purchase intention on green products, which is contrary to the established findings.

Some group of consumers believed that every individual have the opportunity to influence the change and feel empowered to solve environmental problems [17]. Likewise, [29] found that green purchase practices and environmentally friendly behavior has relationship with environmentally friendly social norms. [3] also suggested that subjective norms factor from the environmentalists, the green society and green movements is important factor that encourage consumers' intention to go green. The study reveals that 94 percent of Malaysian respondent believe that green practices will help to conserve the planet even though 85.2 percent of respondent believe that going green is costly.

In addition, subjective norms are expected to influence the purchase intention among consumers, as shown by a study done by [30]. The study showed that social influence is important for continuous green consumption. [21] also found that students who care about the environment were influenced by social norm cognition. In addition, the results obtained by [31] reported that strong argument of the references to some products has changed the consumers' intent to buy green products. In contrast, [32] found that subjective norms did not influence user intent towards green.

2.6 Perceived Behavioral Control towards Eco-Friendly Products

[1] suggests that perceived behavioral control is a result of control belief and perceived power. Individual beliefs about factors that promote performance of a particular behavior such as time, money and opportunity, are combined with a personal assessment of the effects of factors facilitate the performance of behavior [13]. People will be inspired to adopt a green lifestyle if there are easy alternative such as recycling facilities to encourage them to recycle and those who aim to reduce air pollution demand high quality public transport as a sustainable green lifestyle [16].

Improved attitudes to behavior and better control of behavior will result in stronger intention to engage in certain behaviors [13]. [29] showed that green purchasing behavior was significantly associated with eco-friendly behavior. Green consumers buy green products not because of fashion or trend, but because they care about environmental issues and are always looking for evidence in their eco-friendly labels [4].

[17] emphasized that respondents with environmental concern behavior adopt a green lifestyle such as buying products that are safe for humans and the environment always do so because they believe they are able to make a difference and help save the environment. The study of [3] also showed that the desire of Malaysians to go green is determined by behavior control that play an important role in creating awareness and concern about becoming green. However, according to [33], pro-nature consumers do not always act on the values they consider to be right, thus making it difficult to predict the use of green products.

Although most Malaysian users support governmental policies related to the environment, their support does not always trigger pro-environmental behavior. For this reason, this study is important as further investigation into the students' intention to use biodegradable drinking straw, in order to know the younger generation's readiness for green products. It is also needed in the emerging country, Malaysia, in its early stages of green revolution [34] as compared to developed countries.

3. Research Methods

The study sample comprised of students in Universiti Teknologi MARA Segamat Campus, in Johor, Malaysia, aged between 21 and 24 years. Stratified random sampling was used to select study participants to measure the intention to use biodegradable drinking straw among students. An online questionnaire was distributed randomly to the students and the responses were collected via google drive. In total, 242 complete and useable responses were collected and the respondents' profile is summarized in Table 1.

This study adopts a quantitative approach to measure the factor of students' attitudes, subjective norm and perceived behavioral control on students' intention to use biodegradable drinking straw. The questionnaire for this study contains of 21 questions with a five-point Likert scale, which are; strongly disagree, disagree, neutral, agree and strongly agree, was used for all the variables. The questionnaires were collected in May 2019 and the data was coded and analyzed using Smart PLS. The data were analyzed using the following steps; first, the model measurement was examined using confirmatory factor analysis and secondly the structural model measurement was assessed by examining the standard path coefficient and t-statistics (t > 1.96).

4. Findings

4.1 Demographic Characteristics of Respondents

The results presented in Table 1 indicate the characteristics of the respondents of the study. Most of the respondents are female (68.2 per cent), which reflect the gender gap issues in higher learning education in Malaysia. They are between the ages of 19-21 years old (68.2 per cent) and 22-24 (31.4 per cent). Majority of them are studying for degree (80.2 per cent) except for the Diploma Computer Science student who is studying for diploma. From the survey, this student depends on parental support and study loan for their financial source, which indicated 58.3 per cent and 40.5 per cent respectively. Moreover, it also shows that their monthly allowance ranges below RM500 (56.6 per cent) and RM501-RM1000 (33.5 per cent) and they use to spend the most for snacks and foods (80.2 per cent), and later spend for books, stationary and other study materials (9.1 per cent) and for transportation costs (4.1 per cent). A study revealed that most of the students (95.5 per cent) are more likely to choose or purchase a type of plastic of drinking straw.

Table 1: Characteristics of the Sample

Characteristics	*Frequency (N=242)*	*Percentage (100%)*
Gender		
Male	77	31.8
Female	165	68.2
Age		
19-21	158	68.2
22-24	76	31.4
25-27	1	0.4
Academic Program		
BBA Accounting	49	20.2
BBA Marketing	13	5.4
BBA Finance	50	20.7
BBA Banking	43	17.8
BBA Investment	39	16.1
Dip. Com. Science	48	19.8
Source of Financial		
Parents or Guardians	141	58.3
Study Loan	98	40.5
Scholarships	3	1.2
Monthly Allowance		
Less than RM500	137	56.6
RM501-RM1,000	81	33.5
RM1,001-RM1,500	11	4.5
RM1,501-RM2,000	7	2.9
RM2001 and above	6	2.5
Form of Expenses		
Snacks and foods	194	80.2
Study materials	22	9.1
Clothes	1	0.4
Communication bills	6	2.5
Personal items	7	2.9
Transportation costs	10	4.1
Other	2	0.8
Drinking straw		
Plastic	231	95.5
Wood	2	0.8
Iron/ stainless steel	9	3.7

4.2 Measurement Model

As suggested by [35], convergent validity was determined by calculating item reliability, internal consistency, and average variance extracted (AVE). Item reliability assesses the loadings for each individual item. Table 2 presents the detailed item loadings. The loadings indicate the correlation of the items with their respective constructs. The results showed that all item greater than 0.7 which consider as acceptable except for PB5, PB6 and U4 which is considered as adequate if other items have high scores [36]. This table also showed that all the AVE values are above 0.5. Referring to Average Variance Extracted (AVE), the largest value is 0.732 for attitude whilst the lowest is 0.549 for intention.

Hence, Internal Consistency meets the criterion for a minimum value of 0.7. Referring to the results after it has been revised, it was found that the lowest internal consistency was 0.700 for subjective norm whilst the highest was 0.878 for attitude. The high internal consistency values for all the constructs ensure the reliability of the measurement model. Therefore, the measurement model satisfied all three necessary criteria's and achieved convergent validity. Hence, these results clearly indicate that the items in each construct are highly correlated and reliable.

Table 2: Measurement Model

Construct	*Items*	*Loading*	AVE	IC
Attitude (A)	A1	0.879	0.732	0.878
	A2	0.846		
	A4	0.853		
	A5	0.844		
Perceived Behaviour Control (PB)	PB1	0.854	0.594	0.768
	PB2	0.723		
	PB5	0.543		
	PB6	0.561		
Subjective Norm (SN)	S1	0.829	0.564	0.7
	S2	0.794		
	S3	0.738		
	S5	0.576		
Intention (U)	U1	0.888	0.549	0.717
	U2	0.754		
	U4	0.531		
	U5	0.859		

The first criterion of discriminant validity is assessed by calculating the square root of average variance extracted (AVE). This value is then compared with inter construct correlation. To meet the discriminant validity criteria, the square roots of the AVE were calculated and represented in the main diagonal of Table 3. The off-diagonal elements represent the correlations among the latent variables. [37] Barclay, Higgins, and Thompson (1995) specified that discriminant validity is achieved when the square root of the AVE of a construct is larger than its correlation with other constructs. Table 3 confirms that the discriminant validity was achieved.

Table 3: Discriminant Validity

Construct	*A*	*U*	*PB*	*SN*
Attitude (A)	0.855			
Intention (U)	0.642	0.771		
Perceived Behavioural Control (PB)	0.526	0.581	0.682	
Subjective Norm (SN)	0.601	0.620	0.604	0.741

The cross-loading matrix explained that all items are loaded higher on the construct they were measuring than on any other construct in the model. Therefore, the two criterion of discriminant validity were met. The implication is that all the reflective constructs in the measurement model are different from each other.

4.3 Result of Hypothesis Testing

Table 4 indicated the summarized of hypothesis testing for the main model. The standardized path coefficient indicates whether the direction of the relationship is either positive or negative whilst the t-value assesses whether this relationship is significant or not. H_1, H_2, and H_3 examined the influence of attitude, perceived behavior control and subjective norm on intention, respectively.

Table 4: Hypothesis Testing

Hypothesis	*Relationship*	*Coefficient*	*t-value*
H1	A - U	0.354	5.902
H2	PB - U	0.247	4.575
H3	SN - U	0.249	3.451

*p< 0.05 or **p<0.01

This table showed that all three variables for standard path coefficients were positive. More specifically, for H_1 the standardized path coefficient is 0.354 whilst the t-value is 5.902. The result was accepted at t > 1.96. H_2 explained the standard path coefficient is 0.247 whilst t-value is 4.575. The result was accepted at t > 1.96. H_3 explained the standard path coefficient is 0.249 whilst t-value is 3.451. The result was accepted at t > 1.96. In conclusion, three (H_1, H_2, and H_3) of the hypotheses were statistically significant.

5. Conclusion

This study provides information about students' environmental attitude and intention in emerging country, Malaysia. The samples were chosen from Universiti Teknologi MARA Segamat Campus which are below 24 years of age and are pursuing studies in many different courses. The study concluded that the attitudes, subjective norm and perceived behavioral control were found to play an important role in explaining students' intention to use biodegradable drinking straw. The role of attitude which was widely discussed appears to be an important factor for encouraging intention towards environmental friendly products. This implies that the positive attitude of the students towards the environment is high but unfortunately, the practices are still at the moderate level. Students tend to choose or purchase plastic drinking straw compared to reusable wooden or stainless steel straws. TPB model used in this study is appropriate for the focus group as validated by the various statistical test performed. Not only that, this study successfully explained the intention of young consumers in view of consumption of green products as a mean for environmental protection. This was illustrated in the empirical evidence on the relationship between attitudes, subjective norms and perceived behavioral control towards students' intention in the usage of biodegradable straws. It is anticipated that the outcome of this study should contribute to the environment and economy especially in providing

insights into consumers' intentions in using environmental friendly products. These can be used as a reference by the appropriate authorities in addressing environmental and economic vulnerabilities among young consumers. In addition, it can also be adapted to a wider population, in order to better understand the subject, which suggests that the perception of the focus group is comparable and adaptable to a larger context. The findings seem to emphasize that efforts to encourage Malaysians to comply with government-mandatory regulations must be strengthened to support environmental conservation. Therefore, more comprehensive environmental awareness and eco-friendly lifestyles should be implemented by the government and the private sector, and focus more on students, as they will be decision makers later. They should manage many programs and activities to encourage eco-friendly and green purchasing behaviors. The use of biodegradable drinking straw is an attempt to promote green practices as to encourage the individual behavior. Businesses that manufacture and sell wearable plastic products which are disposable should switch their production to biodegradable materials so that they can be used by the public and have an impact on their behavior as they choose to use green products. Nevertheless, it is noteworthy to highlight that this study did not include all factors that may affect students' intention to use biodegradable straw i.e. knowledge, awareness and behavioral factors into the model. It is noted that consumer behaviors is also affected by various other personal and situational factors. Future research should consider including socio-economic factors in the analysis so that the result may help the policy makers to attract participation from different demographic background to practice green lifestyles and cultures. Furthermore, this study only confined to consumers from a single country, Malaysia, thus the differences in lifestyle, campaign and promotions on environmental concern is still at early stage of implementation and therefore limiting the generalizability of its findings. Hence, any future research should be conducted specific to the target country because the efforts on environmental concerns should be different among countries due to their some unique factors.

In addition, consumers in Malaysia were not fully exposed to a variety of eco-friendly products. Furthermore, the concept of biodegradation is not fully understood, so consumers are unable to distinguish between biodegradable products and non-biodegradable products and the effects of these products have on the environment. The harmful use of plastic is very important to disclose to the public. Therefore, there is a need to educate and explain to people about the concept before allowing them to answer the question. Finally, this study focuses on the use of biodegradable applications. This paper focuses solely on environment preservation topic and did not touch on waste management. There are many types of products that can be recycled or reused in order to reduce waste handling cost, even for biodegradable waste. It is therefore recommended that future research should be conducted on factors affecting product recycling and reuse.

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