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Confident in Africa's Future

# **19TH INTERNATIONAL ACADEMY OF AFRICAN BUSINESS AND DEVELOPMENT CONFERENCE PROCEEDINGS**

## **Sustainable African Development and Self Reliance: Building Economic Bridges in a Multi-Polar World**

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Edited by

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# **Drivers of sustainable consumption in a developing sub-saharan african setting: perspective of nigerian academic staff.**

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Sustainable consumption behaviour is silently becoming a pivotal phenomenon in Nigeria, just like other developing countries in Sub-Saharan Africa (SSA) which arguably is affecting purchase patterns. Despite the amazing growing interest in sustainable consumption, minimal research attention has been exerted to deepen and broaden understanding concerning those factors that trigger sustainable consumption consciousness in a developing economy where sustainable consumption behaviour is still nascent though evolving rapidly. Questionnaire was utilised to collect data from a sample of 3495 academic staff randomly drawn from nine universities in southern Nigeria. Structural Equation Modelling (SEM) technique was used to analyse data relating to hypothesized relationships in the model. Convergent validity was checked whereas discriminant validity was assessed using Fornell-Larcker Criterion Analysis. Also, reliability check was conducted to determine the internal consistency of the measurement items. Findings clearly show environmental concern and educational level as primary drivers; also, health concern, income status, and quality insignificantly influence sustainable consumption. The Sustainable Consumption Drivers Model was also developed based on the findings and the potential policy and managerial implications were discussed; recommendations on how to advance sustainable consumption rapidly including possible areas for further studies were highlighted.

Keywords: Sub-Saharan Africa, Nigeria, sustainable consumption, Academic Staff.

## **Introduction**

The earth is a victim of man. The global human family and the world systems are increasingly destroying the earth through their unsustainable consumption patterns. However, the need to build a sustainable global consumer family is increasingly gaining momentum across economies and demographics especially in developing African economies where sustainable consumption behaviour is still evolving and research evidence is relatively scarce. Arguably, the paucity of sustainable consumption research from developing countries may be partially linked to the favourable ecological footprint presently enjoyed by most developing nations of

the world, particularly African countries (Global Footprint Network, 2010). For instance, Global Footprint Network in its 2010 Ecological Footprint Atlas report indicate that the ecological remainder in global hectares per person (gha/pers) for Sudan is 0.69 gha/pers, Guinea is 1.18 gha/pers, and Gabon is 27.88 gha/pers. Global Footprint Network argues that with a population of over 147.72 million people, Nigerian's ecological footprint in global hectares per capital is put at 1.44 gha/per person. However, the bio-capacity in global hectares per person is 1.12 gha/per. Hence the ecological remainder for Nigeria is -0.32. Although this is low when compared to USA whose ecological footprint stands at -8.00; nonetheless, Nigeria is an ecologically debtor country. This favourable ecological footprint among developing nations seems to be cultivating sustainable consumption complacency, inaction and leapfrogging culminating in unsustainable consumption patterns among its citizens including Nigerians. In contrast, most developed countries are heavy ecology debtor nations with high unfavourable ecological footprint. For instance, United Arab Emirate is -9.83 gha/pers, United States is -4.13 gha/pers, and Germany is -3.16 gha/pers.

It may be construed that developing nations' contributions towards global ecological threat is minimal compared with that of developed countries of the West and industrialized Asian countries. This observation appears consistent with the remarks of European Commission (as cited in Jones, Hiller, & Comfort, 2014) regarding European environment. Jones et al. warned that "Europe's environmental footprint is one of the largest on the planet and argues that if the rest of the world lived like Europeans, it would require the resources of more than two and a half earths to support all of us." This landmark comment reinforces Ukenna and Nkamnebe (2016) who assert that "52% of nations in the Sub-Saharan Africa (SSA) and indeed Africa are sustainability creditor nations while the few sustainability debtor nations in the SSA have very low ecological debt status compared to highly industrialised Western and Asian nations".

Nonetheless, there is growing body of knowledge relating to environmental challenges stemming from the consumption lifestyle of the rich (United Nations Environmental Programme [UNEP], 2010). The import being a somewhat neglect of research that target the consumption patterns of the poor, who dominate the bottom of the pyramid (Prahalad, 2005). This neglect seems to under-estimate the potential sustainability implications of this group characterized by their high population and consumption to meet their basic needs. Perhaps, globally sustainable consumption issues seem to be based on country-development-taxonomy. Most of the world's poor and rapidly emerging middle-income class that often engages in compulsive consumption as means of redefining their status live largely in developing countries; Nigeria's quest for rapid development requires smart inclusion and gradual yet consistent emphasis on responsible consumption (Ukenna & Nkamnebe, 2016).

In attempt to manage the overall global ecological challenge, country-based and context-specific solutions that are informed by research have been advocated (UNEP, 2007). This clarion call applies to both ecological debtor and ecologically creditor nations of the world. Again, literature is replete with conflicting findings and somewhat unresolved debate on drivers of sustainable consumption especially among different countries with favourable ecological status (Aertsens et al, 2009; Bulut, Kokalan, and Dogan, 2017). Relatedly, there is dearth of country-specific sustainability research particularly from Nigeria which is perceived as the arrowhead of SSA economy with somewhat similar social-cultural characteristics with other members of the SSAs; hence, researches conducted in Nigeria can fairly proxy sustainable consumption behaviour in SSA. Importantly, previous research has undermined the survey of university academic staff globally recognised as "knowledge creator and innovation-dissemination" agent. This, therefore, calls for further research using university academic staff to deepen and broaden understanding and probably sieve the inconsistencies that characterise previous studies on sustainable consumption using Nigeria-based data. Taken together, this paper seeks to: (1) unravel those factors that drive sustainable consumption behaviour in a typical developing economy such as Nigeria and (2) develop a sustainability consumption model to guide policy makers and marketing management.



## Literature and Hypotheses development

Studies and reports on drivers of sustainable consumption have been country-specific with contradictory results. Therefore there are no universally acceptable drivers of sustainable consumption. A number of extant studies corroborate this assertion. A study by Young et al (2010) in the United Kingdom (UK) explored the micro-purchase process for green consumers in relation to consumer technology products, reported green labels, specialist information, wide availability and feelings of guilt are the key facilitators of sustainable consumption within the consumer technology product domain.

Bulut, Kokalan, and Dogan (2017) explored the relationship between consumers' sustainable consumption behavior and both gender and generation-related individual differences in a sample of Turkish consumers. The study reported an association between gender and sustainable consumption behavior, thus indicating that women showed a higher level of sustainable consumption behavior both in overall behavior and tendency to reuse products. Put differently, Bulut, Kokalan, and Dogan et al. revealed the potency of gender as driver of sustainable consumption. Confirming the country-based divergence on what motivates sustainable consumption, Wang (2016) explored how individual-level environmental attitudes and national-level environmental governance predicts individual sustainable consumption across 31 countries. Wang's study revealed that three factors of environmental attitude - environmental concern, environmental efficacy, and perceived environmental- are common drivers of sustainable consumption behavior at individual level within the countries examined. However, results differ for countries along income levels for environmental governance being driver of sustainable consumption behavior. For instance, environmental governance is found to have different impacts in high-income compared with other countries analyzed. The differences on country bases further suggest a country-specific study.

### *Environmental Concern (EC)/Perceived Consumer Effectiveness (PCE):*

The debate in favour of PCE as a driver of sustainable consumption began in 1979 when Henion and Wislon (cited in Ellen, Wiener, & Cobb-Walgren, 1991) averred that the challenge for sustainability marketers would not be to encourage everyone in the segment to engage in some pro-ecological activity but to identify the specific attitudinal and personality traits associated with a consumer's willingness to engage in a specific class of action and then link those attitudes and behavior through targeted messages. They further argued that sustainability marketers must get people who are aware of environmental problems and who place a high priority on solving these problems on their concerns. The coinage and initial usage of the PCE term is credited to Kinnear, Taylor, and Ahmed (cited in Ellen, Wiener, & Cobb-Walgren, 1991), which is "conceptualized and measured as the extent to which the consumer believes that the efforts of an individual acting alone can make a difference." Put differently, it is basically a measure of an individual belief that he or she can have an effect on environmental issues and Swebker and Cornwell (1991) also named it locus of control.

The term "environmental concern" (Kinnear et al. 1974; Tognacciet al. 1972; Zimmer et al. 1994) and "perceived environmental effectiveness" (Ellen et al. 1991) are used interchangeably in literature. Consequently, a number of studies have posited environmental concern as key motivator of sustainable consumption. For instance, plethora of studies (Doran, 2009; Ferran & Grunert, 2007) all reported environmental concern as key motivator of sustainable consumption. It is arguable whether individuals in Nigeria, a typical SSA can be driven by PCE/EC in a region largely beset with the struggle to meet basic needs. Hence we formulate the hypothesis:

H1: Environmental concern (EC) is a significant driver of sustainability intention/attitude (IA) among university academic staff in Nigeria.

### *Health Concern (HC)*

Health issues are intensely receiving attention in global sustainable development debate (World Health Organization [WHO], 2002). This is, perhaps, due to the health-environment-  
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development nexus at macro levels. Hence it has been advocated that the human family is entitled to a healthy and productive life in harmony with nature (WHO, 2002). Chapter 6, Agenda 21, emphasizes the fundamental commitment in sustainable development geared towards “protecting and promoting human health”. The foregoing are strong indicators of policy drives at enthrone a global health anchored on sustainable development agenda. The worry is: what are individuals doing to respond, embrace, and drive sustainable health concerns? Unfortunately the pursuit of a healthy life style that is in harmony with nature has been a quagmire, if not a mirage at individual and household levels in Nigerian context. Recently, sustainable food consumption which mirrors health concern and quest for sustainable lifestyle that is harmonious with nature is being noticed. Interestingly, health-poverty-development nexus has taken a different shift in extant debate (Ukenna&Nkamnebe, 2016; WHO, 2002; Reisch, Eberle, & Lorek, 2013). Health is far more central to poverty reduction than previously thought, and that realization is now beginning to shape governments' and global policies (WHO, 2002). It has been known for years that people who are poor are more likely to get sick. Indeed, there is a growing body of knowledge about how ill-health creates and perpetuates poverty, triggering a vicious cycle which hampers economic and social development and contributes to unsustainable resource depletion and environmental degradation. Evidence suggests that health gains trigger economic growth; if the benefits of that growth are equitably distributed, it can logically lead to poverty reduction (WHO, 2002). Given this line of thought, health concern as a driver of sustainable consumption in a typical developing country SSA (like Nigeria) is unclear and not unidirectional. Hence the researchers hypothesise that:

H2: Health concern (HC) is a significant driver of sustainability intention/attitude (IA) among university academic staff in Nigeria.

#### *Income Status (IS)*

There is a growing body of empirical evidence corroborating a steady rise of the middle class in Africa, which is a tacit indicator of poverty reduction (AfDB, 2010). Projections suggest that by 2030 much of Africa will have attained lower and middle class majorities, and that Ethiopia, Nigeria and South Africa are expected to provide the largest number of new middle class (AfDB, 2010).

Taken together, the foregoing evidence of growing middle class in the SSA, though more of “floating-middle-class” typology (AfDB, 2010), forcefully demonstrates a rising income status with a potential for sustainable consumption behaviour. Whether the growing purchasing power/income status of the burgeoning middle class in the SSA will drive the purchase of sustainable products is somewhat still debatable. The potency of the income status construct at predicting sustainable lifestyle is well established in mainstream sustainability debate, because it is a key denominator of the willingness-to-buy (WTB) sustainable products (Morgan and Birthwile, 2009).

Straughan and Roberts (1999) noted that “income is generally thought to be positively related to environmental sensitivity.” They posited that most common justification for this belief is that individuals can, at higher income levels, bear the marginal increase in costs associated with supporting green causes and favouring green product offerings. A number of studies (Zimmer et al., 1994; Straughan and Roberst, 1999) have addressed the role of income as a facilitator of sustainable consumption behaviour. A plethora of previous studies explored developed Western context that is historically characterized by a robust high middle class; they tend to exhibit higher WTP sustainable products regardless of the premium prices for sustainable products. This maybe debatable for the developing SSA context characterized by a daisy and floating growing middle class that are likely to demonstrate weak WTP for sustainable products. Sequel to this line of debate, we formulate the following hypothesis:

H3: Income status (IS) is a significant driver of sustainability intention (IA) among university academic staff in Nigeria.



### *Educational Level (EL)*

Strong nexus seems to exist between knowledge and behavioural change. Though a true change should be organic; however, knowledge is the compass for organic behavioural change. There is a common dogma within religious cycles that the greatest enemy of the human family is ignorance (Munroe, 2002). Education, or better still, sustainability education (Ukenna and Nkamnebe, 2016) has been described as a potent determiner of future sustainable lifestyle in Nigeria SSA.

Studies (Schwartz and Miller, 1991; Zimmer et al., 1994) have linked education to sustainable consumption behaviour. The findings regarding education as a predictor of sustainable consumption has been fairly consistent across studies (Straughan & Robert, 1999; Aaker & Bagozzi, 1982; Roberts, 1996). Notwithstanding, Samdahl and Robertson (1989) report that education was negatively correlated with sustainable consumption behaviour. Theoretically, education is envisioned as an invaluable asset capable of redefining behaviour including sustainable consumption behaviour. This is even more obvious in nation that has huge and rapidly growing youth population desperately hungry for Western education in order to transform the economy and/or behaviour of man. Interestingly, United Nations (2015) reports that in the past two decades Sub-Saharan Africa has achieved a large increase in youth literacy. The sustainability content of the educational system of Nigeria SSA towards driving sustainable consumption is highly debatable. On the basis of this narration, we hypothesize that:

H4: Educational Level (EL) is a significant driver of sustainability intention/attitude (IA) among university academic staff in Nigeria.

### *Quality/Trust (QT)*

A number of studies have hypothesized a relationship between the quality of sustainable product and the intention to purchase. For instance, Hughner et al (2007) report that one of the key drivers of the purchase of organic food is the perceived high quality. The study by Padel and Foster (2005) found that “visual product quality and presentation” is one the key motivations for the purchase of organic food. Smith and Paladino (2010) and Mondelaers et al (2009) reported that product quality significantly influenced consumer green purchase intention and behavior. Further, perceived high quality of green products has a positive influence on consumer green purchase intention and behaviour (Aertsens et al., 2011; Mondelaers et al., 2009).

In a more recent study, Joshia and Rahmanb (2015) maintained that “functional and sustainable characteristics of products combined with high product quality positively influence consumers’ green purchase behaviour.” They also noted that “poor product attributes and inferior quality may result in a conflict between personal needs of consumers and their sense of environmental and social responsibility, which may further increase the inconsistency between attitude and actual buying actions.” However, perceived low quality of green products has a negative influence (Smith & Paladino, 2010). Traditionally, perceived product quality is a magnet that draws consumers closer to the product and facilitates initial trial. In developing economy like Nigeria where sustainable consumption behavior is in infancy, the ranking and consumption of sustainable products in relation to environment-hostile products currently dominant in most retail points is somewhat cloudy among academic staff in universities. Hence, the researchers conceptualise the following hypothesis:

H5: Quality/Trust (QT) of sustainable product is a significant facilitator of sustainability intention/attitude (IA) among university academic staff in Nigeria.

### *Intention/Attitude (IA) and Patterns of Sustainable Consumption*

Sustainable lifestyle or sustainable consumption behaviour generally manifest in four behavioural patterns – green purchase, recycle behaviour, waste management, and renewable energy (Ukenna&Nkamnebe, 2016; Joshia&Rahmanb, 2015; Smith &Paladino, 2010). Also, a number of sustainability marketing studies have empirically proven that sustainability intention is a predictor of sustainability consumption behaviour. For instance Staats (2003) and Egmond

and Bruel (2007) have shown empirically that intention is a strong predictor of behaviour within the sustainability context. The predictive power of behaviour by intention notwithstanding, sometimes intention may not translate into behaviour/action. This gap has given rise to what is referred to as intention-behaviour gap (Naidoo, 2010). Nonetheless, it is well established in extant sustainability literature that intention is a key mediator of behaviour. Thus we hypothesize as follows:

H6: Sustainability intention/attitude (IA) is a significant predictor of green purchase decision (PD) pattern of sustainability behaviour.

H7: Sustainability intention/attitude (IA) is a significant predictor of recycle behaviour (RB) pattern of sustainability behaviour.

H8: Sustainability intention/attitude (IA) is a significant predictor of renewable energy/transport (RET) pattern of sustainability behaviour.

H9: Sustainability intention/attitude (IA) is a significant predictor of waste management/reduction (WMR) pattern of sustainability behaviour.

## **Method**

In the absence of database for self-professed sustainable consumers and consistent with the study of De Pelsmacker, Janssens, Sterckx, and Mielants (2005), this study uses university academic staff of selected universities in Southern Nigeria as unit of analysis. Three universities were chosen from federal, state, and private universities in the three geo-political zones that make-up Southern Nigeria. The population for the study is 16,365. Sample size of 3495 was statistically determined using Slovin's formula; proportionate stratified random sampling technique was adopted to administer the questionnaire.

The choice of university staff was based on their perceived high awareness of sustainability issues and their higher educational level. In addition, as "credible" opinion leaders, they are somewhat in the position to diffuse and transmit sustainability innovation and information much rapidly and easily. This is because the university is where the seed of knowledge is planted and provoked by its teaching staff. Importantly, the university staff is arguably a suitable proxy in the absence of database of self-professed or self-acclaimed sustainable consumers in Nigeria and many other SSA countries where sustainability consumption behaviour is emergent.

With aid of recruited and trained research assistants across sampled institutions, 2,169 returned usable copies represent 62% of the total copies of questionnaire produced and administered was recorded. This rate is considered sufficiently high because it exceeds the minimum actual sample size needed for the use of SEM (Hair, Black, Babin, & Anderson, 2010).

The dependent variable (i.e., patterns) is measured using thirty-six items, which are broken down into four dimensions – renewable energy/transportation (six items); sustainability-driven purchase decision (thirteen items); recycle behaviour (seven items); and waste management behaviour (ten items). Most of the thirty-six pattern items and the intention items were drawn (with minor adjustments to reflect the Nigerian context) from the Ecologically Conscious Consumer Behaviour (ECCB) scale developed by Roberts (1996) and the Socially Responsible Consumption Behaviour (SRCB) scale developed by Antil (1984). All items were measured on a five-point likert-scale descriptors ranging from disagree to strongly agree. The instrument was subjected to reliability and validity test based on pilot-study using 92 university staff not included in the sample. This resulted in a Cronbach's alpha value of 0.836, indicating that the set of items shows good internal consistency.

## Analysis and Result

### The GoF and Explanation of target endogenous variable variance

The calculated global goodness of fit (GoF) is 0.47, which exceed the threshold of  $GoF > 0.36$  suggested by Wetzels, Odekerken-Schröder & van Oppen (2009). Thus, this study concludes that the research model has a good overall fit; thus providing support that the proposed theory fits reality. This demonstrated by the PLS-SEM path diagram below (Figure I) based on numbers in the circle and numbers on the arrow. The numbers in the circle show how much the variance of the latent variable is being explained by the other latent variables. Numbers on the arrow are the path coefficients. They explain how strong the effect of one variable is on another variable. The weight of different path coefficients enables us to rank their relative statistical importance.

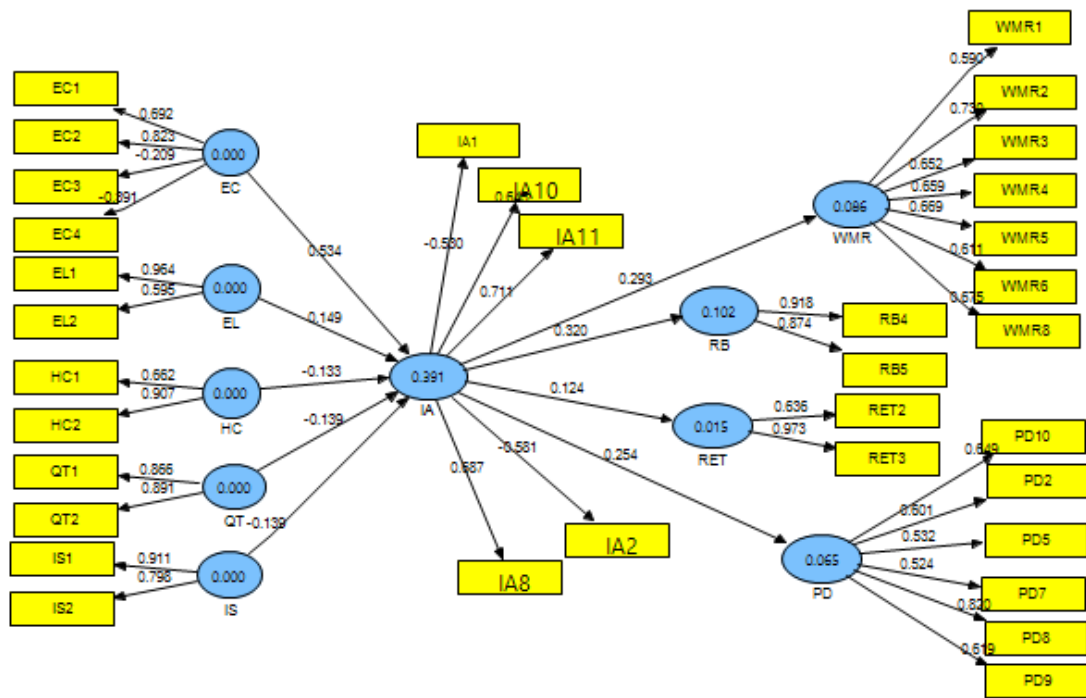


Fig. 1. SEM Result

The coefficient of determination,  $R^2$ , is 0.391 for the IA endogenous latent variable. This means that the five latent variables (EC, EL, HC, QT, and IS) somewhat moderately explain 39% of the variance in IA. Hence, other factors not included in the model explain 61% (i.e.  $100\% - 39\%$ ) of the variance in IA. Further, IA alone explains 9% (0.086), 10% (0.102), 2% (0.015) and 7% (0.065) of the variance in WMR, RB, RET, and PD respectively.

#### Inner model/structural model path coefficient sizes and significance

The inner model suggests that EC (0.534) has the strongest effect on IA with a path coefficient of 0.534. This is followed by EL (0.148), HC (-0.133), QT (-0.139), and IS (-0.139) respectively. The various effect levels of the independent variables on IA represent the rank order of importance of the drivers using their path coefficients on the arrow. The hypothesized path relationship between EC and IA is statistically significant because its standardized path coefficient (0.534) is greater than the 0.05 significant level. Hence we accept H1 that EC is predictor of IA. Similarly, the hypothesized path relationship between EL is statistically significant since the standardized path coefficient (0.148) is greater than the 0.05 significant level. Thus we accept H4 that EL is a predictor of IA. However, the hypothesized path relationship between HC, QT, and IS respectively and IA are not statistically significant due to

their low and/or negative standardized path coefficients (-0.133;-0.139; and -0.139 respectively) being below the significant level of 0.05. Hence we reject the H2, H5, and H3. Thus we conclude that EC and EL are the primary predictors of IA; however, HC, QT, and IS do not predict IA. This conclusion is temporal pending checking structural path significance in bootstrapping.

Further, using SPC, the hypothesized relationship between IA and WMR shows that there is statistically significant relationship since the linkage's SPC of 0.293 is greater than the significant level of 0.05. Hence H9 is accepted. Similarly, support is found for hypothesized relationships between IA and RB; IA and RET; and IA and PD since their SPC of 0.320, 0.124, and 0.254 respectively are all greater than the significant level of 0.05. Hence we accept H7, H8, and H6. As earlier noted, the decisions to accept or reject the hypothesized relationships above are all tentative since the SPC estimate alone cannot be used to draw conclusion. Accordingly, additional insight was provided using bootstrapping approach in SmartPLS. The two estimates were put side by side to enable the researchers make final conclusion.

#### *Outer model loadings and Indicator reliability*

It is essential to establish the reliability and validity of the latent variables to complete the examination of the structural model. Table 1 below shows the various reliability and validity of items. The indicators have individual indicator reliability (or factor loadings) values that are much larger than the minimum acceptable level of 0.7 (Pallant, 2007), thus establishing reliability and validity.

*Table 1: Accuracy and Adequacy Analysis*

Construct	R <sup>2</sup> Value	Cronbach's Alpha	C.R. Value	AVE Value	AVE Square	Factor Loading
RET	0.015	0.612	0.800	0.676	0.822	0.973
RB	0.102	0.757	0.891	0.803	0.896	0.918
WMR	0.086	0.783	0.841	0.531	0.728	0.730
PD	0.065	0.727	0.796	0.599	0.773	0.820
IA	0.391	0.653	0.625	0.602	0.775	0.711
HC	0.000	0.644	0.769	0.631	0.794	0.907
QT	0.000	0.706	0.871	0.772	0.878	0.891
IS	0.000	0.646	0.845	0.733	0.856	0.911
EC	0.000	0.746	0.640	0.538	0.733	0.891
EL	0.000	0.528	0.772	0.641	0.800	0.964

*Note:* C.R.: Composite Reliability; AVE: Average Variance Reliability

#### *Internal consistency reliability & Convergent validity*

Traditionally, "Cronbach's alpha" is used to measure internal consistency reliability in social science research, but it tends to provide a conservative measurement in PLS-SEM (Wong, 2013). Prior literature has suggested the use of "Composite Reliability" as a replacement (Bagozzi and Yi, 1988; Hair et al., 2012). From Table 1, such values are shown to be larger than 0.6, suggesting high levels of internal consistency reliability have been demonstrated among all ten reflective latent variables. To check convergent validity, each latent variable's Average Variance Extracted (AVE) is evaluated. Again from table 1, it is found that all of the AVE values are greater than the acceptable threshold of 0.5, so convergent validity is confirmed.

#### *Discriminant validity*

The inter-construct cross-loadings provide insight for the purpose of discriminant validity. Hair et al (2010) argue that the presence of high cross-loadings indicates a discriminant validity problem and, by extension, the SEM CFA fit would not be good. Using the cross loading threshold of 0.7 recommended by Hair et al, any cross loading above 0.7 threshold is considered

to be high and there is no distinctiveness between the two constructs. In the present study, the cross-loadings are low, with the highest being 0.567 (i.e. HC/EC cell). Others are 0.503 (i.e. WMR/PD cell) and 0.351 (i.e. QT/IS cell). Some of the cross-loadings of relationship between construct are negative. The negative and low cross loadings in the inter-construct correlation matrix is a clear indication of distinctiveness of constructs and absence of discriminant validity problem; thereby providing support for potential goodness fit of the model. Hence, each concept is significantly different.

Further, and consistent with SmartPLS, another approach for determining or corroborating the discriminant validity from the Inter-Construct Correlation Matrix is the use of the Fornell-Larcker Criterion Analysis. Fornell and Larcker (1981) (cited in Wong, 2013) suggest that the square root of AVE in each latent variable can be used to establish discriminant validity, if this value is larger than other correlation values among the latent variables. To do this, a table is created in which the square root of AVE is manually calculated and provided in Table 1. For example, the latent variable HC's AVE is found to be 0.631 (from Table 1) hence its square root becomes 0.794. This number is larger than the correlation values in the column of HC (0.209, -0.187, 0.068, 0.029, 0.123, 0.076, and 0.162) and also larger than those in the row of HC (0.567 and 0.166). Similar observation is also made for the latent variables EC, EL, IA, IS, PD, QT, RB, RET, and WMR. The result indicates that discriminant validity is well established.

#### *Checking Structural Path Significance in Bootstrapping*

After bootstrapping, Table 2 shows the result. We check the numbers in the "T-Statistics" column to see if the path coefficients of the inner model are significant or not. Using a two-tailed t-test with a significance level of 5%, the path coefficient will be significant if the T-statistics is larger than 1.96. It can be seen that six linkages are not significant, they are: "EL → IA"; "HC → IA"; "IS → IA"; "QT → IA"; "IA → RB"; and "IA → RET". However, three linkages are significant since their T-statistics value each is greater than 1.96 threshold. The linkages are: "EC → IA"; "IA → PD" and "IA → WMR".

Accordingly, we accept the hypothesis (H1) that environmental concern (HC) is a key predictor of sustainability intention/attitude (IA). Using the bootstrapping method, we do not find significant relationship between EL and IA; however, using the path coefficient approach, the relationship between EL and IA is statistically significant. Hence we accept H4. Also the hypothesis (H6) that sustainability driven intention/attitude (IA) is a predictor of green purchase decision (PD). Finally, the hypothesis (H9) that sustainability intention/attitude (IA) is a predictor of Waste Management/Reduction (WMR) also found statistical support and was accepted. Other hypothesized relationships did not find statistical support.

*Table 2: Results of Structural Equation Model Analysis*

Relationships	Hypothesis	Path Coefficient	T-statistics	Rejected/Supported
EC → IA	H <sub>1</sub>	0.787	2.805	Supported
EL → IA	H <sub>4</sub>	0.222	0.985	Not Supported
HC → IA	H <sub>2</sub>	-0.254	1.153	Not Supported
IS → IA	H <sub>3</sub>	-0.233	0.786	Not Supported
QT → IA	H <sub>5</sub>	0.256	0.889	Not Supported
IA → PD	H <sub>6</sub>	0.064	2.522	Supported
IA → RB	H <sub>7</sub>	0.176	1.489	Not Supported
IA → RET	H <sub>8</sub>	0.076	1.126	Not Supported
IA → WMR	H <sub>9</sub>	0.055	2.905	Supported

On the strength of the foregoing accepted hypotheses, the researchers posit the Sustainable Consumption Drivers Model shown in Figure 4 below:



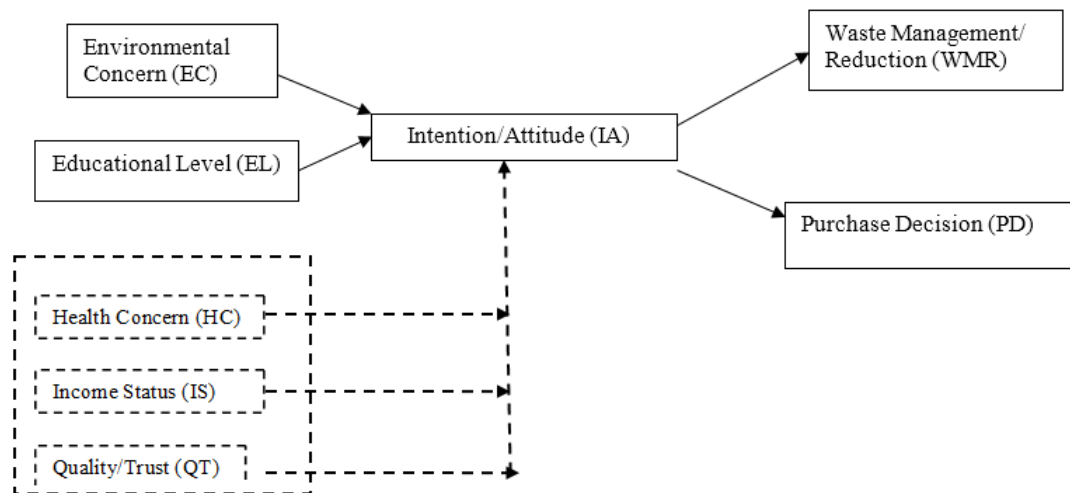


Figure 2: The Sustainable Consumption Drivers Model

Source: Authors' conceptualization

The posited Sustainable Consumption Drivers Model depicted in Figure 2 above argues that the key predictor of sustainability intention/attitude in Nigeria, and perhaps similar developing SSA context are Environmental concern (EC) and Educational Level (EL) and that sustainability intention/attitude is a critical mediator between the drivers of sustainable consumption and the patterns of sustainable consumption. Further there are two ways sustainability behaviour manifest, which are: waste management/reduction (WMR) and green purchased decision (PD). Figure 2 above further argues that Health Concern (HC), Income Status (IS), and Quality Trust (QT) may predict sustainability intention/attitude, but their predictive powers are weak and somewhat insignificant at the moment. The weakness in their predictive potency and the insignificance of their relationship with sustainability intention/attitude is depicted by the dotted upward arrows pointed towards intention/attitude.

## Discussion

Juxtaposed with trajectory of debate in extant mainstream literature, the finding that intention is a moderator of behaviour is consistent with Ajzen and Fishbein (1980) in their Theory of Planned Behaviour (which has been validated by many scholars in different context) maintained that behaviour predictors can be mediated by intention. This, perhaps, informed the conceptualization of the knowledge-attitude-practice (KAP) gap by Alcalay et al (2000) in social marketing that awareness relating to a subject, with a supportive attitude may not translate into actual behaviour. Guided by KAP, a number of studies (Peattie, 2001; McCarty et al, 2001; Devinney, Eckhardt & Bell, 2009) that included intention as mediating variable had shown that sustainability intention had not led to sustainability behaviour; hence, the KAP gap or attitude-behavior gap in sustainability. Although their finding is a departure from the present study in that no support is found for the predictive power of attitude towards behaviour. In other words, in their study, sustainability attitude is a weak predictor of sustainability behaviour. This, perhaps, explains why some studies (for example, Vermeir & Verbeke, 2006) outrightly did not include intention/attitude in their investigation.

The moderate predictive power of sustainability attitude on sustainability behaviour as unravelled by the present study sheds light on a number of sustainability-policy and strategy direction. For instance, since it is found that sustainability attitude moderately connect with sustainability behaviour, policy initiatives and strategies towards increasing sustainability attitude should dwell on increasing key drivers, which in turn will, to an extent, foster sustainability behaviour. The question that readily follows is: which facilitator should be



manipulated or reinforced to foster sustainability attitude? Symmetry was found for two key drivers constructs – environmental concern and educational level along the three stage analyses.

As indicated in the literature section, a plethora of scholarly works have explored environmental concern as a correlate of sustainability behavior. Although the finding of Straughan and Robert (1999) is a departure from the finding of the present study; however, the present finding is consistent with studies of Roberts (1995; 1996b); Roberts and Bacon, (1997); Van Liere and Dunlap, (1981) which all found a positive correlation between the two. Variety in the context within which studies were executed has been approximately responsible for the equivocal divergence in findings (Straughan and Robert, 1999). This divergence seems to lend credit to present study since findings in those contexts may not be true for the present context.

The connect between educational level and sustainability attitude is well established in mainstream sustainable consumption literature. For example, this linkage has been explored by Roberts and Bacon (1997); Zimmer et al. (1994); Straughan and Robert (1999). Similar to the views of Straughan and Robert (1999), the hypothesized relationship has been fairly consistent across these studies and, expectedly, many have reported positive correlation between education level and environmental attitude. Contrary to the present finding, Samdahl and Robertson (1989) found the opposite, that education was negatively correlated with environmental attitudes, and Kinnear et al. (1974) found no significant relationship.

It is important at this juncture to distinguish between educational level facilitator and eco-literacy or eco-knowledge. A form of similarity abound between sustainability knowledge (or eco-knowledge) and educational level as somewhat established in the present study. Educational level and sustainability knowledge are different sides of the same coin, in that they are both predictors of sustainability attitude (see Maloney and Ward, 1973; Vining and Ebreo, 1990; Chan, 1999; Amyx et al. 1994). This perspective has to be considered with caution since the study did not primarily explore sustainability knowledge with sustainability intention.

Nonetheless, the distinction is that educational level relates with the degree of an individual's academic qualification, however, eco-knowledge refers to an individual's level of sustainability awareness. It is helpful to recognise educational level as a precursor to eco-knowledge; hence, an individual primarily have to be educated before the propensity to understand sustainability related issues. Therefore, being educated is the starting point and a pathway towards fostering the appropriate sustainability attitude in the developing country context where the educational level is still embryonic.

## **Conclusion**

In broad terms, this study has demonstrated efforts towards bridging the sustainability attitude-behaviour gap within the sustainability domain by providing deeper insight. Specifically, this study has shown on the one hand that companies can engage the consumer and use facilitators to influence sustainable consumption and create business value. On the other hand, the study has demonstrated that government can foster sustainable consumption behavior by deepening key sustainability facilitators. In the main, this study concludes that the drivers of sustainable consumption can significantly influence the promotion of sustainability attitude, which, in turn, can trigger and sustain increased manifestation of sustainable consumption behaviour in Nigeria and, perhaps, other developing country within the SSA.

### **Implications and Recommendations**

We reported in this study that environmental concern is a key facilitator of sustainability intension. This seems to suggest that an individual must be convinced that his or her pro-environmental actions will be effective at fighting environmental issues (such as environmental degradation or wastes management challenge). This has implications for a variety of marketing activities. It suggests that environmental-based marketing efforts should be explicitly linked with beneficial outcomes. Simply claiming to be “green” is no longer enough. Instead,

marketers must show how consumers choosing green products are helping in the struggle to preserve the environment.

Since a nexus is found between educational level and sustainability intention, governments within the developing countries in the SSA, through policy initiatives, can consider greening university curriculum by introducing compulsory sustainability marketing courses at tertiary educational levels. This way, sustainability-responsible and sustainability-driven future corporate chieftains and households are built.

Pungently, this study underscores the need for speedy sustainability awareness and rapid sustainability information dissemination in Nigeria and indeed, the sub-saharan African context. This calls for active government involvement in this regard. Policy directive by relevant government agencies (such as ministry of environment and related parastatals) to increase sustainability educational programmes needs to be crafted and enforced urgently.

A National Sustainability Day (NSD) in most developing countries in Africa should be encourage and given necessary legislative backing. This is in addition to World's Earth day marked on every 22nd of April each year. Instituting the NSD will further foster sustainability awareness in the region.

Governments of the SSA region should raise prices of less sustainable products by raising their taxes and charges, while eliminating taxes for sustainable products. This can be effective at influencing a shift in consumer behaviour towards sustainability through changing purchasing patterns. It could be assumed that taxes are more efficient than regulations from an economic point of view and it gives more flexibility to households and firms to adapt. The implication is that government can use tax instrument to shift consumer product patronage and purchase decision.

## References

- Aertsens, J., Verbeke, W., Mondelaers, K., & Van Huylenbroeck, G. (2009). Personal determinants of organic food consumption: A review. *British Food Journal*, 111 (10), 1140-1167.
- Ainoa, J., Kaskela, A., Lahti, L., Saarikoski, N., Sivunen, A., Storgårds, J., & Zhang, H. (2009). Future of Living. In Neuvo, Y., & Ylönen, S. (eds.), *Bit Bang - Rays to the Future*. Helsinki University of Technology (TKK), MIDE, Helsinki University Print, Helsinki, Finland, 174-204. ISBN 978-952-248-078-1.
- Ajzen, I. & Fishbein, M. (2002). *Understanding attitudes and predicting social behaviour*. New Jersey: Prentice Hall.
- Ajzen, I. (1988). From intentions to actions: A theory of planned behaviour. In: J. Kuhl and Beckmann (Eds.), *Action-Control: From cognition to behaviour*. Heidelberg: Springer.
- Alexander, S. (2012). Degrowth implies voluntary simplicity: overcoming barriers to sustainable consumption, Simplicity Institute. Available at: <http://simplicityinstitute.org/wp-content/uploads/2011/04/OvercomingBarrierstoSustainableConsumptionReport-12b.pdf>, Downloaded on June 20 2015
- Allan, J.L. (2008). The intention-behaviour gap – its all under control (executive control, *The European Health Psychologist*, vol 10, pp. 62-64.
- Armitage, C, & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: a Meta analytic Review. *British Journal of Social Psychology*, 40, 471-499.
- Arvola, A., Vassalo, M., Dean, M., & Lampila, P. (2008). Predicting intentions to purchase organic food: The role of affective and moral attitude in the theory of planned behaviour. *Appetite*, 50, 443-454.

- Blunch, N. J. (2013). *Introduction to Structural Equation Modeling Using IBM SPSS and AMOS* (2nd ed.). London: Sage Publications Ltd.
- Carrigan, M. & Attalla, A. (2001). The Myth of the ethical consumer – do ethics matter in purchase behaviour? *Journal of Consumer Marketing*, 18(7), 560-577.
- Carrigan, Marylyn, and Attalla, Ahmad, (2001), The Myth of the Ethical Consumers – Do Ethics Matter in Purchase Behaviour?, *Journal of Consumer Marketing*, 18, 7, pp. 560-577.
- Chan, K. (1999). Market segmentation of green consumers in Hong Kong, *Journal of International Consumer Marketing*, 12(2), 7-24.
- CORPUS. (2013). Enabling sustainable consumption: making better use of research evidence in policy-making, Policy Brief, CORPUS Consortium, available at: <http://www.scp-knowledge.eu/sites/default/files/knowledge/attachments/CORPUS%20Policy%20Brief.pdf>, downloaded at June 20 2015.
- De Pelsmacker, P., Driesen, L., & Rayp, G. (2005). Do consumers care about ethics? Willingness to pay for fair-trade coffee. *Journal of Consumer Affairs*, 39(2), 363-385.
- De Pelsmacker, P., Janssens, W., Sterckx, E., & Mielants, C. (2005). Consumer preferences for the marketing of ethically labelled coffee. *International Marketing Review*, 22(5), 512-530.
- East, R (1997). *Consumer Behaviour: advances and applications in marketing*. London: Prentice-Hall.