

## **Environmental buying decisions: A Kenyan perspective**

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## **ABSTRACT**

This study is for the purpose of determining the environmental buying decisions among tertiary students in Kenya. Global awareness on environmental concerns has led scientists to study human behaviour as it relates to environmental issues. In Kenya there have been sporadic activities that are aimed at taking care of the environment or raising the awareness of the extent of environmental degradation in certain areas. However there is a lack of a clear coordinated plan or policy to address environmental issues. This could be due to lack of sufficient exposure of people to the growing environmental problems consequently the population has not developed habits of taking care of the environment. The specific objectives of the study were to: determine the environmental buying decisions made by tertiary students and to establish how some socio-demographic factors influence the buying decisions that tertiary students make. The study employed both quantitative and inferential methodology to achieve the objectives and also test the hypothesis. The target population of the study was all the students at Strathmore University Madaraka campus, in Nairobi, Kenya and a sample of 203 respondents was drawn. The study concluded that age is a key factor when making buying decisions regarding the issue of the environment. The results indicated that the more the older the person the more the individual will consider the environmental issues when making a decision to purchase an item. The study also noted that the decision to be environmentally conscious lies on an individual but not whether one is a man or a female. The study also concluded that the level of income does not seem to influence the buying decisions that people make. Having used a convenient sample may hinder the possibility of generalising the findings to the broader population.

**Keywords:** Environmental concern; buying decisions; Kenya; environmental behaviour; quantitative methods.

## **1. INTRODUCTION**

Environmental issues have stimulated research in the last few decades. Research exists on the impact of human behaviour on the environment, air pollution, climate change, water pollution and depletion of resources (Lehman & Gellar, 2004). A lot has also been written regarding handling of solid waste, soil erosion and contamination, loss of green space and species diversity (Lehman & Gellar, 2004). Concern for the protection of the environment has led scientists to study human behaviour in relation to environmental issues. Behavioural intervention or pro-environment behaviour has been proposed, setting targets and techniques to promote constructive behaviour towards the environment (Lehman & Geller, 2004).

However the concern of marketers regarding environmental issues is to establish the impact that these have on consumer buying decisions. There is evidence in research that environmental concerns do affect consumer buying decisions ( Prakash, 2002; Diamantopoulos, Schlegelmilch, Sinkovics & Bohlen, 2003. Companies are more sensitive toward environmentally friendly goods and services ( Wedel and Kamakura, 2000) and consequently these companies have an interest in segmentation analysis to enable them to target their market of environmentally conscious consumers more effectively ((Wedel and Kamakura, 2000).

## **2. RESEARCH OBJECTIVES**

A number of environmental protection initiatives have been implemented or considered in a number of communities. These are not very wide spread and they are limited to certain communities. Tertiary institutions by virtue of their access to young people (who may be more exposed to environmental concerns) are an ideal place to conduct research: The following research questions can then be posed:

- What are the environmental buying decisions made by tertiary students?
- How do socio-demographic factors influence the buying decisions that tertiary students make?

The research objective for this specific project is to determine the environmental buying decisions made by tertiary students in the Kenyan context.

### **3. LITERATURE REVIEW**

#### **3.1 The impact of behaviour on the environment**

The earth's population has been on the increase over the past 100 years from approximately 1.5 billion in 1900 to 6.3 billion in 2003 (; Cohen, 2003). The United Nations has projected that the world's population will reach 8.9 billion by the year 2050 (United Nations, 2002). Though the earth's carrying capacity is not well known, even with the current population, many practices are not sustainable, so that the consequences of our actions and the limited resources available will interfere with what the future generations will have to depend on (Lehman & Geller, 2004). Many of the products people use today are used and then discarded and this leads to the accumulation of waste and pollution of the environment.

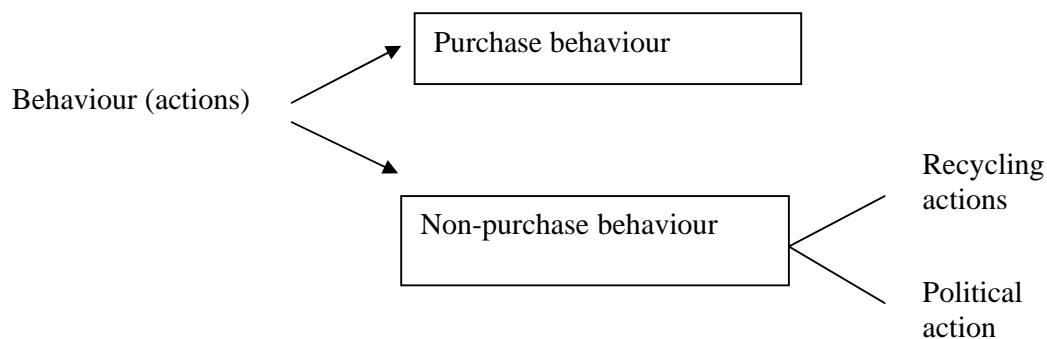
#### **3.2 Environmental concern**

Scholars have for a number of years successfully profiled consumers according to their environmental awareness ( Diamantopoulos et al., 2003); for example some have measured environmental attitudes ( Blackwell, Miniard and Engels, 2006; De Young, 2000), capturing individuals' level of concern/interest regarding specific aspects of the environment. Other studies have looked at past, current and future or intentional commitment towards involvement in activities that aim at minimizing the negative impact on natural environment ( Lehman & Gellar, 2004). However, though a weak link between attitudes and behaviour has been noted ( Diamantopoulos et al.,2003; Blackwell et al., 2006), attitudinal components alone have failed to predict actual behaviour. Other researchers have argued that in order to be 'green' individuals require an understanding of the consequences of their behaviour ( Wedel and Kamakura, 2000; Albarracin, Johnson & Zanna, 2005). The awareness of the negative impact that certain actions can have on the environment together with a sense of responsibility could lead to increased likelihood of recycling actions according to Schwart's norm activation theory (Stern, Dietz & Kalof., 2005). The behaviour of the individual is driven by a personal norm, such as altruism, and this affects attitudes and actions towards the environment for example recycling (Stern et al., 2005; Vining & Ebreo, 1990 ). The altruistic motivation stems from a real concern for the 'common good' rather than a perceived immediate personal benefit (Huge, Brodin & Anderson, 2008). This will include the good of society at large, the future generations and respect for natural environment. The altruistic behaviour then becomes the basis for sustained recycling activities (Huge, Brodin & Anderson, 2008).

Scholars have generated studies on environment from different points of view, Prakash (2000) wrote about greening the firm specifically the politics of corporate environmentalism; De Young (2000) tried expanding and evaluating motives for the environmentally responsible behaviour; Barr (2007), looked at the factors influencing environmental attitudes and behaviours; Cleveland, Kalamas and Laroche (2005), studied the shades of green behaviour linking environment locus of control and pro-environmental behaviours; ; Diamantopoulos, Schlegelmilch, Sinkovics & Bohlen (2003), explored whether socio demographics still have a role to play in profiling green consumers in which they paid some attention to the environmental consciousness of consumers. In an earlier paper they explored variables specific to environmental consciousness to see if they were suitable for categorizing consumers' green purchasing decisions. They measured environmental knowledge, attitudes and behaviour, a study they carried out among students in the UK. Lehman and Gellar (2004) analysed behaviour and environmental protection in which they looked closely at accomplishments and potential for more. Some studies have tried to link green behaviour with purchasing decisions as well as measures of environmental consciousness as Prakash (2002), and Wedel & Kamakura (2000).

Two types of consumer behaviour reflecting environmental concern have been identified by Bohlen, Schlegelmilch and Diamantopoulos (1993), namely purchasing and non-purchasing behaviour. These are reflected in Figure 1.

Figure 1 A model of environmental concern behaviour



Adapted from: Bohlen, Schlegelmilch and Diamantopoulos (1993)

Given the link between knowledge attitudes and behaviour, it is obvious that the type of outcomes may be influenced by country-specific factors such as levels and types of pollution, the existing legislation regarding environmental issues as well as the availability of green

products which in turn affect the environmental consciousness construct and how it can be operationalized Barr, 2007). The majority of studies on environmental issues have been done in the US and therefore the results may not be valid for other settings (Diamtopoulos et.al., 2003).

In Kenya a number of organizations have made efforts to take care of aspects of the environment. Campaigns for cleaning the rivers, planting trees, cleaning up facilities or estates are carried out from time to time and are generally well publicized by the media. The government has put a few laws in place to protect the environment. However there is a lack of a clear coordinated plan or policy to address environmental issues. This could be due to lack of sufficient exposure of people to the growing environmental problems consequently the population has not developed habits of taking care of the environment. There is no literature available on environmental buying decisions in the Kenyan market. This paper hopes to determine the environmental buying decisions that tertiary students make and whether socio-demographic factors have any influence on these decisions and whether there is a relationship between the environmental buying decisions and the socio-demographic factors, age, gender and income.

### **3.3 Hypothesis development**

Though studies using socio-demographics to determine their effect on environmental behaviour have yielded mixed results (Diamantopolous et al., 2003), this research was undertaken in an effort to establish if there is any awareness of the need to conserve the environment and if this awareness has any influence on the buying decisions people are making in an emerging economy like Kenya. There did not seem to exist any published research in this area carried out in Kenya, at the moment of writing

A number of hypotheses were then formulated for the project:

H1: Customers who are older will exhibit more buying decisions based on environmental concerns

H2: Women exhibit more buying decisions based on environmental concerns

H3: Customers from middle income group exhibit more buying decisions based on environmental concerns

#### 4. RESEARCH METHODOLOGY

Use was made of a quantitative methodology. The research was of a descriptive design whose aim was to conduct an initial exploration of the environmental issues. In this research a paper-based self administered survey was used to collect data from respondents.

The target population of the study was all the students at Strathmore University Madaraka campus, in Nairobi, Kenya. This is a private University that has a population of students from different ethnic, social and economic backgrounds and therefore fairly representative of the population of the country at large. The population consisted mainly of students at this University. The data was collected by volunteer students during the break periods and after classes on campus. A convenience sample of 203 respondents was drawn.

The research instrument consisted of four sections:

**Section A:** Demographics of the respondents

**Section B:** Measurement of abstract knowledge on a five-point unlabelled Likert scale (where 1=unconcerned and 5= very concerned). There was also measurement of some concrete knowledge regarding questions posing where to recycle and what can be recycled.

**Section C:** Attitudes to environmental issues, including belief and affect components. The 23 statements are derived from a study done by Bohlen et al. (1993), as well as from Maloney, Ward & Braucht (1975). The scale used was a five- point unlabelled Likert scale (where 1=strongly disagree and 5= strongly agree).

**Section D:** Actions or behaviours exhibited with respect to environmentalism. They are also linked to the studies conducted by Bohlen et al. (1993), Vining and Ebreo (1990) and Maloney et al. (1975), and contain statements that relate to both buy- and non-buying actions. The scale used was a five-point unlabelled Likert scale (where 1=never and 5= always).

This research determined the reliability of the measurement set and the distribution of the results. The scores were calculated for the different components of the study and the hypotheses were tested using parametric test.

## 5. FINDINGS OF THE RESEARCH

203 usable responses were retrieved. The following sections present the results on reliability tests and the distribution of measurement set, profile of the respondents, the findings on the awareness, attitudes and actions on environmental issues and the outcome of the hypothesis testing.

### 5.1 Reliability

Reliability was measured using Cronbach's Alpha technique. The dimensions of awareness and actions registered a high reliability of 0.875 and 0.823 respectively whereas the dimension on attitudes recorded a satisfactory reliability of 0.728. A value of less than 0.7 according to Hair, Bush & Oritneau, (2006), indicates a low level internal reliability. This measurement set is therefore deemed to be reliable.

Table 1

Dimension	Number of items	Cronbach's Alpha	Reliability
Awareness	12	0.875	High reliability
Attitudes	23	0.728	Satisfactory reliability
Action	13	0.823	High reliability

### 5.2 Respondent profile

The table 2 presents the profile of the respondents in this research. The majority of the respondents were in their 20's (79.3%), female (62.1%), and 37.9% male. The question on the level of education was misunderstood and contradicts the question on employment it was therefore ignored. The home language category has a mixed distribution of 39.1% of category including the Kalenjin/Maasai/Kikuyu/Mijikenda having the largest percentage while the category with Kisii/Embu/Dholuo/Turkana had 15.3%. The distribution is a good representation of the general population. For the income category, the greatest percentage is those who came from households earning less than Ksh 25,000 per month (59.7%) of those who responded. However, 34.3% of the total respondents did not answer this question. All the respondents were Kenyan (100%) and a good mix of students studying the University



with the largest group drawn from the Faculty of Commerce (37.6%) incidentally this is the largest department in the University.

**Table 2: Respondents profile**

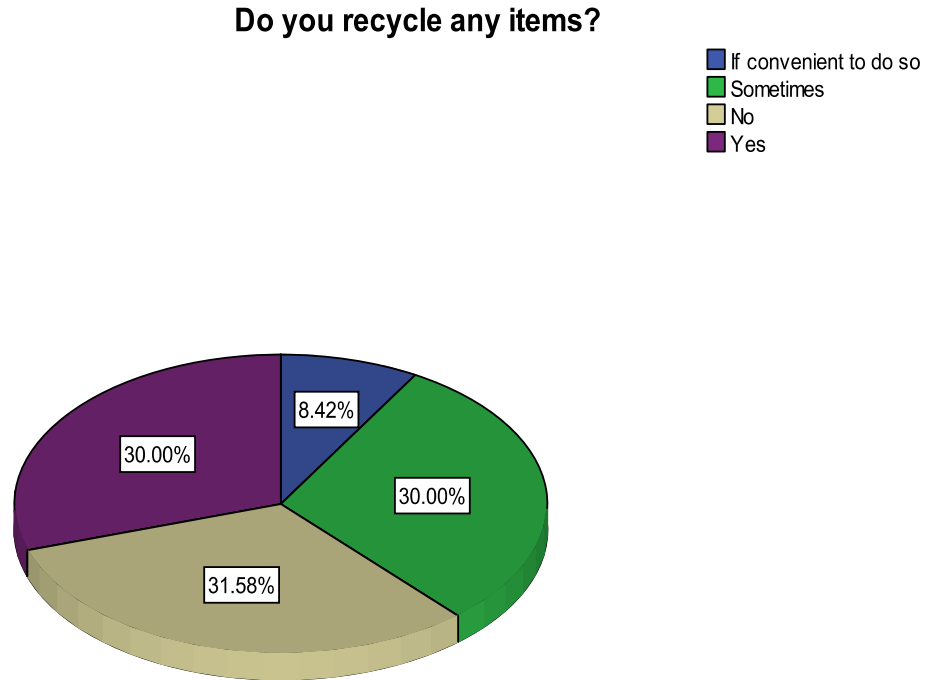
Characteristic	Distribution
Age	15.3% younger than 20;
	79.3% in their 20s;
	3.0% in their 30s and
	2.5% in their 40s
Gender	37.9% male; 62.1% female
Education completed	10.3% had completed high school;
	9.4% had a technical qualification;
	78.3% had an undergraduate qualification and
	1.0% had a postgraduate qualification
Employment status	9.4% were employed on a full-time basis;
	5.4% part time;
	77.2% were students and
	7.9% unemployed
Home language	16.8% Kiswahili;
	13.4% English;
	39.1% Kalenjin/Mijikenda/Maasai/Kikuyu;
	15.8% Kisii/Embu/Dholou/Turkana;
	21.3% Meru/Kamba/Kiluhya/Kuria;
	8.4% “Other Kenyan”;
	0.5% Other Asian;
	0.7% other European languages
Net monthly household income	59.7% less than Ksh25,000;
	8.2% Ksh25,000 – Ksh45,000;
	5.2% Ksh45,001 – Ksh60,000;
	4.5% Ksh60,001 – Ksh80,000;
	5.2% Ksh80,001 – Ksh110,000;

	6.0% Ksh110,001 – Ksh160, 000;
	6.0% Ksh160,001 – Ksh300,000;
	5.2% Ksh300,001 and above;
	Note: 34.3% missing i.e. did not respond
Nationality	100% Kenyan
Place of residence	49.8% live less than 5km from campus;
	50.2% live more than 5km from campus
Faculty/School of registration	18.8% School of Accountancy;
	37.6% Faculty of Commerce;
	22.8% Faculty of Information Technology;
	20.8% School of Tourism and Hospitality

### 5.3 The component of action on environmental issues

The highest mean recorded was on the statement (3.90) ‘I choose an environmentally friendly alternative if one of a similar price is available’ and the lowest was (2.24) was on ‘I boycott organisations that are not environmentally responsible’. The statement which recorded the lowest standard deviation was ‘I have changed to products that are environmentally friendly’. This reflects that many people are making deliberate choices to promote environmentally friendly products.

## 1.0 Actions



**Figure 1.1 Recycling**

Figure 1.1 shows the results on the questions regarding recycling of items. From these results 30 percent of the respondents agreed to recycling different items while a slight majority 31.58 percent revealed that they don't recycle irrespective whether the items in question are recyclable or not. 30 percent of the other respondents revealed that they do recycle sometimes while 8 percent confirmed that they recycle if it is necessary to do so. The results imply that overall the majority of the respondents are concerned about environmental issues particularly on recycling products. However there was a high percentage of those who said that they do not recycle.

**Table 3: Descriptive statistics on actions statements**

Action	Descriptive Statistics	
	Mean	Std. Deviation
I choose an environmentally-friendly alternative if one of a similar price is available	3.95	1.147
I would join an environmental group to protect the environment	3.81	1.213
When possible, I prefer to buy organically grown fruit and vegetables	3.79	1.465
I encourage other people to recycle	3.25	1.410
I take shopping bags when doing grocery shopping	3.22	1.612
I make a special effort to buy products in recyclable containers	3.19	1.437
I prefer to buy recycled paper products	3.01	1.341
I have changed to products that are environmentally-friendly	2.96	1.241
I buy products that have not been tested on animals	2.91	1.720
I try to buy environmentally-friendly detergents and cleaning materials	2.79	1.296
I choose environmentally-friendly products regardless of the price	2.76	1.196
I try to find out about the environmental effects of a product before I buy it	2.50	1.234
I boycott organizations that are not environmentally responsible	2.41	1.363

## **6. DISCUSSION OF FINDINGS**

### **6.1 Environmental buying decisions made by tertiary students**

The aim of this study was to determine the environmental buying decisions made by tertiary level students and to establish how some socio-demographic factors influence those buying decisions.

Table 3 shows the means and standard deviations of the different questions on the environmental buying decisions made by the tertiary students. These results indicate that

there are three issues that the students seem to consider when making the environmental buying decisions those with mean ( $\geq 3.5$ ) with significant standard deviation. These include: Choosing an environmentally-friendly alternative if one of a similar price is available, joining an environmental group to protect the environment and when possible buying organically grown fruit and vegetables. The results from the table also indicate that some of the decisions that the students sometimes make when purchasing items (mean  $\geq 2.5$ ) with significant standard deviation. These include: encouraging other people to recycle, taking shopping bags when doing grocery shopping, making special effort to buy products in recyclable containers, buying recycled paper products, changing to products that are environmentally-friendly, buying products that have not been tested on animals, buying environmentally-friendly detergents and cleaning materials, choosing environmentally-friendly products regardless of the price and trying to find out about the environmental effects of a product before buying it. However the students do not seem to boycott organizations that are not environmentally responsible.

## **6.2 Effects of socio-demographic factors on the buying decisions**

Table 4 shows the results of cross tabulation between the levels of education, gender and choosing an environmentally friendly alternative if one of a similar price is available. The results indicate that 11 percent of female university students do not consider choosing an environmental friendly alternative product while the majority of female's students at (56 percent) do consider making a choice between the alternatives. In the case of males, half of the university students do not consider these alternatives while the other half does sometimes make these decisions. The results also indicate that 30 percent of females with technical courses sometimes consider choosing the alternative products based on environmental issues while 60 percent of the females are usually guided by this principle. In the case of males, only 30 percent of high school leavers do not seem to make this decision while the majority of them actually decide between buying the items which are environmentally friendly if the alternatives are available at similar prices.

**Table 4: Cross tabulation between the level of education, gender and choosing an environmentally-friendly alternative if one of a similar price is available**

		choosing an environmentally-friendly alternative if one of a similar price is available			
		Never	Sometimes	Always	Not applicable
Female	University degree (undergraduate)	11.0%	31.0%	56.0%	2.0%
	Technical diploma/degree		30.0%	60.0%	10.0%
	Completed high school		36.4%	63.6%	
Male	University degree (postgraduate)	50.0%	50.0%		
	University degree (undergraduate)	10.9%	21.8%	65.5%	1.8%
	Technical diploma/degree		22.2%	66.7%	11.1%
	Completed high school	30.0%	10.0%	60.0%	

Table 5 shows the cross tabulation results between the level of income of respondents and choosing environmentally friendly products regardless of the price. The results indicate that 37.2 percent of all the respondents earning less than 25 000 Kenyan Shillings (USD 300) do not usually consider making decisions on environment when purchasing items while 21.8 percent of the respondents in the same income group usually take into account environmental considerations regardless of the price of the items they want to purchase. Those respondents in the income group ranging from (Kenyan Shillings 110,001 - 160,000, USD 1300 -1880) do not usually take into account environmental issues when doing their purchases. 50 percent of the most paid respondents also do not usually take into account environmental considerations when making their purchase decisions

**Table 5: Cross tabulation between the income level and choosing environmentally-friendly products regardless of the price**

Level of income	Choosing environmentally-friendly products regardless of the price			Total
	Never	Sometimes	Always	
Less than Ksh 25,000	37.2%	37.2%	21.8%	100.0%
25,000 - 45,000	27.3%	63.6%	9.1%	100.0%
45,001 - 60,000	28.6%	57.1%	14.3%	100.0%
60,001 - 80,000	50.0%	16.7%	33.3%	100.0%
80,001 - 110,000	57.1%	28.6%	14.3%	100.0%
110,001 - 160,000	50.0%	50.0%		100.0%
160,000 - 300,000	37.5%	25.0%	37.5%	100.0%
300,001 and above	50.0%	33.3%	16.7%	100.0%

### 6.3 Hypothesis Testing

**Table 4: Regression Results**

Variable	Coefficient	Std Error	t-Ratio	P value
C	3.131315	0.113182	27.66615	0.0000
Gender	0.042149	0.110449	0.381616	0.7032
Income	-0.156121	0.367045	-0.425345	0.4253
Age	0.554495	0.128920	4.301088	0.0002
R-squared	0.510819			
Adjusted R-squared	0.417868			
Durbin-Watson stat	1.391710			
F-Statistic	7.647237			
Prob (F-statistic)	0.000014			

### **Testing Hypothesis 1**

H1: Customers who are older will exhibit more buying decisions based on environmental concerns. Studies on the role that socio-demographics play in environmental consciousness and the subsequent 'green actions', have used age, gender, marital status, level of education, and income to profile 'green consumers'. However even though the results have not been totally satisfactory for profiling and segmentation of 'green consumers' socio demographics has been seen as the best way to begin segmentation (Wedel and Kamakura, 2000). The exploration of how the age of the consumer is related to green behavior has in the past yielded contradictory results. Jackson, (1983), Zeider and Shechter, (1988) found that younger people were more inclined to exhibit 'green behaviour', while Van Liere and Dunlap, (1980) and Scott and Willits, (1994) found that older people exhibited higher levels of 'green behavior' when compared to younger people.

The study used simple multivariate regression analysis to test the three hypotheses. From the regression analysis the test indicated a positive correlation between the ages of the respondents and the environmental buying decisions. A P-value of 0.0002 implies that the coefficient of the variable 'age' is statistically significant in influencing the buying decisions. The older the person the more the individual considers the environmental issues when making purchase decisions.

The results imply that the older generations are more concerned about environmental issues than the younger people.

### **Testing Hypothesis 2**

H2: Women exhibit more buying decisions based on environmental concerns

The second hypothesis was also tested using the regression analysis. Gender was captured by use of a dummy variable in the regression analysis. (1:If female, 0: Otherwise). The regression analysis results indicated that the variable for gender had a P value of 0.7032 at 95 percent confidence interval. This leads us to reject the hypothesis. The results imply that gender does not influence the decisions that individuals make when buying different items. The decision lies on an individual whether rather than on gender male or female. The results from the cross tabulation shows that women seem to be more conscious when making the



buying decisions but a further analysis through regression analysis indicates otherwise. The regression results reveal that gender does not influence at all the decisions that individuals make when buying different items. The decision to be environmentally conscious lies on an individual but not whether one is a man or a female.

### **Testing Hypothesis 3**

H3: Customers from middle income group exhibit more buying decisions based on environmental concerns

The third hypothesis was also tested using the regression analysis. The results lead to the rejection of the hypothesis at 95 percent confidence level. This is because the coefficient of the variable income had a P value of 0.4253. The results mean that the level of income does not influence the buying decisions that people make.

Another key observation from the results reveals that the level of income and the buying decisions are negatively correlated. This means that as income of an individual increases the less that individual takes into account environmental concerns before making purchase decisions.

The coefficient of the constant term had a P-value of 0.000 at 95 percent confidence interval. This may mean that there are other factors which were not included in the model that influence buying decisions of individuals. These could include the level of awareness amongst individuals, the level of education among other factors.

## **7. MANAGERIAL IMPLICATIONS**

Consumers can play a crucial role in environmental issues since they chose the kind of products they buy in the market. Through this they determine the kind of products that are produced and how these products are introduced into the market by manufacturers. However individual consumers can only be influential if they are concerned or interested in a specific issue, in this case 'environment' and are willing to act accordingly when purchasing. Consumers could also block or slow down the introduction of environmentally innovative products in the market place, because they may not be willing to pay a higher price or to accept a less comfortable option (or have the perception that environmental innovative

products are more expensive and less comfortable) as it seems to be the case of the young Kenyan. The managerial implications that can be drawn from these findings are for marketers to use different strategies for different age groups since older people seem to be more concerned about the environment than younger people. Different income groups also behaved differently with people in the higher income bracket who seem to show less concern for environmental issues. The fact that gender does not play a role in influencing environmental buying decisions may help to inform marketing strategies at least in the Kenyan context.

## **8. CONCLUSION**

From literature the environmental buying decisions seem to be influenced by the attitudes and the level of awareness on environmental issues. This study sought to determine the environmental buying decisions made by tertiary level students and how some socio-demographic factors (age, gender and income) influenced those buying decisions. The methodology of the study was quantitative. The findings showed statistically significant differences between the environmental buying behaviour of older people and younger ones. However gender and income did not report a statistical significance. There was a special note regarding income and that was a negative correlation to the environmental buying behaviour, the higher the income level the less the environmental buying decisions seem to have been made. Marketers could take advantage of this information in the design of marketing strategies especially when dealing with environmental issues in the Kenyan market.

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