

## **IMPACT OF GREEN ADVERTISING ON GREEN PURCHASE INTENTION OF SMARTPHONE USERS IN SOKOTO, NIGERIA**

**BABANGIDA SALAU ZAILANI**

*Department of Marketing, ABU Business School, Ahmadu Bello University, Zaria*

*Email: ibnzailani@yahoo.com*

*08032297704*

**FATIMA ABDULLAHI MAHADI**

*Department of Marketing, ABU Business School, Ahmadu Bello University, Zaria*

*Email: fatimaabdullahi2009@gmail.com*

*08028448487*

**WASILATU GARBA ABDULLAHI**

*Department of Marketing, ABU Business School, Ahmadu Bello University, Zaria*

*Email: wasilagabdullahi@gmail.com*

*08166665692*

**ZINATU IDRIS ABUBAKAR**

*Department of Marketing, ABU Business School, Ahmadu Bello University, Zaria*

*Email: zeenatabubakar02@gmail.com*

*07030111654*

### **ABSTRACT**

The advancement in environmental concern had influenced customer attitude, behavior, and lifestyle in purchasing telecommunication products and services. There is significant shift from utilizing telecommunication products to greener environment. These had pressured many Smartphone manufacturers to consider on refining the users repurchase intention strategy to focus more on green advertising to achieve customer retention. The impact of green advertising on the green purchase intention has been widely studied by previous literature in the organizational contexts. However, the empirical research from the customer perspective is rather limited. Therefore, this study proposed to fill in the green purchase intention literature gap by focusing on the relationship between green advertising and green purchase intention from the customer perspective using Usmanu Danfodio University Smartphone users. The study used descriptive survey research design consists of 24, 087 students of Usmanu Danfodio University Sokoto (UDUS), using Smartphone with a sample size of 379, out of the total population of UDUS students. Using PLS-SEM the study test the hypotheses formulated and the findings revealed that Product Knowledge has a higher influence on Green Purchase Intention with ( $\beta = 0.590$ ), while Green Advertising has ( $\beta = 0.011$ ) has the second influence to the Green Purchase Intention. While the moderation is positive and insignificant ( $\beta = 0.011$ ). The study recommends that Smartphone marketers should be aware that student Smartphone consumers will make choices based on eco-labeling in the Smartphone, so obtaining appropriate eco-labels is a necessary to improve the business strategy for environmental enterprises.

**KEYWORDS:** Green Advertising, Smartphone, Product Knowledge, Green Purchase Intention, Green Product

## **1. INTRODUCTION**

In recent times, concern for the deplorable state of the environment has increased steadily across the globe. Pollution of the environment has drastically draws the attention of the international community (Adeyemi, Olalekan, & Oluwatobiloba, 2020). Efforts have been pursued to combat the effect of climate change for the achievement of sustainable development (Ogbeide-Osaretin, & Efe, 2022). Consumers (for example students) awareness of the consequences of this threat and the role they need to play for their own well-being and to conserve the environment have led to a drastic growth of green products market (Groening, Sarkis, & Zhu, 2018). This has been demonstrated in their purchases and consumption as most consumers-students are now connecting the dots to the environment and their main lifestyle. Consequently, the demands for green products became inevitable (Lin, & Niu, 2018). This is as a result of the need to understand the dynamic interplay between consumer personality, attitude, environmental factors and subsequent behavioural actions (Marcinkowski & Reid 2019; Wang, Zhang, Yu, & Hu, 2018). Consumers i.e. students make purchase of varieties of goods and services for their satisfaction which lead to purchase decisions (Rather, Tehseen, Itoo, & Parrey, 2019). This shows that students are becoming sensitive to environmental sustainability.

Green purchase intention become a complex process particularly when it relates to eco-friendly ability because, it is related to the action towards the behaviour, perceptions and attitudes of consumers (Arminda, Chris, & Helena, 2018; Kumar, Prakash, & Kumar, 2021). Purchase intention is viewed as the possibility that an individual will purchase a product or service in future (Arslan & Zaman, 2014). A study conducted by Paul, Modi, and Patel (2016) revealed that if attitude and behavioural control are positive, consumers will be more likely to have purchase intentions for green products. It is evident that consumer behavioural intention can be predicted by attitude and knowledge towards green products usage and consumption (Eneizan & Alabboodi, 2019).

Due to the increasing interest in sustainable consumptions in buying product that is environmental friendly, consumers' buying preference (for example green advertising) has drastically changed (Kim & Chung, 2011). Manufacturers use various avenues to attracts consumers to buy a particular products such as use of advertising, sales bonanza and packaging (Bilkisu, 2021). Customers, stakeholders, and corporate decision makers' attention has been drawn to sustainable consumption to preserve and propagate the idea of natural resources which will lead to green purchase intention (Wang, Ma, & Bai, 2019; & Salimi, 2019). This will lead to consumers' sustainable behavior through the purchase of green product. The international communities have renewed war against environmental degradation compelling developed countries to set target on the year to minimize carbon emission (Onyechi, & Ejiofor, 2021). Despite the increasing awareness of environmental sustainability few individuals have developed knowledge of green marketing (Ottman, 2017). As consumers become aware of their consumption related environmental problems, they seek to purchase environmentally friendly products (Urien & Kilbourne, 2011; & Trudel, 2018). This increased interest and awareness in sustainable consumption is expected to influence consumers' purchase decisions (Groening, Sarkis, & Zhu, 2018). This phenomenon is particularly salient in the Smartphone users perspectives from the telecom industry, where marketing green mobile phone products and services require different strategies than marketing non-green mobile phone products.

In 2021, the number of Smartphone users in the world today is 6.378 Billion, which translates to 80.63 percent of the world's population owning a Smartphone. In total, the

number of people that own a smart and feature phone is 7.101 Billion, making up 89.76 percent of the world's population (Ericsson & The Radicati Group, 2021). As such, scholars have investigated associations between Smartphone use and environmental situation (Yong, Tong, & Liu, 2021) which have an effect on the green purchase intention. However, in some developing countries this trend is quite new as some regions are still in the dark, and low awareness about green products is an issue of concern (Organization for Economic Cooperation and Development, 2020). Relating it specifically to the Nigeria society, study revealed that just 5% of Nigerians are engaged in green purchase behaviour (Ajike, & Adefulu, 2021). Attesting to this, Buba, Ibrahim, and Shehzad, (2021) contend that Nigeria's social activists must try to create awareness campaigns to boost decision-makers' and to engage in pro-environmental behaviour and make effective decisions to purchase green products. This implies that there is the need for green advertising message on green product for example (Smartphone). Smartphone constitute 30% of the mobile penetration in Nigeria (Nigerian Communication Commission, 2021). The population of Smartphone users in Nigeria, Africa's biggest economy and the most populous country is forecast to grow to more than 140 million by 2025 (O'Dea, 2020), in a related study it shows that the growth of Nigeria Smartphone market with user numbers will be tripled within the next five to six years (Taylor, 2023). This has shown that strong growth outlook for the Nigerian Smartphone market with user numbers to increase rapidly. Africa as one of the hardest region hit by the climate change caused by many factors such as energy use for economic activities which is more in the developed nations, Africa countries are more vulnerable to climate change as a result of consumption related issues and over dependence of agriculture with little or no technological progress for climate change mitigation (Asogwa, Ugwuanyi, & Anumudu, 2018). This implies that there is need to sensitive consumers to consider environment when making intention to purchase Smartphone.

Consumers may likely consider green advertising appeal when making green purchase intention, however, from green products, green advertising is part of consumer preference. Consumers that are environmentally concerned will begin to search for the product that is environmentally friendly which will lead to product knowledge (Wang et al., 2019). Product knowledge is expected to play an important role on consumer purchase decision (Ateke, & Didia, 2018). According to Harahap, Zuhriyah, and Rahmayanti, (2018) product knowledge is a perception of consumers towards a particular product, including prior experience of the product. This implies that consumers that have product knowledge may consider some features of the product such as environmentally friendly features. Therefore, consumers that have environmental concern would likely prefer products that are environmentally friendly in their purchase intention and search for green advertising message to guide their decision.

Green advertising is an effort to change consumers' traditional purchase behaviour by influencing them to buy products that have positive impact on the environment or do not harm the environment (Nur, Akmaliah, Chairul, & Safira, 2021). Consumers tend to consider advertising message in the decision-making process to aid in green purchase intention. All companies face the challenge of integrating environmental awareness into their business strategies and activities, including their green advertising. Consumers in some countries are still skeptical in terms of the credibility of green advertising due to "mobile phone usage" (Leonidou, & Skarmeas, 2017). Although consumers are somewhat reluctant to accept content about credibility, green advertising has positive results for business when presented efficiently (Kumar, 2017). Therefore, it is necessary to use green

advertising to inform consumers of existing eco-friendly products (Smartphone) to shape consumers' orientation on green intention toward sustainable consumption.

Schools as one of the agents of socialization, with the expansion of educational system, students use Smartphone for socialization and educational interaction (Soyemi, Oloruntoba, & Okafor, 2015). Smartphone have become a popular medium of social as well as academic connection proponents of Smartphone usage in higher education institution assert that students communicate with each other through their cellphone to exchange notes, lectures, and assignments and for productive academic discussions (Al-Khalifa & Garcia, 2013). With the emergence of COVID-19 pandemic, online studies have become a necessity and are a new Normal (Mishra, Gupta, & Shree, 2020). This study argues that the usage of Smartphone for e-learning by students is increasing; consequently, it has impact on the environment.

Therefore, this study considers the impact of green advertising on green purchase intention of Smartphone users in Usmanu Danfodio University, Sokoto: Moderated by Product Knowledge.

## **2. LITERATURE REVIEW**

For better understanding of this study concept of product knowledge, green consumer behavior and green purchase intention is review for better understanding of the study with the theory of reasoned action (TRA) as underpinning theory that explain behavioural intention of consumers.

### **2.1 Green Purchase Intention**

Purchase intentions are based not only on the practical benefits predicted to come from a brand but also on how the purchase is going to help the consumer accomplish certain social goals, such as self-presentation and conformance of social norms (Pristl, Kilian, & Mann, 2020). The theory of reasoned action (TRA) developed by Ajzen and Fishbein, argues that behavioural intentions created by attitude towards a behaviour and subjective norms lead to the actual behavior, based on the accessibility of resources and opportunities. Grounded on this theory, purchase intentions are frequently used to forecast consumer's actual behavior (Luo, Ja-shen, Russell, Liu, & Chu-chi, 2011), before making the actual purchase of a product particularly Smartphone. There are certain functions of the products, which have a strong influence on the purchase intention of the customer's if the organization intent to go green then this factors shall be consider green consumer behaviour, green environment and the product knowledge. Purchase intention is seen as an antecedent that stimulates and drives consumers' actual purchase of products and services (Zhang, Zhou, & Liu, 2020). Therefore, purchase intention is created by individual attitude towards a behavior and subjective norms which lead to actual behavior of students who purchase Smartphone which could be green purchase intention or purchase intention.

Green purchase intention literature has been area of concern to many scholars and marketers to understand how consumers make decisions on purchasing products that are green or eco-friendly for environmental sustainability. Green purchase intention is defined as intention to purchase product that is environmental friendly. Therefore, green purchase intention can predict the purchase behavior of consumers whether to buy product that is green in nature or buy product that is not green in nature. Green purchase intention is an individual's plan to involve in some actions within a specific time and the probability that

individual will perform an eco-behaviour (Qader & Zainuddin, 2011). Several studies conducted such as (Nia, Dyah, Hery, & Bayu, 2018; and Qi, & Ploeger, 2019) measured direct relationship between dependent and independent variable. While studies conducted by (Qader & Zainuddin, 2011; Schilla, Godefroit-Winkelb, Dialloc & Barbaross, 2019; Aravindan, Ramayah, Thavanethen, Raman, Ilhavenil, Annamalah, & Choong, 2023) were conducted in China, France, and Malaysia respectively. Therefore, suggestion was made for further research in other continents to replicate such study on purchase intention such as Nigeria for better understanding. Particularly purchase intention of students using Smartphone.

## **2.2 Product Knowledge**

Knowledge is seen as ability of consumer to be able to evaluate and translate information and preferences as well as purchase behavior of green products through the use of information stored in the consumers' memory. The more knowledge consumers have about green products, the more they understand the environmental protection functions and attributes of green products (Wang et al., 2019). According to Ateke and Didia (2018), related product knowledge that consumers accumulate over time through various sources or product itself is rely upon to aid in purchase decision, is describe as consumer knowledge. The study went further to posit that consumer knowledge is therefore a cogent driver of purchase intention; and requires further research attention. Knowledge can be use as one of the determinant in the decision making when making a purchase of a particular product. One of the conceptualized antecedents of green purchase intention is product knowledge (Wang, et al., 2019). This implies that when student has a adequate knowledge of Smartphone will guide their green purchase intention.

Green Smartphone knowledge by the consumers can be a determinant for purchase intention. In energy related products, the increase in the consumer knowledge about new energy saving product, the stronger their belief that using new energy products such as Smartphone produces positive results and can improve performance of environment and reduce environmental problems (Wang et al., 2019). Several elements can affect purchase intention of Smartphone by the consumers such as product availability, perceived quality, health perception, environmental awareness and the distribution of the products all these constitute product knowledge (Curvelo, Watanabe & Alfinito, 2019). Consumers with more product knowledge have a better pro-environmental attitude with a stronger intent to purchase green products (Suki, 2016). Therefore, student with product knowledge (Smartphone), good environmental attitude and intention to purchase Smartphone will go for Smartphone with green features. Hence, this study needs to investigate elements that affect purchase intention of Smartphone.

This study observed that consumers' consumption culture of the twentieth century has culminated into environmental degradation and its adverse consequences on health and the ecosystem. Despite these concerns, consumers still fail to purchase environmentally-friendly or green Smart phone products due to the lack of awareness and belief about the benefits of such products in green nature. Green Smartphone will play a very important role in the preservation of the environment with minimal contamination of the society and influence purchase intention of the Smartphone if the green nature of it is considered when producing it.

### **2.3 Smartphone**

Smartphone as one the popular medium of social as well as academic interaction, is a proponents of Smartphone usage in Federal Universities which assert that students communicate with one another using Smartphone to exchange lecture notes and assignments for productive academic discussions (Ahmed, Salman, Malik, Streimikiene, Soomro, & Pahi, 2019). Implications of green marketing on Smartphone, the following measures to market Smartphone are structured according to the four instruments of marketing mix, which are product, price, place and promotion. Product: green Smartphone attributes have a positive influence on consumer choices. Low energy consumption and a disposal concept, which includes recycling, are important to the consumers. Price: for green Smartphone the price can be seen as a quality indicator. It's obvious that most consumers will be willing to pay higher price for green Smartphone attributes. The price should be set for the target group, who tend to have an above average income and are less price oriented. Promotion: the promotion should use communication channels and advertisement to reach target consumers. In a related study on Smart home object has been conducted (Schilla, Godefroit-Winkelb, Dialloc & Barbaross, 2019) suggested to use other smart electronics devices. Therefore, this study used Smartphone to understand students green purchase intentions.

### **2.4 Green Advertising**

Advertising is one the marketing mix which is used to communicate about product or services of an organization that provide information about the benefit of a product or services which can influence a person's desire to purchase product or services (Kusuma & Handayani, 2018). Therefore, advertising provide information that will guide consumer in the decision making when it come to purchase of product or services. Kusuma and Hamdayani (2018) conducted a study that examines the effect of environmental knowledge, green advertising and environmental attitude toward green purchase intention, and effect of environmental attitude toward green purchase intention of starbucks consumers. The study revealed that environmental knowledge and green advertising have a positive and significant effect on environmental attitude and green purchase intention. From this study it indicates that green advertising have positive relationship on green purchase intention.

According to Kim and Yoon (2017) green advertising is about making emphases on environmental friendliness of a product which identify the relationship between product and the environment, corporate image of environmental responsibility and promote green lifestyle. The study investigated predicting green advertising attitude and behavioural intention in South Korea with health belief model and the study revealed that ecological consumption is influenced by the consumers' past experience with green marketing as well as their beliefs about the environmental issues. The study did not consider the medium for the advertising to show whether the University students understood the advertising message disseminated to them through the medium used and how it influence their attitude and purchase behavior of a product. According to Kao and Du (2020) green advertising as a marketing communication message that attracts consumers' needs and desires related to the environment. The study considers information about product, media, the argument credibility, relevance, perceived validity of information, and environmental behavior as dimension of green advertising which consider how these factors affect and influence consumer purchase decision of a particular product such as Smartphone. The study revealed

that green advertising design with self-reference effect and good argument quality has the best advertising effect. This study argues that green advertising practices might encourage manufacturer of Smartphone to develop energy efficient products, which will be inevitably affect sustainability. Also the study shows that with the applicability of green marketing for example green advertising, would allow the manufacturer to save money in the long run and helps the company to develop innovative products, gives them competitive advantage and favourable image among students.

Kao and Du, (2020) carried out a study on green advertising design and environmental emotion on advertising effects of 2 universities in Central and Southern Taiwan. The study only considers two universities in Taiwan and used SPSS to test the hypothesis. From those studies on green advertising, some use students as population of study while some use general consumers, the results are inconsistent because of the commitment to read the product label to confirm if the product is green compliant or not. Some of the consumers who are not students cannot read the information on the label. Therefore, there is need to conduct similar study using students of various universities as study population for better understanding

### ***Moderation of Product Knowledge on Green Advertising and Green Purchase Intention***

Studies have been conducted to measure the green purchase intention of the consumers on green product, Chen and Deng (2016) study conducted on investigation of green purchase intentions from the perspective of product knowledge with the product knowledge as the moderator. The study revealed that product knowledge had a significant moderating effect on the relationship between three independent variables and green purchase intentions. A similar study was also conducted on how does product knowledge effectively promote green purchase intention? by (Wang, et al., 2019) the study revealed that green trust and perceived consumer effectiveness partly mediate the relationship between green product knowledge and green purchase intention, while the relationship between green trust and green purchase intention is positively moderated by perceived price. A study conducted by Liao, Wu, and Pham (2020) on examining the moderating effects of green marketing and green psychological benefits on customers' green attitude, value and purchase intention. The study revealed that green customer value and attitudes towards green product have a positive effect on green purchase intention. A study conducted on impact of consumer environmental responsibility on green consumption behavior in China: The role of environmental concern and price sensitivity by (Yue, Sheng, She & Xu, 2020) the study revealed that price sensitivity has negative moderation role in the relationship among environmental responsibility, environmental concern and green consumption intention.

The above mentioned studies (Yue, Sheng, She & Xu, 2020; Wang, Ma, & Bai, 2019; Chen & Deng, 2016), used other variables to moderate the relationship between the independent and dependent variables. While some studies have direct measurement without interacting variable others studies used moderator of green brand knowledge, price discount, to measure green purchase intention. These results were inconsistent; therefore, moderator is introduced to measure between the independent variable and dependent variable. On the bases of measurement of behavioural intention on green advertising with the intervening variable, this study utilized product knowledge as moderator to measure relationship between green advertising and green purchase intention. Consequently, product knowledge served as moderator to measure relationships between green product (Smartphone) green advertising, on green purchase intention.

### **3. METHODOLOGY**

#### **3.1 Theoretical Framework**

The green literature acknowledges some theories that are popularly applied in the study of green purchase behaviour, green purchase intention, purchase intention (Paul, Modi & Patel, 2016; Gupta & Ogden, 2009; Kalafatis, Pollard, East, & Tsogas, 1999). They are theories of Reasoned Action, and theory of Planned Behaviour. Theory of Reasoned Action (TRA): TRA which has its origins in social psychology was initially developed by Martin Fishbein in the late 1960s and it was revised by Ajzen and Fishbein (1980). While Theory of Planned Behaviour was developed by Ajzen, 1988, assumes that the best prediction of behaviour is given by asking people if they are intending to behave in a certain way. He went further to explain that behavioural intention can be explained base on attitude, the subjective norm and perceived behavioural control. This study focuses on consumer green purchase intention as the dependent variable. Theory of Reason Action is relevant to this study because it measures attitude in relation to predicting behaviour of individual.

#### **3.2 Research Design**

The study used descriptive survey research design. The population for this study consists of 24, 087 students of Usmanu Danfodio University Sokoto (UDUS), using Smartphone. The sample size for this study is determined by using Krejcie and Morgan (1970) table. To come up with the sample size of population for the study Krejcie and Morgan table is used. Therefore the sample size for this study is 379, out of the total population of UDUS students. Descriptive survey research design was employed and data was obtained through the use of questionnaire from the users (Students) of Smartphone in UDUS, Sokoto State (Zikmund, 1999; Mcphail 1999; Perry, 1998). 5 point of Likert scale is used to measure dimension. 1 stand for Strongly Disagree (SD), 2 Disagree (D), 3 undecided (U), 4 Agree (A) and 5 Strongly Agree (SA).

To ensure the validity of the items on the questionnaire, the study adapted some items such as product knowledge, green advertising and green purchase intention from the work of (Shirin&Kambiz, 2011; Suhaily, Darmoyo&Boentoro, 2018; and Rahim, Sulaiman, Chin, Baharam & Muharam, 2016). Adapting some of the items from their scales into the study's instrument was justified by the fact that these scales have been tested and proven to be valid over the period of time of testing various dimensions of work product knowledge, green advertising and green purchase intention of Smartphone. Hence, the need for the study to further conduct validity tests for the instrument is not necessary since the items have been previously validated. The study used PLS-SEM path modeling version 3.0 to analyze the data.

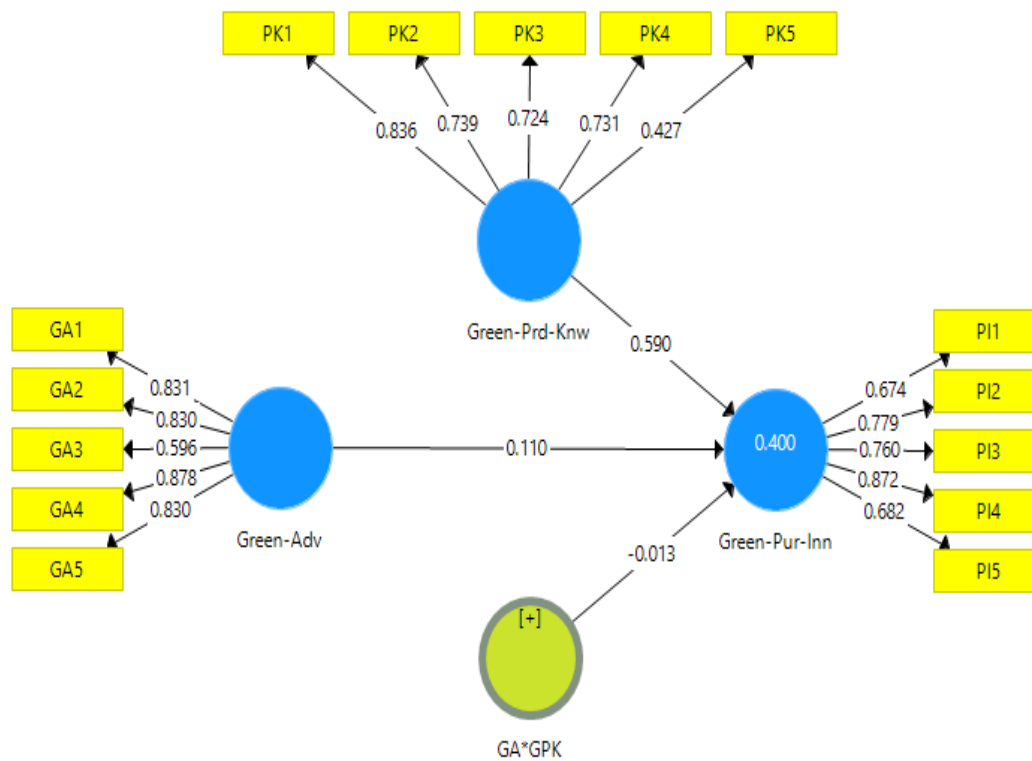
#### **3.3 Reliability and Validity**

This study performs internal consistency composite reliability (CR) to ensure the accuracy of the designed first-order reflective constructs and factor loading to evaluate the reliability of each item (Nunnally 1994) It also executes the average variance extended (AVE) to evaluate the construct's validity. As illustrated in Table 1, factor-loading values for all informative indicators were above 0.5. It achieves the desired value, which findings supported by several studies (Hair et al. 2011). The results of constructs achieved desired



composite reliability (CR)>0.7and have gotten accepted AVEvalue>0.5aspresented in Table 1.

#### 4. RESULTS AND DISCUSSION OF FINDINGS



**Table 1 Constructs Reliability and Validity**

Items	Loadings	CA	CR	AVE
GA1	0.831	<b>0.854</b>	<b>0.897</b>	<b>0.639</b>
GA2	0.83			
GA3	0.596			
GA4	0.878			
GA5	0.83			
PI1	0.674	<b>0.815</b>	<b>0.869</b>	<b>0.573</b>
PI2	0.779			
PI3	0.76			
PI4	0.872			
PI5	0.682			
PK1	0.836	<b>0.739</b>	<b>0.826</b>	<b>0.548</b>
PK2	0.739			
PK3	0.724			
PK4	0.731			
PK5	0.427			

Table 1 shows the loadings of the respective items on their construct, and all the loadings are above 0.5. Also, the tables show the Cronbach's Alpha (CA) and composite reliability (CR) which is above the threshold of 0.7 and Average Variance Extracted (AVE) is above the recommended value of 0.5.

#### 4.2 Discriminant validity

The discriminant validity explains how each variable is distinct from each other in the study. The study report in table 2 using Fornell and Lacker Criterion, Cross Loadings and Heterotraits-Monotraits Ratio.

**Table 2 Discriminants Validity Fornell and Lacker Criterion**

	GA*PK	Green-Adv	Prd-Knw	Green-Pur-Inn
GA*PK	1			
Green-Adv	-0.611	0.799		
Green-Prd-Knw	0.045	0.298	0.705	
Green-Pur-Inn	-0.052	0.293	0.622	0.757

Table 2 shows the discriminant validity using Fornell and Lacker criterion for the variable of the study. It indicates that, the diagonal and bold figure shows the square of the AVE and they are above all the correlation of their respective loadings. Thus, the study satisfies this discriminant validity criterion and hence we shall check the next criterion.

#### 4.3 R Square

The coefficient of determination ( $R^2$ ) illustrates the amount of variance in the endogenous constructs. It indicates that the threshold value of 0.25 (as weak), 0.5 (as moderate) and 0.7 (as substantial respectively). Thus, below is the R square value for the study.

**Table 3 Coefficient of Determination**

R Square	R Square	R Square Adjusted
Green purchase Intention	0.400	0.394

Table 3 shows the R Square value, however, it is acceptable when the  $R^2$  value is less than 0.19 (Chin 1998). Table 3 shows that the  $R^2$  value is 0.400. Therefore, it explains the 40% of the variation in independent variables of the model.

#### 4.4. Assessment of Structural Model/Inner Loading

This subsection explains about the assessment of structural model. Also, it completes the SEM model, which describes the correlations among the latent variables that make up the SEM model (Chin, 2010).

**Figure 2 Bootstrapping Result of Direct Relationship**

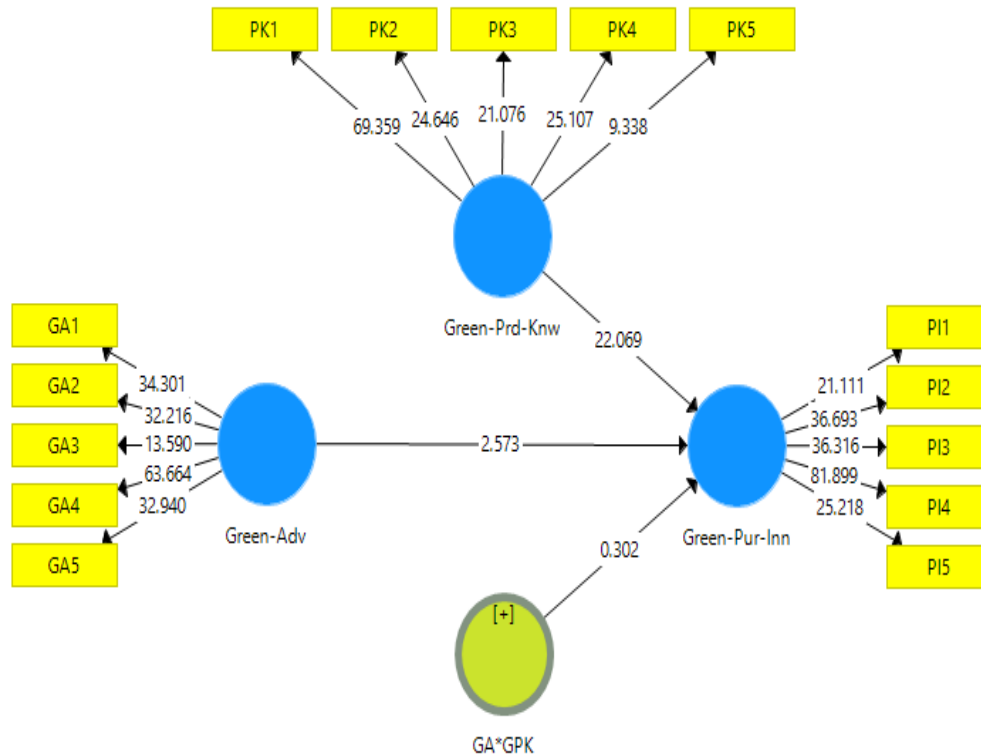


Figure 2 show the result of bootstrapping of the direct relationship between the independent variables and the dependent variable of the study and it show the test of hypotheses. Below is the result of the test of hypotheses in table 4

**Table 4 Test of Hypotheses**

Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values	Decision
GA*PK -> Green-Pur-Inn	0.013	0.014	0.043	0.304	0.761	Fail to Reject
Green-Adv -> Green-Pur-Inn	0.11	0.11	0.042	2.627	0.009	Rejected
Prd-Knw -> Green-Pur-Inn	0.59	0.591	0.026	22.54	0.000	Rejected

Table 4 shows the bootstrapping procedure for testing the hypotheses and evaluates the significance between constructs (Henseler et al. 2015). The table further elucidates that all constructs in the model are with a critical value of 1.96 for the two-tailed test at significant level  $p < 0.05$ . Therefore, it supports the following hypotheses:

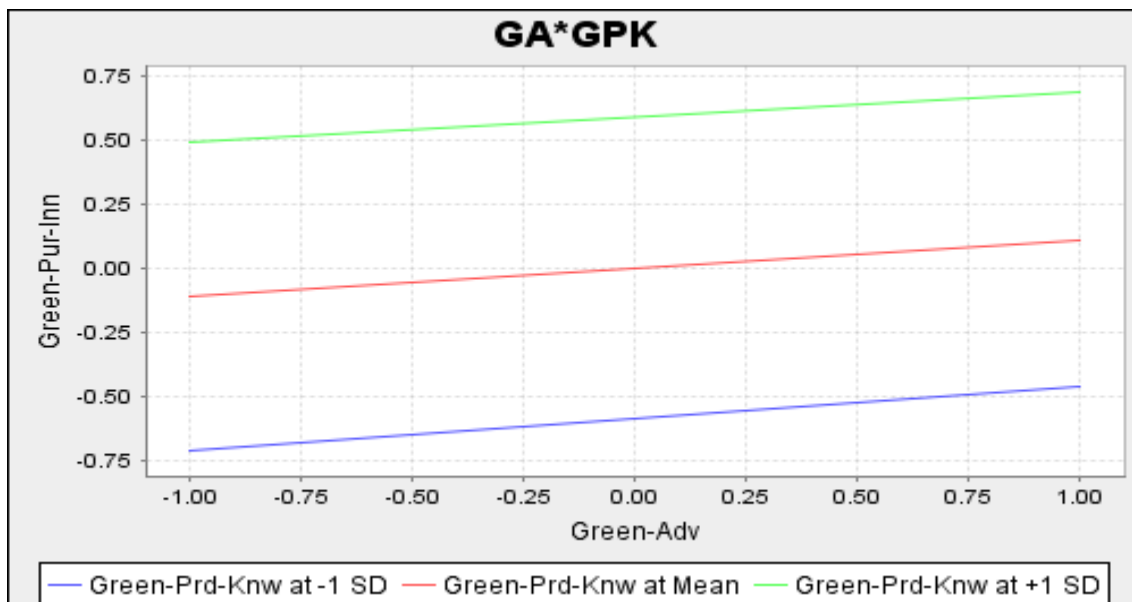
Table 4 Summaries of the assessment of the relationship between the constructs (endogenous and exogenous). Results recapitulate that,

**H<sub>01</sub>:** There is no significant relationship between Green Advertising and Green Purchase Intention: Green Advertising had a positive and significant relationship between Green Purchase Intention ( $\beta = 0.011$ , t-value 2.627 and P value = 0.009)

**H<sub>02</sub>:** There is no significant relationship between Product Knowledge and Green Purchase Intention; Product Knowledge had a positive and significant relationship between Green Purchase Intention ( $\beta = 0.59$ , t-value 22.540 and P value = 0.000)

**H<sub>03</sub>:** Product Knowledge does not moderate the relationship between Green Advertising and Green Purchase Intention; Product Knowledge does moderate the relationship positive but insignificant between Green Purchase Intention ( $\beta = 0.013$ , t-value 0.304 and P value = 0.761)

In contrast, results show that Product Knowledge has a higher influence on Green Purchase Intention with ( $\beta = 0.590$ ), while Green Advertising has ( $\beta = 0.011$ ) has the second influence to the Green Purchase Intention. While the moderation is positive and insignificant ( $\beta = 0.011$ ).



From the slope the study shows that the direction is positive and insignificant meaning that the manufacturer had to increase the level of green advertising to promote the usage of green eco-friendly Smartphone product.

#### 4.5 Discussion

This study examines the impact of green advertising on green purchase intention of Smartphone users in Usmanu Danfodio University, Sokoto, and shows the interaction using Product Knowledge. The interacting effects of green advertising on green purchase intention through product knowledge are examined through decomposition tests using a bootstrapping method. The results (bootstrapping 5000 times) showed that the moderating effect of green advertising on green purchase intention via product knowledge, show that product knowledge does moderate the relationship positive but insignificant with Green Purchase Intention ( $\beta = 0.013$ , t-value 0.304 and P value = 0.761). For the direct relationship the result reveals that green advertising and product knowledge were significant. The result

indicates that green advertising has a positive effect on intention to purchase eco-labeled products because green advertising highlights the environmental benefits.

The study shows that a consumer's promotion focus on eco-labeled Smartphone products has a non-significant moderating effect on the relationship between green advertising and purchase intention. The result is consistent with the findings of Kao and Du, (2020) and Kusuma, and Handayani, (2018). It is possible that advertising focuses on protection, safety, and responsibility of Smartphone to avoid adverse consequences, this is generated by non-environmental protection, which has a long-term effect, and the impact on consumers is small (Higgins, 2002). As mentioned before, promotion and direct advertising is related to the maximization of positive results in order to seize every opportunity for sales achievement. Student (consumers) is more willing to engage in moral behavior when they realize that they have strong Smartphone product knowledge to give them more performance with higher net benefits (Chen, & Deng, 2016). This indicates that marketers with strong advertisement and promotion strategies on Smartphone are more likely to ignore general ethical principles; hence the students are tempted when making green decisions on type of Smartphone to buy and usage. Hence, the study believe that the product knowledge was positive and insignificantly moderating the relationship between green advertising and purchase intention

## **5.0 COCLUSION AND RECOMMENDATIONS**

Students as consumers who are influenced by Smartphone green advertising are aware of environmental problems and think their behavior has an impact on the environment. Green advertising always contains the context (Smartphone) about where to purchase eco-labeled Smartphone products and how to distinguish them from ordinary products. Thus, green advertising is positively related to green purchase intention. It is also shown that student participants reported significant Smartphone product knowledge for the given green advertising when making green purchase intention. This study concludes that both green advertising and product knowledge is the predictor of green purchase intention of student Smartphone users.

The study recommends that Smartphone marketers should be aware that student Smartphone consumers will make choices based on eco-labeling in the Smartphone, so obtaining appropriate eco-labels is necessary to improve the business strategy for environmental enterprises.

Measures should be taken to obtain appropriate Smartphone eco-labels and further encourage student consumers to buy eco-labeled products.

The study recommends that marketers should create more awareness on the Smartphone that are environmentally friendly. Emphasis should be on product knowledge.

The findings of this study cannot be use to generalize, therefore, such study is recommended to be replicated in other universities across the country Nigeria

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