Effect of Green Product on Postgraduate Students' Purchasing Pattern for Bottled Water in Chukwuemeka Odumegwu Ojukwu University Igbariam

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Abstract: This study evaluated the influence of green products on purchasing pattern of post graduate students in Chukwuemeka Odumegwu Ojukwu Universit,y, Igbariam. The variable of interest was green product. The study was anchored on theory of reasoned action. The research design for this study was Survey Research Design. The postgraduate students of Chukwuemeka Odumegwu Ojukwu University were used as our respondents, which was 1756 in population. Borg & Gall formula was used to determine the sample size used for the study which is 338. A total of 338 copies of the questionnaire were administered and retrieved. Analysis of variance (ANOVA) AND simple percentage were used both for the analysis and hypotheses testing. This research revealed that green product has a positive and significant effect on purchasing pattern of postgraduate students of Chkwuemeka Odumegwu Ojukwu University. The researcher recommended that Bottled water companies will continue to modify and maintain green product in all stages of production for the safety and healthy life of their customers. Bottled water companies should also maintain good healthy environment all the time.

Key words: Green products, Purchasing pattern, Eco-friendly, Recycled materials, Environmental hazards, ANOVA.

INTRODUCTION

Products which are eco-friendly, reusable and biodegradable in life are referred to as green products. It is produced with usual ingredients which contain recycled contents, and non toxic chemicals. Green products are formerly grown and manufactured under the approved chemicals. They do not harm or pollute the environment. That is why they are referred to as ''environmental friendly'' (Mutharasu, 2014). According to Lee (2009), green products are those products whose functions or ideas deal with the process of material retrieval, production, sales, utilization and waste treatment available for recycling, reduced pollution and energy saving.

In the opinion of Chan (2012), green product growth addresses ecological issues through product design and innovation. Green products have also been maintained as products that claim to offer environmental benefits (TerraChoice, 2010). Examples of these products are building materials, furnishings, consumer products, electronics (washing machines, air conditioner, fridge, etc.), health care products, organic and green foods (Wikipedia, 2020). Durif (2010) also argued that green products can be referred to as environmental products or ecological products. Polonsky (2011) views green products as products with an alternative design such that less physical resources are required during its life cycle.

That is, products are manufactured through green technology and cause no environmental hazards. Promotion of green technology and green products is necessary for conservation of natural resources and sustainable development (Srivastava, 2014). Diglel and Yazdanifard (2014) identified a green product as an item that is produced in a manner that is environmentally conscious, has minimum negative effects on the environment, product or product packaging made from recycled materials, preserves natural resources and is manufactured locally. Campher (2013) indicates that market research illustrates that consumers want greener products. Ottoman and Mallen (2014) believe that individuals are seeking out green products, because they perceive them to be healthy and organic, of higher quality, and help preserve the environment. Manget, Roche and Münnich (2009), in support, found that consumers greatly value the benefits of green products such as superior freshness and taste, the promise of safety and health, and savings on energy costs.

Companies innovate their products according to the needs and preferences of their consumers and usually consumers tend to be concerned about the environment, therefore companies prefer to produce products that are less harmful towards the environment. Environment friendly products tend to save money, and other natural resources. As the products can be manufactured from reused materials or products that have been used before. The marketer's role in product management includes providing product designers with market-driven trends and customer requests for green product attributes such as energy saving, organic, green chemicals, local sourcing, etc. For example, Nike is the first among the shoe companies to market itself as green. It is marketing its Air Jordan shoes as environment friendly, as it has significantly reduced the usage of harmful glue adhesives. It has designed this variety of shoes to emphasize that it has reduced wastage and used environment-friendly materials (Dua, 2013).

Gurau and Ranchhod (2005) defined a green product as "a product that was manufactured using toxic-free ingredients and environmentally-friendly procedures, and which is certified as such by a recognized organization. Consumer behavior is the study of the processes involved when individual or groups select, purchase, use, or dispose of the product, service, ideas or experiences to satisfy needs and desires. Kotler (2004) opined that demands and attitudes of consumers towards green products cannot be the same globally because of differences in culture and market factors.

Environmental concern is generally measured to be a direct antecedent to green consumption intention, which refers to the amount of individual care for ecology and the environment. However, the results of prior studies are somewhat inconsistent about the extent of the relationship between green product and purchasing pattern, just as Prashant and Ghodeswar (2015) examined the factors affecting consumers' green product purchase decisions. Findings of

this study indicated that Indian consumers have level of environmentally consciousness which is exhibited in their green product purchase decisions. Putri, Amrin and Endang (2019) analyzed the influence of green product, green advertising, and green brand on decision to buy, either directly, or by trust. Green product, green advertising, green brand and trust simultaneously had the influence on decision to buy product through consumers' trust. Beibei, Guanghua, Shengxiang, and Jiaqi (2020) explained that the influential factors for green consumption have greatly advanced in recent years. Environmental concern positively affects green consumption intention and plays a partial mediation role in the relationship between environmental responsibility and green consumption intention. Karatu, and Mat (2015) examined Predictors of Green Purchase Intention in Nigeria: green purchase can be increased when there is abundance of green products. The differences in findings may be due to methodology issues, the number of respondents, the included variables and the area of the study, which has led to inconsistency in result, hence the gap. The study will complement the existing studies by conducting the research in Anambra state, Nigeria to determine the true situation of the influence of green product on postgraduate students' purchasing pattern for bottled water in Chukwuemeka Odumegwu Ojukwu university, Igbariam.

REVIEW OF LITERATURE

Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB)
Theory of planned behavior model developed by Icek Ajzen (1985) was an extension of Theory of Reasoned Action which accounted for conditions where individuals do not have complete control over their behavior, which was broken down further into one's intended behavior and one's perceived behavior. Decomposed Theory of Planned Behavior model includes subjective norms and perceived behavioral control. According to Puschel, Mazzon, and Hernandez (2010), the decomposed Theory of Planned Behavior, as at 2010 was the most recent of innovation model developed, however, these have been primarily used in research. This study will use a modified version of the decomposed Theory of Planned Behavior model in order to fully meet the relevant and necessary objectives. The justification for using a modified decomposed Theory of Planned Behavior model is based on establishing only the intent of the Bottled water consumers to adopt green products and not to test the adoption thereof. The decomposed Theory of Planned Behavior model includes three main factors that influence human behavior and adoption: Attitude, Perceived Behavioral Control and Subjective Norms. Attitude is viewed as one's perception, positive or negative, towards the adoption and usefulness of a specific innovation (Tan & Teo, 2000). Perceived Behavioral Control refers to the beliefs about having the available resources and opportunities to adopt a new innovation (Tan & Teo, 2000). Subjective Norms refers to the social influences that surround an individual's intention to use a product, service or new innovation (Tan & Teo, 2000). This study is grounded on the theory of planned behavior.

Empirical Review

Prashant and Ghodeswar (2015) in their study, examined the factors affecting consumers' green product purchase decisions. The research employed a survey-based method to test a theoretically grounded set of hypotheses. Using a 38-item questionnaire and snowball sampling method, the data were collected from 403 working Indian respondents in Mumbai. The data were analyzed

using exploratory and confirmatory factor analyses. Structural equation modelling was used to test the proposed hypotheses. The results witnessed that the respondents possess willingness to support environmental protection, realization of environmental responsibilities, and inclination towards searching green product-related information and learning about green products. Findings of this study indicated that Indian consumers have level of environmentally consciousness which is exhibited in their green product purchase decisions. They are concerned with environmental protection issues, realize their responsibilities towards environmental protection, believe in existence of environmental problems and their solutions at individual levels, extensively search for product-related environmental information and make environmentally friendly purchase decisions.

Putri, Amrin and Endang (2019) analyzed the influence of green product, green advertising, and green brand on decision to buy, either directly or by trust. Primary data were obtained from 75 respondents and analyzed by using path analysis with SPSS software program. The result of the research showed that partially, green product, green advertising, and green brand had positive and significant influence on decision to buy Tupperware product through consumers' trust. Green product, green brand and trust had positive and significant influence on decision to buy Tupperware products through consumers' trust. Green product, green advertising and green brand, and trust simultaneously had the influence on decision to buy products through consumers' trust.

Beibei, Guanghua, Shengxiang, and Jiaqi (2020) examined that the influential factors for green consumption has greatly advanced in recent years. This study investigated the impact of environmental responsibility on green consumption via the mediation of environmental concern and the moderation of price sensitivity. The questionnaire survey method was used to collect data from 680 Chinese consumers via an online questionnaire. The empirical results revealed that environmental responsibility can promote environmental concern and enhance green consumption. Specifically, environmental responsibility has a positive impact on environmental concern and also has different positive effects on green consumption intention. Environmental concern positively affects green consumption intention and plays a partial mediation role in the relationship between environmental responsibility and green consumption intention. Price sensitivity plays a negative moderation role in the relationship among environmental responsibility, environmental concern and green consumption intention. The theoretical and managerial implications of the findings were also discussed.

Chukwu and Enudu (2017) investigated the impact of product packaging on consumer buying behavior. Poor packaging can dissuade consumers from buying a product. A survey was used for this purpose. The data collected from the questionnaire instrument were analyzed using percentages and Multiple Regression. The research findings showed that a significant and positive relationship lies between the independent variable, attractive packaging, value and quality of packaging, impulse purchasing and the dependent variable, consumer buying behavior. A negative relationship exists between the independent variable shabby packaging and the dependent variable consumer purchasing behavior. We recommend that in order to be sustainable in the present day competitive and computerized market, firms should be able to balance both packaging and quality to meet the level of cost they need as well as build customers confidence, loyalty and continuous patronage.

Karatu and Mat (2015) examined ''Predictors of Green Purchase Intention in Nigeria: The Mediating Role of Environmental Consciousness''. This study used quantitative method by distributing 150 questionnaires to lecturers in Nigerian universities. 102 datasets were returned representing 68 percent response rate. The screened data were analyzed using regression. The findings indicated that green availability is directly and significantly related to green purchase intention (=.355, p<.001), while green price sensitivity is directly and significantly related to environmental consciousness (=.377, p<.000). The relationship between green price sensitivity and green purchase intention is fully mediated by environmental consciousness. In conclusion, green purchase can be increased when there is abundance of green products. Nigerians also believe that high priced green products will increase their awareness towards environmental consciousness. Environmental consciousness plays a very significant mediating role in influencing the relationship between green price and green purchase intention.

Okunuga (2019) examined the effect of green products on consumer purchase decision of fast moving consumer goods in Lagos state. A descriptive survey design was employed with a population of 9.1million. A sample size 307 was derived using Cochran formula and purposive sampling technique was adopted. The data were inferential statistics (Pearson Product Moment Correlation and Hierarchical Regression). Findings revealed that a significant positive relationship exists between Eco labelling and Consumer Purchase Decision as revealed at 0.810 and also that a significant positive relationship exist between Eco-branding and Consumer Purchase Decision as revealed by the positive R value of 0.911. The study concludes that marketers of FMCGs must be conscious of the consumers 'perception of the product. It is therefore recommended that government should formulate and ensure the implementation of regulatory policies that promote the balancing of ecology and economic activities by partnering with the industry.

Summary of Literature

Green product will give a business a competitive advantage by enhancing its public image and also as a social corporate responsibility. Businesses that are able to implement green products have an edge in attracting green consumers and also reduce running cost in the long run. Green products are however met with some challenges. This includes high initial cost that some businesses may not be able to meet at first. Also, green marketing has just been practiced for approximately 3 decades; hence not every manager is aware of how to integrate it in daily running of the organization. Nevertheless, the importance of green products outweighs its challenges and it is deemed necessary for organizations to be at the fore front to adopt it. Moreover, by the bottled water managers whose business thrives on natural resources and consumed by every breathing being. From the literature review, there has not been an assessment of adoption of green product practices in bottled water industries in Nigeria or any developing country for comparison purposes or review.

METHODOLOGY

Area of Study
The area of this study is Anambra state. The capital and seat of Anambra is Awka, while the commercial hub of the State is Onitsha and industrial city of the state is Nnewi. Anambra State

consists of 21 local government areas, with three senatorial districts such as Anambra North, Anambra South and Anambra central.

Population of the Study

Population is the totality of any group, persons or object which is defined by unique attributes. In order words, population is any groups that have been focused upon the researcher. To have an extensive courage of this study, the population of this research is all the postgraduate students of Chukwuemeka Odumegu Ojukwu University, Igbariam which is (1756) one thousand seven hundred and fifty-six.

Determination of Sample Size

The sample size used for this study was determined using the Borg and Gall formula of (1973). Statistically, the Borg and Gall (1973) formula for sample size is given by;

n= $(Zx)^2$(e) [N]

$(Zx)^2$= Confidence level at 0.05 $(1.960)^2$

e   = Error of margin (0.05)

N   = Population of Interest = 1756

X   = Significance Level

Substituting therefore:

n = $(1.960)^2$ (0.05) [1756]

n = $(1.960)^2$ (0.05) [1756]

n = (3.8461) (87.8)

= 337.68 $\Longrightarrow$ 338

n = 338

Method of Data Analysis

Statistics such as frequency count and percentages were put to use in the analysis of research questions while research hypotheses were tested using correlation analysis and simple regression analysis. The research hypotheses were tested at 0.05 level of significance. Analysis was carried out with the aid of Statistical Package for Social Sciences (SPSS).

Sources of Data

The primary source of data was used in this study because of the nature of variables that was employed. Questionnaire was used to collect data from the respondents.

Instrument for data Collection

Questionnaire was used to collect the relevant data for the study. The postgraduate students of the selected South East Universities were used for pre-testing the questionnaires. The type of questions that was used in the questionnaires was a closed-ended one.

DATA PRESENTATION AND ANALYSIS

A total of 338 copies of questionnaire were administered to the respondents which was postgraduate students of Chukwuemeka Odumegwu Ojukwu University, Igbariam. The researcher successfully retrieved the whole questionnaires through the help of five research assistants. This was made possible because the questionnaires were filled on-the-spot.

Table 4.1: Response on Whether the Product is less polluted in the environment.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	17	4.8	4.9	4.9
	Disagree	11	3.1	3.1	8.0
	Undecided	23	6.5	6.6	14.6
	Agree	151	46.0	46.6	61.1
	Strongly Agree	136	38.4	38.9	100.0
	Total	338	98.9	100.0	

Source: Field Survey, 2020/SPSS

The table above indicates that seventeen (17) respondents which represents 4.9% disagree strongly that Product is less polluted to the environment, while 3.1% of the respondents which represents eleven (11) also agreed to that. Furthermore, 6.6% which represents twenty-three are undecided, while 46.6% of the respondents which represents one hundred and fifty-one (151) agreed. Finally, one hundred and thirty-six (136) respondents which are 38.9% of the respondents strongly disagreed.

Table 4.2: Response on whether Product package are recyclable, reusable and easily decomposed.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	2.0	2.0	2.0
	Disagree	34	9.6	9.7	11.7
	Undecided	21	5.9	6.0	17.7
	Agree	199	59.6	60.3	78.0
	Strongly Agree	77	21.8	22.0	100.0
		338	98.9	100.0	

Source: Field Survey, 2020/SPSS

The table above shows that seven (7) respondents which represents 2.0% strongly disagrees that Product package that are recyclable, reusable and easily decomposed are appreciated by the final consumer, while 9.7% of the respondents which represents thirty-four (34) persons disagreed. Twenty-one (21) persons, who represent 6.0%, are undecided, while one hundred and ninety-nine (199) persons who represent 60.3% agreed. Lastly, seventy-seven persons who represent 22.0% strongly agreed.

Table 4.3: Response on whether End-users are ready to pay more for environmental friendly products

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	85	24.0	24.3	24.3
	Agree	142	43.5	44.0	68.3
	Undecided	34	9.6	9.7	78.0
	Disagree	65	18.4	18.6	96.6
	Strongly disagree	12	3.4	3.4	100.0
	Total	338	98.9	100.0	

Source: Field Survey, 2020/SPSS

The tables above showed that eighty-five (85) respondents which represent 24.3% strongly agreed that End-users are ready to pay more for environmental friendly products, 44.0% of the respondents which represents one hundred and forty-two (142) respondents agreed. Thirty-four (34) persons, who represent 9.7%, maintain undecided, while sixty-five (65) respondents which represents 18.6% disagreed. Lastly twelve persons (12) who represent 3.4% strongly disagreed to the notion.

Table 4.4: Respondents' views on products that do not harm or pollute the environment are environmental friendly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	102	28.8	29.1	29.1
	Agree	148	45.2	45.7	74.9
	Undecided	36	10.2	10.3	85.1
	Disagree	31	8.8	8.9	94.0
	Strongly Disagree	21	5.9	6.0	100.0
	Total	338	98.9	100.0	

Source: Field Survey, 2020/SPSS

The table above shows that one hundred and two (102) respondents which represent 29.1% strongly agree that products that do not harm or pollute the environment are environmental friendly, 45.7% of the respondents which represent one hundred and forty-eight (148) agreed.

Thirty-six (36) persons, who represent 10.3% are undecided, while thirty-one which represents 8.9% disagreed, and twenty-one which represents 6.0% strongly disagreed.

Table 4.5: Respondents' view on whether the products that are manufactured through green technology and caused no environmental hazards promote green environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	9	2.5	2.6	2.6
	Disagree	28	7.9	8.0	10.6
	Undecided	23	6.5	6.6	17.1
	Agree	227	67.5	68.3	85.4
	Strongly Agree	51	14.4	14.6	100.0
	Total	338	98.9	100.0	

Source: Field Survey, 2020/SPSS

The table above shows that nine (9) respondents which represent 2.6% strongly disagree the products that are manufactured through green technology and cause no environmental hazards promote green environment. 8.0% of the respondents which represent twenty-eight (28) disagree. Twenty-three (23) persons, who represent 68.3%, are undecided, while two hundred and twenty-seven (227) which represents 68.3% agreed, while fifty-one which represents 14.6% strongly agreed to the above assertion

Table 4.6: Respondents' view on whether Products with natural ingredients are environmental friendly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	26	7.3	7.4	7.4
	Disagree	28	7.9	8.0	15.4
	Undecided	14	4.0	4.0	19.4
	Agree	128	39.5	40.0	59.4
	Strongly agree	142	40.1	40.6	100.0
	Total	338	98.9	100.0	

Source: Field Survey, 2020/SPSS

The table above shows that twenty-six (26) respondents which represents 7.4% strongly disagrees that Products with natural ingredients are environmental friendly, 8.0% of the respondents which represents twenty-eight (28) disagreed. Undecided (14) persons, who represent 4.0%, responded undecided, One- hundred and twenty-eight (140) which represents 40 % agreed. While one hundred and forty-two (142) respondents which represents 40.6% strongly disagreed to the above questions.

Test of Hypotheses

Ho: Green product of bottled water does not have significant effect on purchasing pattern of post graduate students in Chukwuemeka Odumewgu Ojukwu University.
ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	293.995	3	73.489	241.453	.001
Within Groups	31.428	335	.163		
Total	325.423	338			

Source: SPSS Version 20, 2020

The test table revealed that small significance value (F. sig<.05) indicates group differences. Since the F- value of 241.453 which has a significance of .001 is less than .05 (i.e .001<.05), we reject the null hypothesis and accept alternative hypothesis. Therefore, Green product of bottled water have significant effect on purchasing pattern of post graduate students in Chukwuemeka Odumewgu Ojukwu University.

Conclusion and Recommendations

The outcome of this study based on the analysis using Simple percentage and ANOVA regressions has shown that green products has positive and significant relationship with purchasing pattern of postgraduate students of Chukwuemeka Odumegwu Ojukwu University, Igbariam. It also proved that environmental consciousness fully meditated the relationship between green product and green purchase intention. Thus, green availability will strongly enhance green purchasing pattern. Kasali (2005) maintained green product as an illustration of goods or products produced by producers that are related to security and do not have an impact on human health and do not have the potential to damage the environment. Green products are created to meet consumer needs for products that can guarantee safety and health. This research is in line with the research conducted by Gil and Depar (2018) which proves that green products have a positive and significant effect on trust. Green product which is appointed about environmentally friendly product quality, is trusted by consumers, especially by consumers who maintain health and care for the environment. Bottled water companies will continue to maintain green product in all stages of production for the safety and healthy life of their customers. The bottled water company should also maintain good healthy environment all the time.

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