

Environmental Attitude and Behavior of Consumers in the Usage of Compact Fluorescent Lamps (CFLs) in Benin City

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Abstract

This paper explores environmental attitude (EA) and behavior of consumers in the purchase and usage of Compact Fluorescent Lamps (CFLs) in Benin City, Edo State, Nigeria. Specifically, the study investigates the psychological influence of EA and demographic impact of consumer's age, education, sex and income on Green Purchasing Behavior (GPB) towards CFLs. Quantitative and correlation research designs were employed. A total of 310 questionnaires were administered to household representatives. T-test, ANOVA, regression analysis and Chi-square were applied in analyzing data. Though consumers' EA and GPB toward CFLs were positive, they were not significantly explained by the studied demographics. But, consumer's EA was found to be positively related GPB. By capitalizing on the energy saving benefit of CFLs, enlightenment campaign could be embarked upon by the relevant agencies and authorities, to inculcate environmental sustainability attitudes in consumers and also to educate them on safe disposal of used CFLs.

Keywords: CFL, Energy conservation; Environmental attitude, Green purchasing behavior, Sustainable consumption, Nigeria

1. Introduction

Environmental degradation and its impact on human life have emerged as one of the burning issues drawing attention of academicians, industrialist and research scholars all across the world. Consequently, energy consumption and conservations have also emerged as a major challenge and opportunity. Energy has become the key driver of sustainable development in many economies in the world. Energy efficiency strategies have the potential to power and promote economic development, create jobs, and save national and personal incomes (Otegbulu, 2011), The efficient use of energy can help to reduce family energy bill as well as minimize the need to build more power stations, thus, leading to redistribution of income to other sectors of the economy (Community Research and Development and Centre (CREDC), 2009; Otegbulu, 2011), from inadequate kilowatts produced. The UNDP report of 2012 estimated that only about 50% of over 160million people in Nigeria have access to electricity. It also added that the 5,000MW power currently generated in Nigeria is inadequate and unstable forcing a large portion of business enterprises and households to depend heavily on diesel and petrol generators as primary or back up sources of energy. It is also acknowledged that generators as an alternative source of energy constitutes a significant factor in the organizations' cost of operations and also a major source of Green House Gas (GHG) emissions. Of the over 10,000MW demand for energy in Nigeria, residential buildings consume the highest megawatt of electricity than the industrial and commercial buildings (CBN, 2009). In most Nigerian homes, Otegbulu (2012) observed that energy efficiency is taken as a critical factor in the selection of household appliances and electrical fittings.

He further noticed that in most homes, filament bulbs of wattages ranging from 40watts to 120watts per hour are still being used. Otegbulu's (2012) analysis showed that a typical Incandescent Bulb (IB) converts 10% of input electricity energy into light energy while the rest goes into heat.

It has been estimated that the alternate Compact Fluorescent Lamps (CFLs) use less energy or electricity than incandescent bulbs. CFLs are estimated to last ten times longer, cost little upfront and provide a quick return on investment (Sule, Ajao, Ajimotokan & Garba, 2011) notwithstanding the huge benefit inherent in energy saving devices such as CFLs, the study of Otegbulu (2012) found that households in Lagos metropolis in Nigeria express negative attitude towards energy efficiency practices, both behaviorally and technologically. Since environmental sustainability is partially predicated on sustainable consumption, knowledge of consumers' profile and determinants of their Green Purchase Behavior (GPB) is necessary for the producers, marketers, governments and academicians. Mitigating the effects of human consumption on the environment would be best addressed if the motive, attitudes, behavior and actions of consumers are well understood (Roberts and Bacon, 1997). In the same vein, Rundle –Thiele, (2008) opined that a deeper understanding of the characteristics of green consumers by business owners would be helpful in the design of more efficient and effective sustainable marketing programmer. As indicated by Diamantopoulos, Schlegelmilch, Sinkovics and Bohlen (2003), there is a dearth of knowledge on consumer eco-friendly attitude-behavior link. For instance in Nigeria, the study of Olusola, Abayomi and Obinna (2012) examined the factors influencing the usage of CFLs in existing residential buildings in Lagos Nigeria without recourse to Environmental Attitude (EA) and its implication for users' Environmental/Green Purchase Behavior (GPB). Though the study of Otegbulu (2012) explored the relationship between consumer awareness and the use of energy efficiency devices, no attempt was made to statistically investigate the relationship between consumers' environmental attitudes and environmental purchasing behavior towards CFLs. Against this background, this study aims at adding value to the body of knowledge by examining the following. First, to determine consumer's level of awareness and usage of CFLs as well as investigate consumer's general attitudes towards environmental issues and specifically to determine their Environmental Attitude (EA) towards CFLs. Consumers' Green Purchasing Behavior towards CFLs was also be studied. The relationship between environmental attitude and GPB of CFLs will also be investigated among the study groups. Further attempt was made to examine demographic influences on consumers' environmental attitudes and GPB toward CFLs.

2. Factors Limiting the Adoption of CFLs among Household Consumers

A number of factors have been adduced for the slow adoption of CFLs among consumers. One of the foremost barriers of CFL adoption is finance. In a study, Elliot and Gueggemos (2010) observed that companies in developed countries are forced by escalating cost of operation to seek improved measures to reduce energy consumption. Kumar, Jain and Bansal (2003) observe that the initial outlay cost of retrofitting with CFLs is a source of discouragement to CFL usage by households. In the study of Olusola, *et al.* (2012), initial cost of CFLs was ranked third of the seven factors studied. Secondly, the issue of information and awareness is another critical factor for consideration in the purchase and usage of CFLs (Sathaye & Murtshaw, 2004). Again, awareness factor was ranked as the fifth critical factor in the study of Olusola *et al.* (2012). Yik and Lee (2002) noted that rather than technological challenges, that the problem of energy inefficiency among CFL users in existing building has gone beyond that of technological challenges to include that of knowledge, motivation and financial challenges. In Nigeria, Otegbulu (2012) notes that the problem of lack of motivation among users is traceable to the inefficient billing and collection system combined with the corrupt practices on the part of energy utility workers and consumers. Otegbulu (2012) further remarked that in areas where meter cards that is, the pre-paid billing system is deployed; household users are more conscious of their energy consumption level and are also more likely to adopt energy efficiency measures.

2.1 Attitudes and Behavior toward Environmental Issues and Products

Environmental attitudes refer to the individuals' value judgment and it taps the individuals' cognitive assessment of the value of environmental protection (Lee 2005), GPB as defined by Akehurst, Afonso and Goncalves (2012) reflects the effective purchase of green products undertaken by consumers that act according to their convictions. For Odia and Agbonifoh (2014), green purchasing behavior is the act of buying and using of goods and services that are environmentally friendly to satisfy wants.

The studies of Kaiser, Wolfing and Fuhrer (1999) and Kotchen and Reiling (2001) provided substantial evidence on the relationship between environmental attitudes and environmental behavior. Evidence from Odia and

Agbonifoh's (2015) study shows that consumers in Benin City possess fairly positive attitude to environmental issues and products in general. Nevertheless, in the same study, environmental attitude did not significantly explain consumers' GPB.

In a study conducted among CFL users in Lagos, Otegbulu (2012) observes that though there is growing and increased consumer awareness of energy efficient methods, that increased awareness rate among consumers did not proportionately improve their energy efficiency behaviors. There appears to be much contention on the issue of 'value-action' gap as it relates to consumer attitude-behavior study. In a study, Young *et al.* (2010) noted an 'attitude-behavior' gap in the studied group. Findings from the study of Young *et al.* (2010) showed that 30% of the consumers who expressed high concern about environmental issues did not translate their environmental concerns into effective purchase habits. In this study, it is assumed that there is close positive link between Green Purchasing Intention (GPI) and Environment Attitude (EA), Consumers with strong positive attitudes toward environmental products would similarly have strong intention to purchase green products such as CFLs. GPI is the readiness expressed by the consumers to act for the protection of the environment (Chan, 1999).

The expected link between EA and GPB proposed in this study stem from the Theory of Reasoned Action (TRA) propounded by Fishbein and Ajzen (1975), TRA has been used to explain human behavior as it relates to the link between attitude and behavioral intentions. Mostafa (2007) and Chen (2009) applied the TRA model to explain purchase intention behavior of consumers while Lee (2008), Sinnapan and Abd Rahman (2011) and Odia and Agbonifoh (2015) explored its uses in investigating the influences of environmental attitude on green purchase behavior. The attitude-behavior gap is referred to as inconsistency between attitudes towards sustainable consumption and actual. In some surveys, 30% to 50% of consumers indicate their intention to buy sustainable products, the market share of these goods is often less than 5% of the total sales (Carrington *et al.*, 2010; Young *et al.*, 2010). An international study by Greenindex (2012) also confirmed the phenomenon of attitude-behavior gap.

2.2 Demographic Influences on Environmental attitude and Green Purchasing Behavior

Evidence in the extant literature on the demographic influences on environmental attitude and green purchasing behavior indicate somewhat contradictory reports. Soonthonsmai (2007) noted that consumer's green purchasing intention has positive correlation with different age and income groups. The study done by Ottman, Stafford and Hartman (2006) found that younger generations accept new or innovative ideas better than older people. Results from several other studies have revealed that male and female have significant dissimilarity in their environmental attitude, in most cases the females were found to express more positive attitude than their male counterparts (Lee, 2009; Tikka, Kuitunen and Tynys, 2000; Zelezny, Chua and Aldrich, 2000). However, this finding is a contradiction to the study done by Chen and Chai (2010) who found no significant difference between males and females in their environmental attitude or green purchasing behavior towards ecological issues. In conclusion, Chen and Chai (2010) assert that demographic variables are lesser predictors of green purchasing behavior than psychographic variables. Nonetheless, it should be noted that Chen and Chai's (2010) study focused only on undergraduate students whose personal characteristics might be different from the older working class consumers. In another study, Laroche, Begeron and Barbaro-Forleo (2001) found that consumers with higher education and income were more environmentally sensitive. Nevertheless, the opposite was revealed in Roberts' (1996) earlier study. In the study of Van Liere and Dunlap (1981), no link was established between the following socio-demographic variables (gender, age, and income) and pro-environmental actions.

3. Methods

This study adopts quantitative, descriptive and correlational research designs. The population of this study includes all households in Oredo and Egor Local Government Areas (LGAs) in Benin City, Edo State, Nigeria. The chosen LGAs were randomly selected from the four LGAs in Benin City using lottery method. In absence of accurate sampling frame on the number of households in the two LGAs, 310 questionnaires (155 questionnaires per LGA) were administered by a mix of simple random, systematic and convenience sampling methods to household representatives in the selected LGAs. Benin City was selected for the present study because similar studies such as Otegbulu (2012) and Olusola *et al.* (2012) have been done in cosmopolitan city of Lagos.

Though smaller in size, Benin City as an ancient city is also densely populated of which result on awareness and usage level of CFLs will be helpful to government in policy making regarding energy usage and conservation. On the other hand, market potential for manufacturers could also be estimated with some certainty. The research

instrument was designed in two parts. Part A dwells on demographic profile of respondents: age, education, income and sex. Part B, dealt with the awareness and usage rate of CFLs, EA towards and GPB of consumers in the selection and usage of CFLs.

Awareness and usage were measured using self-constructed items. Consumers' EA was measured using two items selected from Lee's (2008) instrument of a 5 point Likert scale format, anchored by strongly agree (5) and strongly disagree(1) (with appropriate items reverse scored), Four items were adapted from Lee's (2008) to measure environmental attitude towards CFLs usage. Two of these items were deleted to enhance the reliability coefficient of EA to 0.700. For consumer attitudes toward environmental issues in general, two items were also extracted from the study of Lee (2008) and reliability coefficient is 0.801. To measure consumers' GPB towards CFLs, four items were also extracted from the study of Lee (2008), The four items focused on consumer's willingness to pay premium for CFLs; consistent behavior in the selection of CFLs over incandescent lamps, safety of component parts used and preference for CFLs. All GPB items were measured using the same scale as with those of environmental attitude. Cronbach alpha for GPB is 0.701. The four eco-demographic independent variables – age, sex, income and education were measured on interval scale except sex that was measured on a nominal scale with response option of 'female' or 'male'. In order to test for relationship between the dependent variable (GPB) and eco-demographic variables (age, education, and income), ANOVA was used; for sex; the independent sample test was performed. With the help of SPSS, mean, independent sample T-test, and ANOVA were applied in analyzing the collected data at 0.05 level of significance.

3.1 Demographic Profile of CFL Users

Of the 310 questionnaires administered, a total of 291 were returned representing 93 %. Out of the 291 returned, 276 (95%) which is approximately 90% of the administered were found usable. Some of the questionnaires were completed on the spot while others were left with the respondents. Some of the questionnaire left could not be retrieved on a second visit and additionally, a few more respondents were reluctant in collecting another questionnaire as they did not want to break another promise. Nevertheless, a response rate of 89% could be regarded a success. The demographic profile in this study showed that respondents with age below 25years were more in number 97(35.1%) than other age groups. Only 4 (1.4%) of the respondents were 41years and above. Respondents with B. Sc and HND were more in number 91 (33.1%) than any other group while primary school leaving certificate holders were the least with frequency of 19 (6.9%), Looking at the economic background of the respondents, 88 (35.8%) earn less than N30,000 per month, only 23 (9.3%) of the respondents earn over N100,000. The perceived disconnect between high educational profile and low income distribution among sample members may not be unconnected to the general economic downturn in Nigeria. 52.2% of the respondents are male while the remaining 47.8% are female. (See Table 1 for details on respondents' profile),

4. Findings

4.1 Awareness of CFLs among Household Users

The result of data analysis show that awareness rate of CFLs among households in Benin is very high, to the rate of 95.3% of the entire respondents surveyed (See Table 2). While only a marginal percentage of 4.7% said they were not aware of CFLs. The result of the Chi square and the t-test analysis showed that awareness was not related to usage rate. In other words, the rate of CFL awareness did not proportionately translate into purchase and usage of CFLs. Following the result of Pearson Chi square of 1.028, $p = 3.11$ and t-test, $t = -1.012$, $p = .312$, it can be concluded that there is significant difference between the males and the females in their knowledge of CFLs. Figure 1 shows the relationship between respondents' sex and awareness of CFLs.

4.2 Environmental Attitudes and GPB toward CFLs

In Table 5, respondents' mean attitudes and green purchase behaviors toward CFLs were computed on a five point scale ranging from 1 to 5. The higher the mean score of the factors; the more positive the attitudes and GPB toward CFLs are. The overall green purchasing behavior of consumers towards CFLs is positive and favorable. A mean index of 3.85 and a corresponding standard deviation of .646 are clear indications that consumers in the present study strongly think it is essential to promote and increase the sales of CFLs in Nigeria.

The mean value of 3.5 shows that buyers of CFLs are moderately concerned with the health hazard of mercury content in CFLs. In other words, buyers make efforts to read labels on health safety of electrical bulbs before making their selection. Judging from the mean response of 3.62, it was concluded that a good number of the

buyers prefer CFLs to the incandescent lamps. Not only in preference but are gradually becoming loyal in their desire to continue the usage of CFLs. Consumers' attitude toward environmental issues and protection though positive with a mean of 3.65, is less than the mean response of 4.59 for environmental attitudes toward CFLs. The reason for the observed difference may be ascribed to the increased awareness, usage and energy saving benefits of CFLs among consumers.

4.3 Consumers' Demographic Influences on EA and Behavior toward CFLs

In this section, results relating to demographic influences of sex, age, income and education on environmental attitude are presented. For economic influence on users' attitudes towards CFLs, the F-value of .377 and p-value of .825 show that income is insignificant in explaining respondents' environmental attitudes to CFLs. Respondents' of different age groups shared fairly similarly favourable attitudes to CFLs. Following the results obtained from the analysis of variance, $F = 889$ and $P = .471$, this study concludes that education is relevant in explaining the variation in users' environmental attitudes toward CFLs. The mean responses from the various groups show that consumers of different educational backgrounds share positive attitudes towards CFLs. In conclusion, there is no significant relationship between education and environmental attitude to energy CFLs. At a low F-value of .748 and a corresponding p-value of .560, it is obvious that respondents' age is not significant in explaining users' environmental attitude towards CFLs. In the light of ANOVA test result, it can be concluded that consumers of different age groups share similar attitudes that is positive and favourable toward CFLs. (See Table 7 for details), Table 8 shows the t-test result for equality of means on the basis of respondents' sex. The t-value (.335) and p-value (.738) are indicative that sex is not significant in explaining respondents' attitudes to CFLs. The analysis on the influence of sex on respondents' attitudes to CFLs revealed that both the male and the female respondents were positively disposed to CFL. By implication, the males were not significantly different from the females, in their attitudes to energy saving bulbs (See Table 8 for details), Evidence from data analysis shows that sex, age, education and income did not significantly explain consumers' green purchase Behavior (GPB) towards CFLs. It is evident from ANOVA F-value of .422 and p-value of .792 that age did not influence consumers' GPB towards CFLs. Similarly, for F of .409 and P of .802, education was insignificant in predicting GPB towards CFLs. Finally, F (1.194) and P (.314) succinctly show that income is not a significant determinant of GPB towards CFLs. (See Table 9 for details).

4.4 Discussion of Findings

The observable relationship between environmental attitude (EA) and green purchasing behavior (GPB) towards CFLs tend to be in line with the assertion of Straughan and Roberts (1999) that psychographic variables explain better the nature and behavior of ecological consumers. Our finding in this regard, appears to have a close link with Chan and Yam's (1995) findings that Green Purchasing Intention (GPI) is related to GPB. Following Ajzen's (1991) theory of reasoned action, it is logical to draw a direct relationship between GPI and EA, implying that positive environmental attitudes would naturally generate strong intention to purchase. Since users' environmental attitude was found to be a significant predictor of GPB, it implies that consumers' positive environmental attitudes will automatically translate into positive selection of CFLs over the incandescent bulbs. Our results in the areas of demographic influences are akin to Akehurst, Afonso and Goncalves' (2012) and Straughan and Robert's (1999) findings which showed no significant relationship between respondents' age, income, education and sex and green purchasing behavior. The inability of the demographic variables to explain GPB could be linked to the perceived relative advantage of CFLs to the different categories of consumers. For instance, both the female and male in households would derive mutual benefit from the savings that would accrue from using CFLs. This assumption is also true for consumers of different economic and educational backgrounds as well as age groups.

5. Conclusion

This study examined the level of adoption and green purchasing behavior toward CFLs among household users. Additionally, this study analyzes the relationship between EA and GPB of consumers toward CFLs as well as demographic influences on EA and GPB. The findings from this study indicate that the household consumers surveyed possess very high level of awareness and usage of CFLs.

Evidence from data analysis revealed that improvement in awareness of CFLs would proportionately lead to enhanced usage for both the male and female users. Other results showed that EA is significantly related to GPB towards CFLs. But there was no sufficient evidence to prove the link between consumer demographics and GPB

towards CFLs. Policy implication deriving from this study applies to the government and business organizations as well as the individual consumers.

5.1 Research Implications

The findings in this study have critical implications for business managers, marketers and the Nigerian Government. For manufacturers and marketers of CFLs to secure increased patronage of CFLs, advertising and other marketing communications geared towards promoting CFL usage should be designed to positively influence consumers' attitudes toward CFL. Promotional campaign messages should be oriented toward projecting positive image/benefits of CFLs over other competing brands in the mind of users. Marketers should capitalize on the environmental sustainability of CFLs as its selling point to increase its usage amongst users. For the government, awareness campaign should transcend beyond consumer knowledge and awareness of CFLs to include ability to distinguish among different qualities to be able to identify the SON certified CFLs. To increase the penetration of CFLs usage in residential houses, government should support local manufacturing of standard CFLs as well as borrow a leaf from the Ghanaian government's approach of supporting households with free or subsidized CFLs. SON and Consumer Protection Council (CPC) should systematically intensify efforts to rid the Nigerian market of sub standard CFLs. Government should continue to emphasize and enforce the use of prepaid meter as this strategy would help to curtail corrupt practices among users and service providers earlier identified in the study of Olusola *et al.* (2012). Additionally, this approach has the capacity to compel electricity users to cut cost and adopt CFLs as energy saving strategy. Implication of the research outcome for the individual user of CFLs is majorly in the areas of mercury hazard and safe disposal of used CFLs. Both the individual users and government municipal waste disposal should be enlightened on the safe disposal of used CFLs.

5.2 Implication for Further Studies

For researchers, it is suggested that with enlarged sample size, future studies should investigate the relationship between other psychological variables outside environment attitudes and consumer green purchase Behavior towards CFLs and other energy saving equipments such as low carbon emission fridges, air conditioners and vehicles.

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Appendices

Table1: Demographic Profile of CFL Users

Description of Demographics	Frequency	Percent
Age		
Below 25 Years	97	35.1
26 – 30 Years	67	24.3
31 – 35 Years	66	23.9
36 – 40 Years	42	15.2
41years and above	4	1.4
Education		
Primary Education	19	6.9
Secondary Education	53	19.3
OND/NCE	57	20.7
HND/B.Sc	91	33.1
M.Sc/Ph.D	55	20.0
Income		
Less than ₦30,000	88	35.8
₦31,000 - ₦50,000	50	20.3
₦51000 - ₦100,000	47	19.1
₦51000 - ₦100,000	38	15.4
₦100,000 and Above	23	9.3
Sex		
Male	144	52.2
Female	132	47.8

Table 2: Respondents Awareness and Usage of CFLs

Awareness rate of CFLs	Purchase and Usage of CFLs		
	Yes	No	Total
Yes	203	60	263(95.3%)
No	1	12	13(4.7%)
Total	207(74.2%)	72(25.8)	276

T = -5.937, p = 0.000; Pearson Chi Square 31.494, p = 0.000

Table 3: Respondents Sex and Awareness of CFLs

Awareness rate of CFLs	Sex		
	Male	Female	Total
Yes	139	124	263 (95.3%)
No	5	8	13(4.7%)
Total	144(52.2%)	132 (47.8%)	276

T = -1.012, p = .312; Pearson Chi Square 1.028, p = 3.11

Table 4: Number and Proportion of Bulbs that are CFLs in an Average Household

Energy Saving Bulbs	Frequency	Percent
Number of CFLs in an average household in Benin		
1-5 Bulbs	137	50.4
6-10 Bulbs	97	35.7
11-20 Bulbs	24	8.8
21-30 Bulbs	7	2.6
31 Bulbs and above	7	2.6
Proportion of Bulbs that are CFLs in an average household		
0-20%	90	33.2
21-40%	76	28.0
41 -60%	45	16.6
61- 80%	33	12.2
80-100%	27	10.0

Table 5: Environmental Attitudes and Green Purchasing Behavior toward CFLs

S/NMeasures	MeanStd.	
	N	Dev
1 I think environmental protection is meaningless (Reverse Coded)	2783.54	1.408
2 Environmental protection issues are none of my business (Reverse Coded)	2783.44	1.376
Average attitudes toward environmental issues	2783.65	1.245
1 It is essential to promote energy saving bulbs,	2784.47	.699
2 I strongly agree that more environmentally friendly bulbs/lamps are needed in Nigeria.	2784.35	.817
Average environmental attitudes toward CFLs	2784.59	.646
1 I choose to buy energy saving bulbs that are environmentally-friendly	2733.98	1.032
2 When buying energy saving bulbs, I check label for the health safety of component parts used	2773.51	1.218
3 I prefer energy saving bulbs CFLs over the non-energy saving bulbs even if their product qualities appear similar	2773.62	1.122
4 I buy energy saving bulbs (CFL) even if they are more expensive than the old (incandescent) bulbs.	2773.75	1.198
Average Green Purchasing Behavior	2783.85	.820

Table 6: Respondents Environmental Attitudes and GPB toward CFLs

Factor	Coeff	t Stat	p-value	F-value	Sig	R Square
Environmental Attitude towards CFLs	.270	3.618	.000	13.093	.000*	.045

*Note: Significant at 5% Level of Significance

Table 7: Income, Education and Age Influences on EA toward CFLs

Income	Less than ₦30,000	₦31,000 - ₦50,000	₦51000 - ₦100,000	₦51000 - ₦100,000	₦100,000 & Above	F-value	P-value
EA	4.53	4.51	4.64	4.55	4.65	.377	.825
Education	Primary Education	Secondary Education	OND/NCE	HND/B.Sc	M.Sc/Ph.D	F-value	P-value
EA	4.47	4.64	4.50	4.666	4.53	.889	.471
Age	Below 25 Years	26 – 30 Years	31 – 35 Years	36 – 40 Years	41years and above	F-value	P-value
EA	4.57	4.60	4.61	4.64	4.00	.748	.560

Table 8: Gender Influences on Environmental Attitudes and GPB toward CFLs

Dependent Variable	Sex	N	Mean	Std. Devt.	value	p-value
Attitudes toward CFLs	Male	143	4.59	.653	.335	.738
	Female	132	4.57	.644		
Green Purchasing Behavior towards CFLs	Male	143	3.80	.790	-.756	.452
	Female	132	3.88	.847		

Table 9: Income, Education and Age Influences on GPB of CFLs

Income	< than ₦30,000	₦31,000 - ₦50,000	₦51000 - ₦100,000	₦51000 - ₦100,000	₦100,000 and Above	F-value	P-value
GPB	3.76	3.71	4.00	3.76	4.00	1.194	.314
Education	Pri Edu	Sec Edu	ND/NCE	HND/B.Sc	M.Sc/Ph.D	F-value	P-value
GPB	3.68	3.87	3.91	3.78	3.85	.409	.802
Age	Below 25 Years	26 – 30 Years	31 – 35 Years	36 – 40 Years	41years & above	F-value	P-value
GPB	3.81	3.78	3.89	3.95	3.67	.422	.792

Figure 1: Relationship between Respondents Sex and Awareness of CFLs

