Determinants of green purchase intention in Nigeria:  
The mediating role of green perceived value

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Abstract

The purpose of this paper is to examine the factors which may influence green behaviour in Nigeria. The study explores the influence of green price sensitivity, perceived behavioural control, green trust, government regulations, perceived green knowledge on green purchase intention and also the mediation effect of green perceived value between these determinants and green purchase intention. In actualizing this, quantitative survey was conducted involving 750 self-administered questionnaires to university lecturers. 440 datasets were usable after screening; with these the analysis was carried out using structural equation modelling (SEM). The findings unveiled that perceived green knowledge, green perceived value and perceived behavioural control have significant direct relationship with green purchase intention; perceived behavioural control, green trust, government regulations and perceived green knowledge have positive and significant relationship with perceived value. On the mediation, green perceived value mediates between perceived green knowledge, government regulation, and green trust, perceived behavioural control and green purchase intention. This paper sheds light on the consumer’s behavioural intentions towards green in the Nigerian context and will heighten the coordination of marketing strategies and government policy for environmental sustainability.

Keywords: Green purchase intention, government regulation, perceived behavioural control, perceived green knowledge, green price sensitivity, green perceived value

1. INTRODUCTION

Today, environmental issues have brought strong and huge passion on people worldwide who have linked relationships among human behaviour, consumer behaviour, marketing and other natural environment. The abrupt pace and scale of industrial growth has caused significant environmental risks for public and ecological health at local, regional and around the globe. Again, many of the serious environmental problems we encounter today are due to modern development and the quest for economic growth (Eltayeb, Zailan & Jayaraman, 2010). A study revealed that 69% of the general public believe pollution and other environmental damage are having great impact on everyday life (Worcester, Cornuelle & Howe, 1993). There has been rapid global consciousness about the safety of the environment which have been discussed in different domains (Zhou, 2013; Knight & Messer, 2012; Mostafa, 2007).

Most common are the noticeable frequent use of words like sustainable development, ecology, recycling, green energy, climate change, green accounting and green marketing. Illuminating more on the rise in consciousness of consumers, studies were carried out on green purchase intention to determine the drivers of this phenomenon
in developed countries. Examples are the survey by Gallup in which 1,014 US consumers were used, and the result indicated that 76% of the respondents affirmed they looked for products which are better for the environment; 90% said they recycled, 28% are affiliated to political candidates who are environmentally concerned while 17% consult government officials on green issues (Morales, 2010). Green purchase intention explicates specific environmental friendly behavioural intention in purchasing whereby the consumers demonstrate their concern for the environment. It is a very significant factor which serves as a proxy to actual purchase (Ramayah, Lee & Mohammed, 2010). Consumers are increasingly becoming apprehensive and aware of their importance in the society; these also have driven societies and businesses into adopting the green initiatives in developed and some developing countries (Mishra, Pavan, Sharma & Payal, 2010). Globally, this shift is compelling originations to respond to the appeal for environmental friendly products and to be socially responsible. This however is not as pronounced in a developing nation like Nigeria as little is known about “green”.

1.1 Problems and Objectives of the Study

This study identifies low level of green knowledge, weak government regulation, lack of trust for green products and green price sensitivity as issues which may hamper green purchase intention amongst the Nigerian consumers.

In line with the above stated problems, this study aims at examining the determinants of green purchase intention in Nigeria. Furthermore, the study examines the mediating effect of perceived green value on the relationship between these predictors and the criterion variable (green purchase intention).

2. LITERATURE REVIEW

2.1 Perceived Behavioural Control and Green Purchase Intention

Perceived behavioural control depicts the extent to which consumers perceive they have control over behaviour they need to exhibit towards intention to purchase green product. The path is clearly shown on the TPB model as a direct determinant of intention and have been studied by (Tan, 2013; Lien, Huang & Chang, 2012; Kim & Chung 2011; Kim & Han, 2010) These authors attest to the role PBC plays as a significant factor in predicting behavioural intentions.

\[ H_1: \text{There is positive effect of perceived behavioural control on green purchase intention} \]

\[ H_2: \text{There is positive effect of perceived behavioural control on green perceived value} \]

2.2 Green Trust and Green Purchase Intention

Green trust is belief in the product based on its credibility, benevolence and the environmental expectation (Chen, 2010). Being a disposition of the individual and most often denoted by attitude on the theory of planned behavior is opined to be a direct antecedent of green purchase intention (Ajzen, 1995). Previous studies have indicated that green trust is a strong determinant of green purchase intention (Rizwani et al., 2013; Chen & Chang, 2012). Additionally, Green trust and perceived value have been found to have positive and significant relationship, hence the significant role demonstrated by trust in influencing green perceived value have been tested by (Chen, 2010; Kim, Xu & Gupta, 2012).

\[ H_3: \text{There is positive effect of green trust on green purchase intention} \]

\[ H_4: \text{There is positive effect of green trust on green perceived value} \]

2.3 Perceived Green Knowledge and Green Purchase Intention

Apparently, when the knowledge of a community on green is high, there will be high possibility of purchase intention for green products. Laying emphasis on this, the relationship between perceived green knowledge and green purchase intention has been supported by past studies (Wu et al., 2013; Azizan & Suki, 2013; Shamsollah et al., 2013; Mei et al., 2012) using environmental awareness, environmental knowledge and ecological knowledge interchangeably to explain the concept and empirically tested the extent to which it influenced green purchase intention. Furthermore, knowledge of the product leads to better understanding of the quality and performance of the product. If consumers have low perception of green product value, it will affect negatively their purchase intention (Zakersalehi & Zakersalehi, 2012; Shafiq, Raza & Zia-ur-Rehman, 2011). Knowledge is vital when it comes to evaluating the worth of the product. Green Knowledge therefore has significant influence on green perceived value.
$H_3$ There is positive effect of perceived green knowledge on green purchase intention

$H_4$ There is positive effect of perceived green knowledge on green perceived value

2.4 Government Regulations and Green Purchase Intention

The need for this linkage is to spur the government to create awareness to penetrate significantly the people to encourage green behavior. Drawing conclusions from prior empirical work, there are inconsistencies in findings on the relationship between government regulations and green purchase intention (Shamollahi et al., 2013; Numraktrakul et al., 2011) supported the significant role this plays in influencing purchase intention. Contrary to what has been revealed in the aforementioned studies, authors such as (Ragavan & Mageb, 2013; Qader & Zanuddin; 2010) argued that government regulations (role and support) do not have any significant relationship with green purchase intention.

$H_5$ There is positive effect of government regulations on green purchase intention

$H_6$ There is positive effect of government regulations on green perceived value

2.5 Green Perceived Value and Green Purchase Intention

Perceived value is viewed as the whole evaluation of the product in the light of consumer’s expectation from its attributes and advantages (Zeithaml, 1988). Previous studies acknowledged that perceived value is central in marketing performance because organizations could foster consumer purchase intention via product value (Steenkamp & Geyskens, 2006; Zhuang et al, 2010). Those consumers who are environmentally concerned will engage in purchasing green products for their environmental benefits (Yaacob & Zakaria, 2011). Researchers have widely identified the significant relationship between perceived value and green purchase intention (Kong, Harun, Sulong & Lily, 2014; Delghanan & Bakhshandeh, 2014; Lian & Chaipoopirutana, 2014; Rajput, Kaura & Khanna, 2014; Chen & Chang, 2012).

$H_7$ There is positive effect of green perceived value on green purchase intention

2.6 Green Price Sensitivity and Green Purchase Intention

Consumer’s purchase decision is largely affected by their sensitivity to price. Price sensitivity or consciousness explains how consumers react to purchases when prices are high or low (Ahmad, Yousuf, Shabeer & Imran, 2014). Considering the discussions on the studies of previous researchers, they have thrown light on the relationship between green price and purchase intention based on the outcome of their studies. Exploring this linkage, they confirmed that price sensitivity significantly influence green purchase intention (Rajput, et al., 2014; Menahem, Boxer & Rekettye, 2010). Perceived value can affect consumers influence in the choice of buying specific brands (Gouix, Guofeng & Kambele, 2012). Most often, consumers associate price with the value of the items and evaluate the product based on the benefit to be derived and what they pay. Consumer’ generally speaking are driven by value and would compare what he/she receives in terms of quality, benefits and the utility derived from using the product and what they give such as money and time (Kim, Xu & Gupta, 2012). Consumers will buy green products if the perceive that the product have additional value to enhance their environmental activities.

$H_{10}$ There is positive effect of green price sensitivity on green purchase intention

$H_{11}$ There is positive effect of green price sensitivity on green perceived value

3. RESEARCH METHODOLOGY

The study made use of quantitative survey and questionnaires were used to collect data. Precisely, seven hundred and fifty (750) self-administered questionnaires were distributed. Having passed the datasets through screening and Mahalanobis deletion, the remaining datasets (440) were used for further analysis using structural equation modelling. Seven (7) point Likert scaling was utilized. Sample size of 400 was drawn from the university lectures in Nigeria.

The means, standard deviation and the descriptive analysis for respondents’ profile were conducted followed by validity test for reliability (Cronbach alpha) using SPSS. In addition, other tests using AMOS in structural equation modelling was adopted for analysis. The process applied in SEM analysis for this study are confirmatory factor analysis, composite, convergent and discriminant validity, measurement analysis, direct and indirect impact analysis (mediating effects) and fit for the hypothesized structural model.
3.1 Research Findings

Findings from this study are presented accordingly.

<table>
<thead>
<tr>
<th>Construct Name</th>
<th>No of Item</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGK</td>
<td>12</td>
<td>5.156</td>
<td>0.829</td>
</tr>
<tr>
<td>GRN</td>
<td>6</td>
<td>5.422</td>
<td>0.994</td>
</tr>
<tr>
<td>GPV</td>
<td>6</td>
<td>5.564</td>
<td>0.909</td>
</tr>
<tr>
<td>GPST</td>
<td>9</td>
<td>5.072</td>
<td>0.851</td>
</tr>
<tr>
<td>GTS</td>
<td>6</td>
<td>5.619</td>
<td>0.916</td>
</tr>
<tr>
<td>PBCL</td>
<td>6</td>
<td>5.142</td>
<td>0.901</td>
</tr>
<tr>
<td>GPI</td>
<td>6</td>
<td>5.327</td>
<td>1.133</td>
</tr>
</tbody>
</table>

Both means and standard deviation rated high and are within the acceptable value. The mean of green trust is the highest (\( \mu = 5.619 \)) while the lowest mean is green price sensitivity (\( \mu = 5.072 \)) (Table 1). The standard deviation ranges from 0.80 to 1.133, indicating small acceptable variance from means and the presence of satisfactory variability in the data set being used.

3.2 Demographic Statistics of Respondents

Demographic profile indicated that majority of the respondents are within the age bracket of 41-43, (81.4%). It is observed also that 75.7% of the respondents are male while 24.3% are female, indicating that the male are the majority. Income wise, most of the respondents 42% are low income earners, 4.3% earn high income. Additionally, lower level staff of the university as statistics revealed stands at 65.9%, on the other hand heads of departments and other senior staff both have (13.7%). As shown from the data, educational statistics indicates that (35.7%) are workers having first degree, those with lest qualification has (17%) and those with the lowest qualification have (26.5%). The residential result showed that (66%) are from the urban area while (34%) are from the sub-urban.

3.3 Reliability and Validity of Constructs

3.3.1 Reliability

Reliability relates to the internal consistency of measures (Sekaran & Bougie, 2010). In order to establish the goodness of measure for this study, the reliability of instrument is tested through the SPSS. The entire 440 data sets were entered into SPSS spreadsheet for validation of instruments (Tabachnick & Fidell, 2014). Constructs
were found to have reliable Cronbach alpha value above 0.70. Based on (Nunnally, 1990) Cronbach reading of
0.60 is within the acceptable limit; the reading for each of the constructs selected is indicated on (Table 4).

3.3.2 Convergent Validity

The validity of constructs explains the suitability and validity of the measures in validating the theory adopted in
the study. The convergent validity determines the extent to which items converged to measure the constructs
which they are supposed to. This can be assessed through the composite reliability, factor loadings and average
variance extracted. Tables 3 and 4 displays all the values; the AVE has values ranging from above 0.9, exceeding
the cut off of 0.70 (Fornell & Larcker, 1981; Byrne, 2010).

3.3.3 Discriminant Validity of Constructs

The discriminant validity of measures which assesses the extent to which items are differentiated among
constructs was equally examined; the aim is to ensure that items do not overlay or intersect with each other. This
is determined by making comparison between AVE and correlation squared of the constructs, where AVE is
greater that the square root of correlation, discriminant validity is established. From table2, all the squared
correlations have values which ranged from 0.334 to 0.706 while AVE has values as high as above 0.9 (Table
3), based on this, the output of this test indicates that there is sufficient discriminant validity.

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Code</th>
<th>Factor Loadings</th>
<th>Cronbach Alpha</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Green Knowledge</td>
<td>TPGK2</td>
<td>0.889</td>
<td>0.84</td>
<td>0.922</td>
</tr>
<tr>
<td></td>
<td>TPGK4</td>
<td>0.797</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Perceived Value</td>
<td>TPV1</td>
<td>0.711</td>
<td>0.885</td>
<td>0.908</td>
</tr>
<tr>
<td></td>
<td>TPV2</td>
<td>0.865</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TPV3</td>
<td>0.742</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government Regulations</td>
<td>TGR4</td>
<td>0.811</td>
<td>0.807</td>
<td>0.927</td>
</tr>
<tr>
<td></td>
<td>TGR5</td>
<td>0.858</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Price Sensitivity</td>
<td>TGPS2</td>
<td>0.608</td>
<td>0.792</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>TGPS3</td>
<td>0.839</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Trust</td>
<td>TGT4</td>
<td>0.745</td>
<td>0.897</td>
<td>0.913</td>
</tr>
<tr>
<td></td>
<td>TGT6</td>
<td>0.783</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Behavioural Control</td>
<td>TPBC1</td>
<td>0.744</td>
<td>0.781</td>
<td>0.905</td>
</tr>
<tr>
<td></td>
<td>TPBC3</td>
<td>0.649</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Purchase Intention</td>
<td>TGP11</td>
<td>0.816</td>
<td>0.904</td>
<td>0.922</td>
</tr>
<tr>
<td></td>
<td>TGP15</td>
<td>0.645</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Factor loadings ranging from above 0.06 to 0.80, indicating components converged satisfactory. Likewise,
composite reliability is above 0.9 which is well above the criterion of above 0.50 (Fornel & Larcker, 1981; Hair
et al., 2010). Measures for this study have attained the desired level of convergence validity to measure
constructs under study.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Standardized Regression Estimate</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>GPST --&gt; GPI</td>
<td>-0.055</td>
<td>-0.592</td>
</tr>
<tr>
<td>H2</td>
<td>PGKN --&gt; GPI</td>
<td>0.263</td>
<td>3.498</td>
</tr>
<tr>
<td>H3</td>
<td>GTST --&gt; GPI</td>
<td>-0.172</td>
<td>-1.204</td>
</tr>
<tr>
<td>H4</td>
<td>GRN --&gt; GPI</td>
<td>0.07</td>
<td>0.886</td>
</tr>
<tr>
<td>H5</td>
<td>PBCL --&gt; GPI</td>
<td>0.491</td>
<td>2.703</td>
</tr>
<tr>
<td>H6</td>
<td>GPV --&gt; GPI</td>
<td>0.281</td>
<td>2.231</td>
</tr>
<tr>
<td>H7</td>
<td>GPST --&gt; GPV</td>
<td>0.014</td>
<td>0.183</td>
</tr>
<tr>
<td>H8</td>
<td>PBCL --&gt; GPV</td>
<td>0.327</td>
<td>2.455</td>
</tr>
<tr>
<td>H9</td>
<td>GTST --&gt; GPV</td>
<td>0.297</td>
<td>2.57</td>
</tr>
<tr>
<td>H10</td>
<td>GRN --&gt; GPV</td>
<td>0.242</td>
<td>3.767</td>
</tr>
<tr>
<td>H11</td>
<td>PGKN --&gt; GPV</td>
<td>0.11</td>
<td>1.765</td>
</tr>
</tbody>
</table>
3.3.4 Goodness of Fit Measures (GOF)

The findings in AMOS indicates the following; the model achieved fit in the first place with these values (p-value=.189); CMINDF ratio <2 (1.138); GFI >.95, (.974) TLI >.95 (.995) and RMSEA <.08 (.017). This implies that the model has a good fit. The standardized regression estimates depicts that seven direct paths have positive and significant relationship with green purchase intention and green perceived value; three of the paths are directly related to green purchase intention while the remaining four relate to perceived green value. Thus the following hypotheses were supported (H2, H5, H6, H7, H8, H9 & H11). They are perceived green knowledge to green purchase intention (β=0.263; CR, 3.498; p<0.001) perceived behavioural control to green purchase intention (β=0.491; CR, 2.703; p<0.007). Similarly, green perceived value to green purchase intention (β=0.281; CR, 2.231; p<0.026); Furthermore, perceived behavioural control to green perceived value (β=0.327; CR, 2.455; p<0.014) green trust to green perceived value (β=0.297; CR, 2.570; p<0.01), government regulations to green perceived value (β=0.242; CR, 3.767; p<0.001), and perceived green knowledge (β=0.110; 1.765; p<0.078). However, four of the paths became insignificant; these are H1, H3, H4 and H6, hence they are rejected.
variables were ascertained. In the case where the relationship between
s require a more effective strategy to enhance trust of the
Wu et al
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also, perceived behavioural control
l worthiness of
he other hand, it does not mediate between green price sensitivity and green purchase
policies
Importantly, the outcome of this study implies a thinking of organization’ marketing strategies and government
attracting consumers to environmentally safe produc
rs to understand how sensitive
consumers are
particularly in the context of this study. Regardless of the fac
pinpoint those variables which influence consumer’s proactive performance in the marketplace in general and
Marketers should come to the truth of knowing that successful marketing lies inherently in their ability to
pinpoint those variables which influence consumer’s proactive performance in the marketplace in general and
particularly in the context of this study. Regardless of the fact that most consumers these days read about
products on the labels, they still feel the marketer has a role to communicate the green attributes of the product;
this is because consumers lack self confidence in their effectiveness to assess the environmental worthiness of
the product (Kim, 2015). Hence, instead of merely advertising to inform the public of the availability of green
products, marketers should go a step further to emphasize the environmental features of the product. It is
pertinent for marketers to understand how sensitive consumers are to the price of green products; high price will
serve as one of the barriers to purchase green products. A low pricing strategy will be the best alternative in
attracting consumers to environmentally safe products.

Importantly, the outcome of this study implies a thinking of organization’ marketing strategies and government
policies in Nigeria; especially as the output revealed that green trust and green price sensitivity did not have any
influence green purchase intention nor did green perceived value exert mediating influence on green price
sensitivity. In addition, price sensitivity, green perceived value, perceived green knowledge indirectly influence
intention through mediation of green trust. Managers require a more effective strategy to enhance trust of the
consumers towards green.

3.3.5 Discussion on Mediation Result
The mediation steps established by Baron and Kenny (1986) and subsequently elaborated upon by (Hair, Black,
Babin & Anderson, 2010) was applied to assess the mediation effects. Before carrying out the mediation test,
first the significant relationship among variables were ascertained. In the case where the relationship between
the predictor and the criterion variable is significant and remains the same even when the mediating variable
was included in the model as additional construct, there is mediation; but if it is reduced and is still significant,
with the addition of the mediator, then there is partial mediation. However, if the beta value reduced to the point of
non- significant then there is full mediation. Based on this, the finding reveals that green perceived value
partially mediates between perceived behavioural control and green purchase intention. Additionally, it exerts
full mediating effects between green trust, perceived green knowledge, government regulations and green
purchase intention. On the other hand, it does not mediate between green price sensitivity and green purchase
intention.

4. DISCUSSION AND CONCLUSION
The finding of this research has empirically proved that perceived green knowledge influenced green purchase
intention, supports the findings in (Wu et al., 2013; Azizan & Suki, 2013). Also, perceived behavioural control
predicts green purchase intention, this toed the paths of (Tan, 2013; Lien, Huang & Chang, 2012; Kim & Chung
2011). In the same vein, green perceived value is significantly related to green purchase intention, past studies
of (Kong, Harun, Sulong & Lily, 2014; Delghanan & Bakhshandeh, 2014; Lian & Chaipoopirutana, 2014) are in
congruence with this result. Furthermore, green perceived value has substantially demonstrated its significant
influences on green purchase intention through its mediating effects between perceived behavioural control,
green trust, perceived green knowledge, government regulations and green purchase intention.

Marketers should come to the truth of knowing that successful marketing lies inherently in their ability to

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