

## RESEARCH ARTICLE

# Determinants of intention to purchase online eco-friendly items amongst university students in Nilai, Malaysia

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## ABSTRACT

This study investigates the determinants of intention to purchase online eco-friendly items among university students in Nilai, Malaysia. This research builds upon previous studies regarding consumers' intentions to buy environmentally friendly items digitally. The theory of planned behavior (TPB) is used in this study since its concepts are applicable and relevant to understanding people's intentions to buy environmentally friendly goods digitally in Malaysia. The present research examined the variables influencing consumers' intentions to buy various environmentally friendly goods digitally and evaluated how well they fit into the Malaysian industry. Surveys were sent as part of the project's quantitative analysis methodology to gather data. With an expected sample population of 361 learners, this study's approach entails data collection through purposive sampling. The results of this research indicated that each independent factor employed has an impact on people's decisions to buy environmentally friendly products online in Nilai, Malaysia. It provided input on elements that might help businesses organize their advertising strategies. The findings have an impact on research as well as practice. Corporations may execute viable concepts by drawing the link between the desire to buy and acquiring knowledge about the purchasing patterns of young customers. Thus, a company's market worth and income in Malaysia may increase. The research also adds to the body of knowledge regarding people's intentions to buy eco-friendly products via the internet by offering insightful information. By addressing a gap in the existing literature, the research's focus on this specific setting advances our comprehension of how people behave while making online purchases of environmentally friendly items within the Malaysian context. So, this study helps in building a resilient eco-system aimed at sustainable growth.

**Keywords:** intention to purchase; environmental attitude; subjective norms; perceived behavioural control; eco-system; sustainable growth

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## 1. Introduction

### 1.1. Research background

The COVID-19 epidemic is unlike any other that the entire globe has seen in recent past. This

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worldwide catastrophe impacted many issues across the globe, including how people behave as customers, particularly when it comes to their online shopping habits<sup>[1]</sup>. Businesses are putting more and more emphasis upon environmentally friendly manufacturing through an effort to win over customers and increase consciousness about the importance of environmental preservation. Eco-friendly products are designed to have minimal impact on the environment, typically by reducing pollution, conserving resources, and using sustainable materials and processes. These products aim to promote environmental sustainability and often include features like biodegradability, recyclability, and energy efficiency<sup>[2-4]</sup>. The nation of Malaysia is anticipated to have 21.9 million users of the internet overall in 2020, along with more than twenty-two million consumers who shop online until October of 2021<sup>[5]</sup>. Of the 21.9 million Malaysians who made purchases via the internet in 2020, 57% were genuinely environmentally conscious consumers. The percentage of Malaysians who make purchases via the internet in 2021 is expected to increase<sup>[6]</sup>.

Over 50% of consumers purchase green products, whereas an additional 24 percent are willing to pay extra for ecologically friendly products, based on a study carried out across nine developed nations<sup>[7]</sup>. Since the idea of an eco-friendly products was relatively new ten years ago, the goal to buy such products is virtually non-existent. Therefore, the purpose of this study is to determine what influences Nilai university students' intentions to buy environmentally friendly items online. So, this investigation focuses on Nilai University students' online purchases of environmentally friendly goods.

## **1.2. Problem statement**

Although Gen Z is frequently perceived as a group of people that has a strong inclination towards ecological conservation, the smallest proportion that responded across every age group which is 20% of those between the ages of 18 and 24, expressed profound concerns regarding the current climate situation as well as the requirement for more sustainable development and emission reductions<sup>[8]</sup>. Approximately half (58%) of Gen Z participants indicated they were not very interested regarding these goods that are environmentally friendly. The primary obstacles towards college students buying environmentally friendly goods are their higher cost and lack of accessibility. As a result, the study suggests that educational institution students are not interested in consuming items that are environmentally friendly<sup>[9]</sup>. Furthermore, it has been inferred that college students in Malaysia accounted for 45% of the entire internet sales of environmentally conscious goods<sup>[10]</sup>. However, few investigations were conducted with these learners who intended to buy environmentally friendly goods<sup>[11]</sup>. Similarly, few research has been conducted on this specific facet of customer behavior, although Malaysian university students bought environmentally friendly goods digitally mostly according to their perception of the products' quality. Nevertheless, a lot of research has been done in Malaysia on the subject regarding environmental mindset<sup>[12,13]</sup>.

However, very few studies delved into this specific component utilizing Malaysian university students. The present study will offer an unambiguous framework concerning this issue, with a focus on Malaysian university students buying environmentally friendly goods.

## **1.3. Research objectives**

The main objectives of this study are:

RO1: To examine the influence of environmental attitude on intention to purchase online eco-friendly products amongst university students in Malaysia.

RO2: To examine the influence of subjective norms on intention to purchase online eco-friendly products amongst university students in Malaysia.

RO3: To examine the influence of perceived behavioural control on intention to purchase online eco-friendly products amongst university students in Malaysia.

#### **1.4. Research questions**

The research questions of this study are:

RQ1: What is the influence of environmental attitude on intention to purchase online eco-friendly products amongst university students in Malaysia.

RQ2: What is the influence of subjective norms on intention to purchase online eco-friendly products amongst university students in Malaysia.

RQ3: What is the influence of perceived behavioural control on intention to purchase online eco-friendly products amongst university students in Malaysia

## **2. Literature review**

### **2.1. Eco-friendly product purchase among Malaysians**

Malaysian consumers exhibit a high degree of environmental consciousness, but their purchasing behavior toward green, or environmentally friendly commodities tends to be minimal<sup>[8]</sup>. Situations like these demonstrate that some customers favor conventional items over non-traditional ones, despite the latter's detrimental consequences upon the ecosystem. While some customers say they want to purchase eco-friendly products to help save the planet, they frequently overlook this goal when they walk into shops<sup>[14]</sup>. This mindset motivates big-box retailers like Tesco and Aeon, as well as the Institute of Standards and Industrial Research Malaysia (SIRIM), to come up with strategies for promoting environmentally friendly products, which include electronics, eco-friendly packaging, and various other environmentally friendly goods, in an effort to alter consumer perceptions as well as save the environment<sup>[15]</sup>. It's hard to obtain green products in Malaysia, and the ones available can be highly-priced in some stores. In order to assist customers in locating eco-friendly products and ensure that those goods are delivered at reasonable costs, merchants have started to create environmentally friendly advertising methods. Customers will probably be more inclined to invest in green items if they can easily recognize them and can afford them, which should increase their willingness to invest in environmentally friendly goods<sup>[16]</sup>.

Social networks, relatives, and close companions' suggestions could have a positive influence on protecting the ecosystem and making customers more likely to purchase eco-friendly goods<sup>[17]</sup>. The majority of customers in Malaysia don't rely on environmentally friendly goods. Government agencies, advertisers, and the press have a chance to take steps to increase public awareness of the benefits of eco-friendly products by running ads and programs<sup>[18]</sup>. Thus, the purpose of this study is to determine and examine the variables that support sustainable development and persuade Malaysian consumers to purchase environmentally friendly goods<sup>[19]</sup>.

Numerous studies conducted in different countries have examined the purchasing behavior of eco-friendly products, providing important insights into the variables affecting customer choices<sup>[20]</sup>. Environmental awareness was shown to favorably effect attitudes toward eco-friendly items and subjective standards, considerably impacting purchase intentions in a research comparing Chinese and Korean consumers<sup>[21]</sup>. Past research emphasized the critical role that environmental education plays in encouraging eco-friendly buying<sup>[22]</sup>.

Furthermore, well-known brands and affordable prices are important factors in customer decision-making. These results are consistent with other studies that demonstrate price, brand recognition, and naturalness as important factors when making food purchase choices<sup>[23, 24]</sup>.

In Vietnam, concerns about food safety, health awareness, and media exposure have a big impact on how young people feel about buying organic food. To increase the consumption of eco-friendly products, improved pricing and distribution strategies are needed, since perceived obstacles like high costs and insufficient availability impede purchase intentions<sup>[25]</sup>.

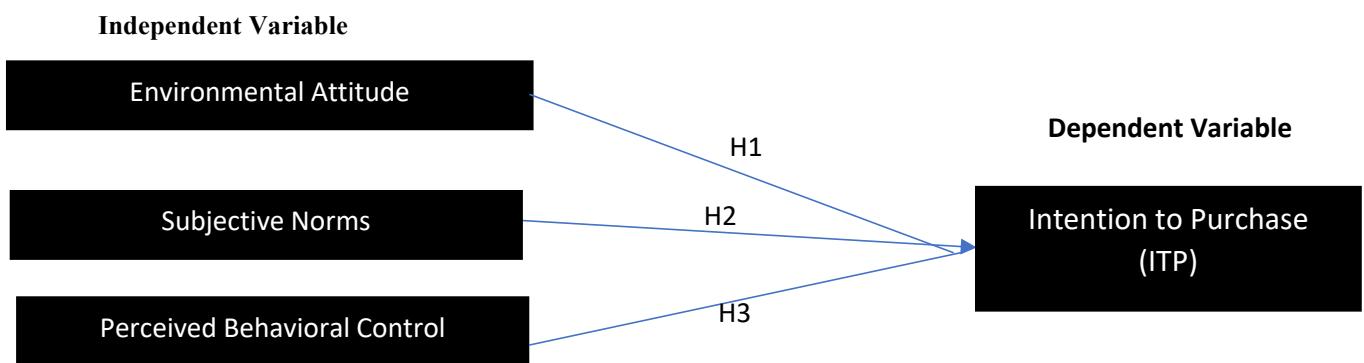
## 2.2. Conceptual framework

### 2.2.1. Full range leadership theory

The main dependent factor within theory of planned behavior (TPB) is customer motive, an indication when an individual is ready to behave in a particular manner. An expanded version of the theory of reasoned action (TRA) framework is known as the TPB. As a result, TPB includes perceived behavioral control as an additional criterion to determine an individual's behavior<sup>[26]</sup>. To put it briefly, three elements influence real conduct: attitudes towards actions, subjective norms, as well as perceived behavioral control<sup>[26]</sup>. Behavioral intents, in turn, drive how people act. TPB makes the assumption that individuals will carry out specific behaviors when they have a favorable perspective toward acts, once the usage of subjective standards on behaviour is advantageous, and when individuals possess a greater propensity towards perceived behavioral control<sup>[26]</sup>.

The initial forecast and a major factor in determining intent to act, based on the TPB, is attitude<sup>[26]</sup>. When an action is positive or negative, one's attitude is likely to be defined as their assessment of the matter<sup>[26]</sup>. Subjective norms, defined as how individuals react to significant comparison groups, for example close friends and family members, with specific acts, appears the second determinant. These opinions are taken into account once individuals choose to engage in particular behaviors<sup>[26]</sup>. The final indicator in TPB, perceived behavioral control, describes how easy or difficult an activity is thought to be performed<sup>[26]</sup>.

## 2.3. Research framework



**Figure 1.** Conceptual framework on factors affecting the buying habits of eco-friendly items.

## 2.4. Hypothesis development

### 2.4.1. Environmental attitude has a significant impact on intention to purchase online eco-friendly products among university students in Nilai, Malaysia

Environmental attitude serves as one of the key factors influencing the willingness of customers to buy environmentally friendly goods digitally because a mental outlook shaped by a certain environment acts as a subconscious thought which influences how a customer makes decisions<sup>[27]</sup>. Past study primarily backed this

assertion by pointing out that environmental attitude remains a byproduct of environmentally friendly advertising as well as ecological understanding<sup>[28]</sup>. Regarding environmental awareness, if a customer is aware of the fundamentals of the idea they want to purchase—in this situation, eco-friendliness—they are far more inclined to reconsider their decision not to purchase a product that is beneficial to the environment. Instead, when a customer chooses rather to buy any environmentally friendly goods, it could go beyond the entire idea of being environmentally friendly. This might have a significant negative impact upon a person's attitude toward the natural world and subsequently impact their decision to buy products that are environmentally friendly.

In terms of environmentally friendly promotional activities, also referred by the term ecological advertising, this represents the arena whereby the marketing unit of a particular environmentally friendly group will make every effort to persuade prospective customers to invest in their environmentally friendly label of products via inventive and creative types of marketing<sup>[29]</sup>. For instance, the Toshiba Corporation Class 5-Series represents the best option available for energy conservation, and its advertisements consistently makes it seem as though consumers considering purchasing TVs are genuinely concerned about the planet as well as its inhabitants' sustainability<sup>[30]</sup>. In this case we have reverse psychological analysis at its finest. The existence of environmental awareness as well as eco-friendly advertising within the environmental attitude factor, which will affect the decision to buy, indicates that environmental mindset certainly has a direct effect upon the consumer's decision for buying environmentally friendly products<sup>[31]</sup>.

University students in Nilai, Malaysia exhibit significant intentions to purchase eco-friendly products online when influenced by strong environmental attitudes. Studies show that environmental concern and attitudes towards green products directly impact purchase intentions<sup>[32,33]</sup> which reinforce the hypothesis that positive environmental attitudes drive eco-friendly purchasing behavior.

Thus, this research proposes the following hypothesis.:

H1: Environmental attitude has a significant impact on intention to purchase online eco-friendly products among university students in Nilai, Malaysia.

#### **2.4.2. Subjective norms has a significance impact on intention to purchase online eco-friendly products among university students in Nilai, Malaysia**

Subjective norms are essentially an individual's belief that someone should wait for permission from a particular individual or group before doing something which needs to be done on their own. It could be concluded that these expectations certainly have a significant impact upon an individual's desire to make a consumption, particularly a web-based environmentally friendly purchase. An individual's decision to buy might be naturally sparked by the existence of both societal and descriptive standards within subjective standards<sup>[34]</sup>. The buyer's decision to buy is greatly influenced by each of these implicit viewpoints and explanations. These factors encourage the buyer to think through the pros and cons of making a decision to buy in advance, a process that consequently helps indoctrinate the customer towards adopting or rejecting the newest trend which in this case is the pattern of buying environmentally friendly products in the marketplace<sup>[35]</sup>.

Thus, this research proposes the following hypothesis:

H2: Subjective norms has a significant impact on intention to purchase online eco-friendly products among university students in Nilai, Malaysia.

### 2.4.3. Perceived behavioral control has a significance impact on intention to purchase online eco-friendly products among university students in Nilai, Malaysia

A further significant factor that significantly influences a customer's buying intention is perceived behavioral control. Holding the ability to purchase is essentially a platform for a person's inspiration to take effect, thus this is the way buying is typically performed<sup>[36]</sup>. A customer won't make the time and effort required to purchase an item if they are not sufficiently driven to take steps to do so. This scenario is actually a typical example of perceived behavioral regulation, wherein an individual's desire toward purchasing increases with their perceived behavioral control. This happens primarily because the customer is able to overcome verbal as well as cognitive obstacles to making a decision to buy<sup>[37]</sup>.

H3: Perceived behavioral control has a significant impact on intention to purchase online eco-friendly products among university students in Nilai, Malaysia.

## 3. Data collection method

Based on methodology and design of previous studies, this study undertook a quantitative approach <sup>[38,39]</sup>. The data for this study will be collected through a survey questionnaire distributed via google form to students at Nilai, Malaysia. The questionnaire survey will be used as the primary data collection method. The data obtained will be analyzed from various perspectives to ensure a comprehensive outcome. The analysis will involve evaluating the data against the theoretical framework and conducting hypothesis testing using correlation analysis and reliability tests. Implementing rigorous data collection methodologies is crucial to ensure the accuracy and legitimacy of the acquired data. The sampling respondents will cover students from the Nilai district area which is the scope of this study. Therefore, all the key university students are the targetted respondents. A questionnaire survey via google form will be utilized in this study. Questionnaire will be used to survey and achieve the objective of this study. Each questionnaire will take about 15 minutes to complete. A 5-point likert scale begins with “strongly agree” on the left and ends with the “strongly disagree” on the right side of the scale. The 5-point likert scale is simple to understand and it is normally used for survey administrators and respondents alike and it also takes less time and effort to complete than higher-point scales. Moreover, it fits mobile device screens better than higher-point scales as well as respondents have choices without becoming overwhelmed. This supporting statement has been added:

## 4. Data analysis

The research findings from data analyses conducted with SPSS 27—including descriptive analysis, principal component analysis, Pearson's correlation, and regression—are provided in this section. Additionally, it evaluates the dependability of research instruments, strengthening the veracity of the conclusions.

### 4.1. Demographics data

The demographic profile of respondents who participated in the survey includes gender, age group, and qualification level of university students.

**Table 1.** Demographic profile of the respondents

Variable	Frequency	Percentage (%)
<b>Gender</b>		
Female	195	54.3
Male	164	45.7

Variable	Frequency	Percentage (%)
<b>Age</b>		
18 - 20 years old	50	13.9
21 - 23 years old	105	29.1
24 - 26 years old	149	41.3
27 - 29 years old	57	15.8
<b>Qualification Level</b>		
Foundation	46	12.7
Diploma	77	21.3
Degree	176	48.8
Postgraduate (Masters)	62	17.2

**Table 1.** (Continued)

A total of 361 students around the Nilai area in Malaysia took part in the online survey for this research. **Table 1** below illustrates the demographic profile of the survey respondents. According to **Table 1**, a total of 195 females (54.3%) and 164 males (45.7%) make up the total 361 respondents. Among them, the top was 149 respondents (41.3%) aged between 24 - 26 years old where this age group contributed the most for this research whereas the next comprising 105 respondents (29.1%), were aged between 21 - 23 years old. This was followed by 57 respondents (15.8%) aged between 27 - 29 years old while the remaining 50 respondents, (13.9%) belonged to the 18 – 20 year age group. Among the respondents, 176 (48.8%) had degree as their highest education level, the largest portion, whereas the next 77 respondents (21.3%) had diploma as their highest education level. 62 participants (17.2%) were postgraduate (masters) while the remaining 46 participants (12.7%) had foundation as their highest education level.

#### 4.2. Factor analysis

One technique for reducing the dataset's complexity yet retaining with much variety as it can is Principal Component Analysis (PCA).

**Table 2.** Kaiser-Meyer-Olkin and Barlett's Test

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.922
Bartlett's Test of Sphericity	Approx. Chi-Square	2667.087
	df	171
	Sig.	.000

The sample adequacy measured by the Kaiser-Meyer-Olkin (KMO) method is 0.922. In accordance with popular conceptions of the KMO test, this result is sufficient<sup>[40]</sup>. Overall, any value over 0.7 is regarded as being satisfactory, while anything over 0.6 is deemed sufficient. A chi-square reading of 2667.087 as well as a corresponding significance level (p-value) of 0.000 were obtained from Bartlett's Test of Sphericity. To sum up, the KMO measure as well as Bartlett's Test indicate that the results can be subjected to additional study using principal component study or other factor analysis techniques.

#### 4.3. Reliability test

In the fields of psychological testing, data analysis, and study findings, reliability analysis represents a crucial notion that assesses the general constancy of an indicator.

The factor that is dependent, intention to purchase, possesses a cronbach's alpha of 0.805. This shows that the scoring system has a high degree of internal stability with this specific item, implying that the items reflecting the desire to make green purchases are associated and measure the same notion. Comparably, the factor that is independent, environmental attitude, contains a cronbach's alpha of 0.811 whereas the other two independent factors, perceived behavioral control, contains a cronbach's alpha of 0.787, as well as the subjective norms have a cronbach's alpha of 0.737. Good internal reliability is indicated by all these cronbach's alpha values, indicating that the scales' components are appropriately connected and probably measure the appropriate fundamental categories. In summary, the scales employed in the present investigation for assessing these factors seem to be trustworthy, and the outcomes derived from utilizing these scales are probably trustworthy and repeatable.

**Table 3.** Reliability analysis results

Variable	Cronbach's Alpha	Decision
Intention to Purchase (DV)	0.805	Very Good
Environmental Attitude (IV1)	0.811	Very Good
Subjective Norms (IV2)	0.737	Good
Perceived Behavioral Control (IV3)	0.787	Good

#### 4.4. Normality test

The fundamental component of statistical evaluation that includes the main quantitative information in a research project is called descriptive analysis. Descriptive analysis also takes into account the distribution as well as form of the data itself, incorporating kurtosis and skewness<sup>[41]</sup>. The two are crucial for figuring out how the information is distributed and whether it approaches or differs over a distribution that is normal, that affects the selection of additional statistical tests. The variables' descriptive analysis findings are displayed in **Table 4**.

**Table 4.** Descriptive statistics results

Variable	Mean	Std Deviation	Skewness	Kurtosis	Distribution
Intention to Purchase (DV)	3.98	0.69	-0.4884	0.7546	Normal
Environmental Attitude (IV1)	3.894	0.6978	-0.3782	0.6028	Normal
Subjective Norms (IV2)	3.918	0.7414	-0.4934	-0.7224	Normal
Perceived Behavioral Control (IV3)	3.136	0.6026	-0.4656	0.6388	Normal

**Intention to Purchase (DV):** The median value for this variable is 3.98, which is the mean value. The majority of ratings differ from this average by roughly 0.69 units, according to the 0.69 standard deviation. A mildly left-skewed dispersion with a preponderance of greater scores is indicated by a skewness level of -0.4884. The frequency and magnitude of extreme departures from the average appear to be identical to an average distribution, as indicated by a kurtosis score of 0.7546, which is near the level of the normal distribution. The information thus becomes regularly presented. To be able to demonstrate a typical univariate distribution, the figures for asymmetries and kurtosis fall among -2 and +2<sup>[42]</sup>.

**Environmental Attitude (IV1):** The mean assessment of the environmental attitude is indicated by an average score of 3.894. With a standard deviation of 0.6978, we can infer that the majority of values differ by roughly 0.6978 units from the average. The bulk of the values are elevated, as indicated by the skewness number of -0.3782, which shows a little left skew. The existence of exceptions is almost as predicted in a distribution that is normal, as indicated by the kurtosis value of 0.6028, which is closer with the normal



distribution and verifies that the information is evenly distributed. In order to demonstrate a typical univariate distribution, the thresholds for asymmetry as well as kurtosis fall within -2 and +2<sup>[42]</sup>.

**Subjective Norms (IV2):** The median rating is 3.918, representing an average value. The degree of departure from the average value is shown by the standard deviation, which has the value of 0.7414. Better results are indicated by the small left skewness, as seen by a skew value of -0.4934. This distribution is regularly distributed, but its kurtosis measurement of -0.7224 indicates that it can be a little 'peaky' or inclined toward outliers than a distribution with a normal shape. Therefore, to demonstrate a univariate distribution that is normal, the thresholds for asymmetry as well as kurtosis fall within -2 and +2<sup>[42]</sup>.

**Perceived Behavioral Control (IV3):** The median amount of perceived behavioral control is indicated by a median score of 3.136. The majority of values differ from the average by this quantity, as indicated by the standard variation of 0.6026. Higher ratings are indicated by an average left skewness, as seen by the skewness of -0.4656. The existence of exceptions is almost as predicted in a distribution that is typical, as indicated by a kurtosis score of 0.6388, which is comparable within the normal range and verifies that the information is evenly distributed. Therefore, to demonstrate a typical univariate distribution, the thresholds for asymmetry as well as kurtosis fall within -2 and +2<sup>[42]</sup>.

Since all variables have a normal distribution overall, the average serves as a helpful indicator of the predominant trend for the information since the information points have a propensity to be grouped within the mean. Numerous statistical analyses that depend upon the assumption of normalcy can also be applied with this kind of dispersion.

## 4.5. Inferential analysis

### 4.5.1. Pearson's correlation analysis

Pearson's correlation analysis, also known as Pearson's product moment correlation, is a statistical measure that quantifies the strength and direction of the linear relationship between two continuous variables<sup>[17]</sup>. **Table 5** illustrates the relationship between the independent and dependent variables of this research.

**Table 5.** Pearson's correlation analysis.

Variables	Environmental Attitude	Subjective Norms	Perceived Behavioral Control	Green Intention	Purchase Intention
Environmental Attitude	1.000	0.726	0.278	0.778	
		<0.001	0.004	<0.001	
Subjective Norms	0.726	1.000	0.256	0.661	
	<0.001		0.008	<0.001	
Perceived Behavioral Control	0.737	0.848	0.276	0.693	
	<0.001	<0.001	0.004	<0.001	
Intention to Purchase	0.278	0.256	1.000	0.333	

0.004                      0.008                      <0.001

**Table 5.** (Continued)

The Pearson's correlation analysis findings demonstrate a strong correlation among purchase intentions as well as purchasing behaviors. The desire of buying and the mindset toward the environment have a significant positive relationship ( $r = 0.778, p < 0.001$ ), indicating that an elevated desire to consume is linked to a strong environmental attitude. Good subjective norms may improve desire to make a purchase, as evidenced by the relatively high ( $r = 0.661, p < 0.001$ ) beneficial relationship between subjective norms and desire to purchase. Additionally, there is a significant correlation between perceived behavioral control and desire to make a purchase ( $r = 0.693, p < 0.001$ ), suggesting that perceived behavioral power often influences intention to make a purchase. Each of these relationships have p-values ( $< 0.001$ ) that are less than the usual cutoff of 0.05, indicating that the findings are statistically noteworthy. These results demonstrate how different purchase intentions are related to one another as well as how these connections affect consumers' total purchasing behaviors.

#### 4.5.2. Multiple linear regression

One effective statistical technique for examining the correlations across factors is regression analysis. This is employed to comprehend the type and degree of the link that exists between a variety of independent (or predictor) factors as well as the dependent (or result) factor. Regression analysis essentially creates an equation that explains the statistical association among the outcome and a couple of predictions. It could be utilized for estimation, predictions, and figuring out how one variable affects another variable.

**Table 6.** Multiple linear regression

<b>Model summary</b>						
Model		<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>	
1		.925	.856	.855	.37790	
<b>Anova</b>						
	<b>Model</b>	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig</b>
1	Regression	39.478	150	8.278	44.095	<0.001
	Residual	19.944	210	0.176		
	Total	59.422	360			

a. *Dependent variable: intention to purchase*

b. *Predictors: (constant), environmental attitude, subjective norms, perceived behavioral control*

<b>Coefficients of multiple regression</b>						
<b>Model</b>		<b>Unstandardized B</b>	<b>Coefficients Std. Error</b>	<b>Standardized Coefficients Beta</b>	<b>t</b>	<b>Sig. (p value)</b>
1	(Constant)	-0.005	0.325		-0.030	0.981
	Environmental Attitude	0.577	0.087	0.549	5.989	<0.001

Subjective Norms	0.051	0.134	0.044	0.339	0.567
Perceived Behavioral Control	0.189	0.124	0.199	1.652	0.880

**Table 7.** (Continued)

a. Dependent variable: intention to purchase

The findings of the regression evaluation point to a strong correlation among the factor that is dependent and each of the independent variables. There is a significant correlation among the expected and actual values, as indicated by the framework's correlation coefficient R of 0.792. With R<sup>2</sup> and Adjusted R<sup>2</sup> values of 0.620 and 0.633, accordingly, the predictive factors explain a remarkably high fraction of the dependent variable's variance, 63.3% and 62.0%, correspondingly. Even with these encouraging results, the framework is still inadequate to clarify between 35.1% and 37.5% of the variation across the factor that is dependent. This could be because of various variables that were not taken into account throughout the research. All factors considered; the framework emphasizes how important the predictors are in affecting the dependent factor. An average effect is indicated by a R<sup>2</sup> score of 0.633.

The regression model offered the ANOVA breakdown table that indicates the framework which explains a sizable percentage of the variation within the factor that is dependent. The variance which the framework takes into consideration, is shown by the regression sum of squares (39.478), whilst the unaccounted variation is indicated by the residual sum of squares (19.944). It has 150 degrees of freedom (df) in the equation, while there are 210 residual df. The median described variability is represented by the average of the square figures, which are 8.278 for the regression as well as 0.176 for the residual. The related p-value (<0.001) is beneath the threshold for significance of 0.05, while the F-value (44.095), which shows the proportion of explained towards unexplained variability, appears quite high as well. Our comprehension of the behavior of the factor that is dependent is much enhanced by the predictors that were included, since these results testify to the relevance of the model and its efficacy in interpreting the variation within the factor that is dependent.

According to the findings of the regression analysis, environmental attitude is the only factor that significantly predicts intention to purchase. For every unit increase in environmental attitude, there is additionally a corresponding increase in intention to purchase of 0.549 units ( $\beta=0.549$ ,  $t > 1.645$ ,  $p < 0.05$ ). On the other hand, subjective norms show no significant impact upon intention to purchase ( $\beta=0.044$ ,  $t < 1.645$ ,  $p > 0.05$ ) whereas there is no significant influence of perceived behavioral control ( $\beta=0.199$ ,  $t > 1.645$ ,  $p > 0.05$ ) upon intention to purchase.

In conclusion, there is clear evidence that environmental attitude has a big impact upon purchasing intention. There is a 0.577-unit spike in desire of purchasing for every unit rise in environmental behavior ( $\beta=0.549$ ,  $t > 1.645$ ,  $p < 0.05$ ).

#### 4.6. Hypothesis testing

The hypothesis screening outcomes show that there are different levels of support for the suggested theories. The first hypothesis (H1), which suggested that university students' intentions of purchasing products are positively and significantly influenced by their environmental attitudes, was found to be true. This association is supported by the standardized beta coefficient ( $\beta$ ) of 0.549 as well as a p-value of below 0.05. Nevertheless, there was no evidence to support hypothesis 2 (H2), that postulated a substantial impact of subjective norms upon intent to buy. The statistical analysis revealed that the  $\beta$  value was 0.044 as well as the p-value was greater than 0.05, suggesting that there was no significant influence. Additionally, there was no evidence to support hypothesis 3 (H3), which proposed that desire to buy is positively influenced by

perceived behavioral control. The p-value proved to be exceeding 0.05, indicating that a substantial effect was not demonstrated, despite the  $\beta$  value of 0.199, which shows a strong positive correlation.

In conclusion, it was discovered that independently, the environmental attitude significantly and favorably affected students' intentions to buy, with the remaining two independent variables not showing any significant consequences.

**Table 8.** Summary of hypothesis testing

Hypotheses	Std Beta ( $\beta$ )	t-value	p-value	Decision	R <sup>2</sup>	VIF
<b>Hypothesis 1 (H1):</b> Environmental attitude has a positive and significant influence on intention to purchase among university students.	0.549	5.989	<0.05	<b>Supported</b>	0.856	2.656
<b>Hypothesis 2 (H2):</b> Subjective norms have a positive and significant influence on intention to purchase among university students.	0.044	0.339	>0.05	<b>Not Supported</b>		3.678
<b>Hypothesis 3 (H3):</b> Perceived behavioral control has a positive and significant influence on intention to purchase among university students.	0.199	1.652	>0.05	<b>Not Supported</b>		1.082

## 5. Discussion and conclusion

### 5.1. Discussions of findings

The following sections will discuss on the conclusions drawn from the findings:

H1: Environmental attitude has a significance influence on intention to purchase online eco-friendly products among university students

The first experimental question examined how university students' attitudes toward the environment affected their propensity to buy environmentally friendly goods. The results of this study supported the results of numerous other studies, including those which highlighted the significant influence of environmental attitude upon intention to buy eco-friendly items<sup>[41]</sup>. A strong connection ( $\beta=0.549$ ,  $t > 1.645$ ,  $p < 0.05$ ) was found in the analysis, supporting the claim that a positive environmental attitude is essential for increasing the desire to buy environmentally friendly goods<sup>[43]</sup>. The results confirm that learners' good views about the surroundings are supported when there is a positive atmosphere, and this increases their desire to buy sustainable goods<sup>[44]</sup>. The justification for engaging into a happier lifestyle and a more positive environmental mindset in the direction of the goal to purchase environmentally friendly goods is strengthened by this congruence with the body of existing studies<sup>[45]</sup>.

Understanding the environment may additionally have a significant impact on a person's intention to buy green items. According to earlier studies, buyer motives and actions while purchasing environmentally friendly goods can be influenced by awareness of the environment<sup>[37]</sup>. Furthermore, the most important factor influencing consumers' intentions to purchase green products was their familiarity with green brands<sup>[46]</sup>.

Therefore, using these results, the following hypothesis is validated for research question 1: environmental attitude has a positive and significant influence on intention to purchase online eco-friendly products among university students

H2: Subjective norms has a significant influence on intention to purchase online eco-friendly products among university students

The subjective norms around the desire to buy environmentally friendly goods were examined in the second question. It is often acknowledged that subjective norms play a substantial role in influencing consumers' intentions to buy environmentally friendly products via the internet. The main motivation for implementing environmental behaviors is fulfilling societal and ethical obligations<sup>[47]</sup>. Therefore, when individuals encounter higher expectations from their peer group, they can indulge in environmental conduct more actively by buying eco-friendly goods<sup>[48]</sup>.

The results, nevertheless, were inconsistent with the theory that consumers' intentions to buy eco-friendly goods are affected by subjective norms. The p-value had been below 0.05, even though the  $\beta$  value was 0.051 ( $\beta=0.044$ ,  $t < 1.645$ ,  $p > 0.05$ ). This implies that although subjective norms could influence intention to buy, their connection might not be as significant or straightforward as previously thought. This divergence from the body of research highlights the nuanced nature of the connection among intentions to buy and subjective standards as well as raises the possibility that additional variables may be important.

In summary, hypothesis 2 cannot be verified by the facts, and the researcher put up the following hypothesis: subjective norms do not positively or significantly affect university students' intentions to buy environmentally friendly products.

H3: Perceived behavioral control has a significance influence on intention to purchase online eco-friendly products among university students

The perceived behavioral control over purchasing intention was the focus of the third research question. In general, customers are more inclined to buy environmentally friendly products when they have greater access to possibilities and assets, face less obstacles, and have greater control over what they do<sup>[43]</sup>. The results of the present research, nevertheless, failed to give credence to the idea that intention to buy environmentally friendly goods is positively influenced by perceived behavioral control. The p-value was below 0.05, however the  $\beta$  value reached 0.199, showing a significant positive association ( $\beta=0.199$ ,  $t > 1.645$ ,  $p > 0.05$ ). This implies that although intention to buy environmentally friendly goods could be influenced by perceived behavioral control, the connection between the two could not be as strong or direct as previously thought.

Even if the results of this study don't align with what is known about the subject, there is still much to learn about the role that perceived behavioral control plays in consumers' intentions to buy environmentally friendly products<sup>[49]</sup>. The results of this study indicate the fact that there could be a deeper connection among university students' intentions to purchase environmentally friendly products and their perceptions of behavioral control, underscoring the need for greater investigation into this connection.

In conclusion, the researcher concluded that the assumption for research question 3 was unsupported considering these data and put out the following explanation: perceived behavioral control has no positive and significant influence on intention to purchase eco-friendly products among university students.

## **5.2. Implication of the study**

### **5.2.1. Theoretical implications**

This study provides some empirical evidence that has theoretical implications. Above all, it adds to the body of evidence available about the factors influencing university students' intentions to buy environmentally friendly products via the internet<sup>[50]</sup>. The study confirms the importance of elements like environmental behavior, highlighting how crucial a role they play in boosting purchase intention. Through an

examination of these variables within the setting of college students, the study expands on a sophisticated comprehension of their impact and interdependence. This creates opportunities for more study and investigation and widens the scholarly conversation in the topic.

Furthermore, the study offers a real-world application and experimentation platform for well-established theories in a novel setting. In the present research, students at universities in Nilai, Malaysia, had their purchasing intentions examined in relation to theories such as the theory of planned behavior. Through providing empirical data from this specific industrial as well as cultural environment, the research enhances the technique of developing ideas and verifies their relevance in other settings<sup>[57]</sup>.

### **5.2.2. Managerial implications**

Regarding the study's management implications, the results are a priceless tool for adults in general and college students in particular. First of all, the research emphasizes the possible advantages of helping students at universities develop and achieve their goals to buy environmentally friendly goods. It implies that making consistent efforts to enhance environmental attitudes can have a beneficial knock-on impact on consumers' intentions to buy environmentally friendly goods digitally<sup>[58]</sup>.

The results of this research are crucial from a managerial perspective since they may have various managerial ramifications that benefit company executives in developing advertising approaches and offering suggestions and guidance for its strategy<sup>[51]</sup>. Among the characteristics examined, the study discovered that behavior is the most significant predictor of customers' intention to make green purchases. Customers are more inclined to purchase sustainable goods if they have a favorable opinion towards them<sup>[52]</sup>. In order to help customers form positive opinions regarding environmentally friendly products, marketers as well as government agencies may work together to promote an upbeat perception of sustainable goods<sup>[53]</sup>.

Essentially, these consequences highlight how strategically important it is to manage this factor in a proactive manner in order to maximize the intention to purchase eco-friendly items<sup>[54]</sup>. By understanding their customers' purchasing patterns, environmentally conscious businesses can improve their overall efficacy as well as strengthen their position in the market<sup>[55]</sup>.

### **5.3. Limitation of the study**

Even with careful efforts to perform an extensive study, certain limitations were unavoidable.

Initially, the study was restricted to a small geographical region which is the Malaysian district of Nilai. Although there are numerous universities in this location, the results could not be representative of all Malaysian higher education learners, which would restrict how broadly the findings can be applied<sup>[56]</sup>. Furthermore, the research's participants were overwhelmingly female (54.3%), a finding that is at odds with Malaysia's true demographic makeup<sup>[59]</sup>. As a consequence, there might not be as many people in Malaysia who can generalize the findings to both the sexes. The data collected for further studies ought to balance the male and female groups<sup>[60]</sup>.

Third, the research project was conducted for just two months, marking a comparatively short time frame. Longer-term monitoring may provide greater understanding regarding the changing patterns of college students' desire of purchasing environmentally friendly goods, even though this has been suitable for data collection and analysis<sup>[61]</sup>. Moreover, despite its durability and objectiveness, the analysis's method of quantitative investigation may not fully reflect the depth and complexity of each student's unique observations and views upon their intention to purchase eco-friendly goods<sup>[62]</sup>. A mixed-methods strategy that incorporates quantitative and qualitative data may prove advantageous for upcoming studies<sup>[63]</sup>.

#### **5.4. Recommendations for future research**

Upcoming comparative studies might benefit from a number of these advancements. Future studies could gather samples of participants that are similar to each other according to Malaysia's exact demographic composition<sup>[64]</sup>. In addition, for upcoming research to properly comprehend the general condition of higher education learners purchasing environmentally friendly goods in Malaysia, responses should be expanded to include additional states<sup>[65]</sup>. In order to further explore the results of the present study, future studies may additionally take a look at the impact of comparable characteristics and customers from various nations<sup>[66]</sup>.

It would also be advantageous to take into account the opinions of both sexes regarding the variables influencing their intention to buy environmentally friendly products<sup>[67]</sup>. To ensure that the information collected is far more adequate, the samples collected for upcoming study need to be balanced in terms of gender<sup>[68]</sup>. Additional multi-year longitudinal investigations might be conducted to monitor developments and modifications throughout the years, offering an additional dynamic overview of college students' desires to buy environmentally friendly goods<sup>[69]</sup>.

Ultimately, using a mixed-methods strategy could make way for a deeper investigation of the variables impacting college students' desires to buy environmentally friendly products<sup>[70]</sup>. The collection of qualitative information, via focus sessions or interviews, would enhance the quantitative results by providing additional complexity and depth towards the knowledge of learners' experience as well as perceptions<sup>[71]</sup>.

### **6. Conclusion**

In brief, the environmental mindset has been shown to possess a significant impact across the three characteristics expected to influence college students' propensity for purchasing environmentally friendly goods<sup>[72]</sup>. To discover more about how perceived behavioral control as well as subjective standards affect university students' purchasing decisions about environmentally friendly goods, additional research needs to be conducted<sup>[73]</sup>.

The study emphasizes how important positive purchasing behaviors are in supporting students' intentions<sup>[74]</sup>. Additionally, it highlights the impact of powerful subjective norms—like peer pressure—that have a positive correlation with customers' propensity to buy environmentally friendly goods<sup>[75]</sup>. Additionally, a large proportion of participants might experience societal pressure to adhere to subjective norms as well as engage in environmental preservation actions, for example buying eco-friendly products, in order to live up to the requirements set by external authorities<sup>[76]</sup>. On the level of its application, the research offers companies and college students a useful manual that offers advice on how to buy environmentally friendly goods<sup>[77]</sup>. Notwithstanding certain limitations such as regional constraints and gender-based viewpoints, the study's conclusions provide a substantial contribution to the current corpus of information and provide a foundation for further investigation<sup>[78]</sup>. The limitations of this study pave the way for future studies aimed at fostering a more thorough comprehension of the elements influencing consumers' intentions of purchasing environmentally friendly items<sup>[79]</sup>.

In conclusion, this research provides insightful information for professionals in the industry as well as supports and enhances the theoretical foundations around desire to make purchases on sustainable goods<sup>[80]</sup>. Retailers will better understand the needs of their customers and able to design and tailor their marketing strategies to ensure better customer buy-in. By using a variety of research techniques, suggestions for further investigation are made to get more accurate and thorough results<sup>[81]</sup>. In addition, future research could use the TPB model as well as incorporate fresh information pertaining to the regions of Malaysia to gain a deeper understanding of the intentions of college students to buy environmentally friendly goods.

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**Author contributions:** For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “Conceptualization and MS, HNK; methodology, MMI; software, TL; validation, RH, ARS and HNK; formal analysis, TL; investigation, ARS; resources, TL; data curation, RH; writing—original draft preparation, MS; writing—review and editing, RH; visualization, ARS; supervision, ARS; project administration, MMI; funding acquisition, ARS, RH & TL. All authors have read and agreed to the published version of the manuscript.” Please turn to the CRediT taxonomy for the term explanation. Authorship must be limited to those who have contributed substantially to the work reported.

## Conflict of interest

The authors declare no conflict of interest.

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