

# Sustainable Consumption Behavior in Sub-Saharan Africa: A Conceptual Framework

By

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*This paper develops a conceptual framework for investigating the adoption patterns, inhibitors, and facilitators (PIF) of sustainable consumption in sub-Saharan African (SSA) settings. Literature evidence shows paucity of empirical studies on sustainable consumption from SSA, which partly explains lack of suitable conceptual framework to guide research in this area. Also, the existing frameworks, which were developed outside SSA may not be suitable for constructing sustainable consumption behavior in SSA because of its peculiarities. The key significance of this article is the potential of providing future researchers in this area with a framework to guide and manage their studies. As a conceptual article, insight was drawn from a plethora of scholarly articles in the domain of sustainable consumption and related areas. The framework is built on four key constructs—adoption patterns, inhibitors, facilitators (PIF), and intention. As a guide for studies from the SSA, the article includes an empirical section, which provides preliminary empirical validation for the proposed PIF conceptual framework based on a pilot test. The result from the pilot study, using structural equation modeling (SEM), led to positing the PIF Sustainable Consumption model, thus giving support for the PIF Conceptual Framework, which this article puts forward. In addition, the proposed PIF conceptual framework is capable of providing insight for crafting sustainability-related policies. © 2016 Wiley Periodicals, Inc.*

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## Introduction

There is an intensely rising debate about how sustainable development can be achieved since the 1987 Brundtland Report on *Our Common Future*. The debate is largely skewed in the direction on how to transform human consumption behavior toward sustainability. Hopwood, Mellor, and O'Brien (2005) suggested three approaches to achieving sustainability transformation: *status quo oriented*, *reform oriented*, and *transformation oriented*. Whichever approach is considered appropriate either at micro or macro levels, research-based evidence is imperative to inform stakeholders in their vanguard toward consumption behavior transformation. Sustainability is a phenomenon that requires an eclectic panacea; accordingly, the academia is to galvanize cutting-edge sustainable consumption research to provide informed insight for policy prescription and business strategy development to achieve sustainability transformation (Hassan, 2001).

To guide the increasing research in sustainable consumption, a number of *integrative* conceptual frameworks over *internalistic* and *externalistic* frameworks (Jackson, 2005) are gaining popularity and validation in the sustainable research community. For instance, the Activity-Behavior-Context (ABC) model, the Motivation-Opportunity-Ability (MOA) model, and the Green Consumer Purchase (GCP) model are all integrative sustainable consumption conceptual frameworks that have gained wide acceptance and validation especially in the advanced economies where they are conceptualized (Stern, 2000; Vermeir & Verbeke, 2006; Young, Hwang, McDonald, & Oates, 2010). These research frameworks have little utility in the sub-Saharan African region (SSA) and other developing country context (Nkamnebe, 2011) as well as in some parts of the western region where they were developed. It is arguable that their limited utility in the SSA region may be due to the social, economic, and cultural peculiarities of the region.

Nonetheless, in response to the increasing emphasis on the sustainability issue all over the world and increasing concern for research that is sustainability oriented, the need to develop context-specific framework for engaging in such research has become urgent and important. The urgency and expediency has become more pressing in regions such as SSA with paucity of research in the area of sustainable consumption (United States Agency for International Development [USAID], 2013). The case for such framework in the SSA context is hinged on the peculiarities of the SSA, with its concomitant sustainability implications. What then are the justifications

or rationale for positing fresh conceptual framework to guide future sustainability researches emerging from the SSA? Or what are the peculiarities of the SSA that lends support for a need for special framework to guide future sustainable consumption studies from the region?

First, the previous conceptual frameworks—such as the Attitude Behavior Context (ABC), Motivation Opportunity Ability (MOA), and Green Consumer Purchase (GCP)—were all conceptualized in the Western culture where most countries are sustainability debtor nations, with very high sustainability debt status (see Global Footprint Network, 2010). Hence, the efficacy of such frameworks for the SSA context is somewhat doubtful because over 52% of nations in the 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 industrialized Western and Asian nations (see Global Footprint Network, 2010). This suggests that current cultural practices and consumption patterns within the SSA seem to be consistent with sustainability principles. This strongly suggests that a conceptual framework on sustainable consumption that captures this peculiarity of the region, with a view to maintaining its favorable sustainability status, is thoughtful and timely; thus, potentially providing a more practical guide for emerging researches from the region.

Second, population growth, with its concomitant sustainability consumption implications, is among the critical global challenges that triggered the sustainability development agenda. Belz and Peattie (2009) warned that the population of the least developed countries, where most SSAs are categorized, is expected to more than double between 2005 and 2050, rising from approximately 760 million to 1.7 billion. Currently, the estimated population of the SSA is put at 9.49 million people and has been estimated to hit 1.368 billion in 2030 (United Nations Department of Economic and Social Affairs [UNDESA], 2015). In addition, the Population Division of the UNDESA (2015), estimated that Nigeria, a key member of the SSA, which is presently the seventh most populous country in the world will take the third place in the list of the most populous countries by 2050. Given the acknowledged relationship between population and the sustainability challenge, the SSA can be argued to be a hotspot for sustainability research. The import being that a conceptual framework that will guide researches that are tailored at sustaining or improving on the consumption pattern of the growing SSA population is vital.

Third, the SSA, like any other developing region of the world, needs rapid consumption to trigger development in order to “catch-up” with developed parts of

the world (United Nations Development Programme [UNDP], 2013). The policy challenge of fostering rapid consumption in a sustainable manner or the challenge of promoting sustainable consumption as a prerequisite for sustainable economic development in the SSA yearns for cutting-edge research that will be guided by a context-specific conceptual framework. Arguably, since consumption drives production, some researchers (Naidoo, 2010) have argued that while the poorest countries are still within the ecological carrying capacity of the planet, their low human development levels call for urgent and rapid development through increased consumption in a sustainable manner. Consequentially, this call for cutting-edge research that will provide insight that will help to strike a delicate balance between stimulating development through increased consumption and promoting sustainability principles in the region. Similarly, Honkasalo (2011) also observed that “the greatest challenge globally is to eliminate poverty in developing countries in ways that enable global environmental problems to be simultaneously resolved, while also allowing economies to be scaled in line with the capacities of ecosystem services” (p. 1905).

In addition, there is evidence of a growing urban middle class in the SSA and their adoption of western consumption patterns which has environmental consequences. This is aptly captured in the *Human Development Report 2013* that reports a *rising South* with favorable shifts in geopolitical shifts (UNDP, 2013). Therefore, in the era of globalization, environmental sustainability issues are so pervasive that it affects everybody (the rich and the poor) in any country of the world. Nkamnebe (2012) argues rather forcefully that sustainable consumption challenges transverse nations irrespective of their stage of development. Hence, the SSA researchers should provide their own homegrown research-based solution to be guided by homegrown adaptive conceptual framework.

Though developing countries (SSA inclusive) have a somewhat favorable ecological footprint at the moment, the general consensus is that sustainable consumption research in the region has become urgent and legitimate (Nkamnebe, 2010). Such studies would help in furthering what is known about the patterns, inhibitors, and facilitators (PIF) of sustainable consumption in such settings like the SSA. Given this clarion call for research on the subject from SSA countries, it is thoughtful and timely to provide a conceptual platform to guide such studies. Regrettably, despite the clear case for sustainable consumption research in such context as the SSA, framework for implementing such research is still very limited (Honkasalo, 2011). Accordingly, this paper seeks to propose an integrative conceptual framework that will

explain the patterns, inhibitors, and facilitators (PIF) of sustainable consumption behavior in the SSA context. Without doubt, the development of such framework has the potential of providing future researchers in the PIF research domain with an array of ideas to guide their studies in the area. In addition, the proposed conceptual framework can provide an insight for policy prescription at macro and micro levels.

## Review of Relevant Literature

What strand of debate do the proposed conceptual framework belong to and why? This article joins the *integrative* perspective to the study of sustainable consumption. Generally, there are three approaches to the study of sustainable consumption, which informed the categorization of theorizations and model conceptualizations in sustainable consumption. A theoretical thread can be identified in the literature based on two traditional approaches to the study of sustainable consumption behavior—*internalistic* (or *internal*) (Arbuthnot, 1974; De Young, 1986, 1990; Pardini & Katzev, 1983), and *externalistic* (or *external*) approach (Ingram & Geller, 1975; Jacobs & Bailey, 1982; Witmer & Geller, 1976). Interestingly, a recent approach to the study of sustainable consumption behavior is the *integrative* approach. Model conceptualization and conceptual frameworks are guided and anchored on one of the approach typologies.

Tucker, Murney, and Lamont (1998) noted that the *internal* or *internalistic* approach model is seen mainly as a function of processes and characteristics, which are conceived as being *internal* to the individual, such as attitudes, values, habits, and personal norms. The *external* or *externalistic* approach studies sustainable consumption behavior as a function of processes and characteristics *external* to the individual, which include fiscal and regulatory incentives, institutional constraints, and social practices. The first (“internalist”) perspective carries an implicit assumption of consumers as atomistic agents autonomous of social structure, while the second (“externalist”) perspective sees consumers as constrained operators programmed (or at least heavily influenced) by external forces beyond their comprehension or control. The literature on sustainable consumption behavior (particularly literature on recycling) is typical of this “divergence” in perspectives in both the *internalistic* and *externalistic* approaches. Internalist perspectives, such as those of Arbuthnot (1974), De Young (1986, 1990) and Pardini and Katzev (1983), focused exclusively on attitudes, beliefs, and intrinsic motivations as critical determinants of recycling actions. Externalist approaches such

as those of Ingram and Geller (1975), Jacobs and Bailey (1982), and Witmer and Geller (1976) concentrated solely on the role of external constraints, prompts, and incentives in promoting recycling behavior.

At the heart of the internalistic approach is the understanding of public attitudes as a precursor of any prescription toward pro-environmental behavior. Hence, it posits awareness raising, information provision, and advertising campaigns to motivate pro-environmental attitudes (Oates & McDonald, 2004). On the contrary, the externalistic approach advocates a combination of incentives and changes in the regulatory structure to create the appropriate state for pro-environmental behavior (Jackson, 2005). The integrative approach emerged in recent sustainable consumption literature, especially on recycling studies (see Perrin & Barton, 2001; Tucker et al., 1998) that seem to adopt the two perspectives. The import of this is that the conceptual frameworks, theories, and models of sustainable consumption behavior are developed along these three (internalistic, externalistic, and integrative) approaches/perspectives.

### Previous Conceptual Frameworks and the Proposition of the PIF Conceptual Framework

The foundational theories on sustainable consumption behavior were laid by the internalists who took an internalistic perspective to the study of sustainable consumption behavior. The foremost pro-environmental consumption theory is the Ecological Value Theory, which was conceptualized by Dunlap and van Liere (1978) in the context of their New Environmental Paradigm. The main thrust of the Ecological Value Theory (EVT) is that pro-environmental behaviors flow directly from pro-social or moral values. The Ecological Value Theory is an *internalistic* approach to the study of sustainable consumption behavior. Since Dunlap and van Liere's original study, a number of studies (e.g., Devinney, Eckhardt, & Belk, 2009; Gupta & Ogden, 2009; Kilbourne, Beckmann, Lewis, & van Dam, 2001; McCarty & Shrum, 2001; Peattie, 2001; Stern, Dietz, Kalof, & Guagnano, 1995) have been carried out attempting to confirm the existence of three distinct value orientations that are at the heart of the EVT: biospheric, social, and egoistic. Other sustainable consumption behavior theories and models based on the *internalistic* approach are the Norm Activation Theory (NAT) conceptualized by Schwartz (1977) and the Stern's Value Belief Norm Theory (VBNT) conceptualized by Stern (2000). Just like the Theory of Planned Behavior of Fishbein and Ajzen (1975, 1980), which were not initially developed to study sustainable consumption behavior, the Norm Activation Theory was not also originally developed

by Schwartz (1977) for the sustainable consumption behavior context. It has been identified by Jackson (2005) as an internalistic approach in the theorization of sustainable consumption behavior because of its goal of explaining specifically pro-social behavior and because of its wide application in the attempt to understand and to predict pro-environmental behaviors. For instance, Stern (2000) used the theory to investigate support for environmental protection, Hopper and Nielsen (1991) and Vining and Ebreo (1990, 1992) used it to examine recycling behaviors, Black, Stern, and Elworth (1995) to explain household energy adoption, and Bamberg and Schmidt (2003) to explore alternatives to car use.

The next strand in the theorization of sustainable consumption behavior is the *integrative* perspective or approach, which sought to integrate the principles of the internalistic and externalistic approaches following their individual shortcomings in explaining sustainable consumption behavior. Five theories/models rooted in the integrative perspective are notable in sustainable consumption literature: Stern's ABC model, Triandis's Theory of Interpersonal Behavior, the MOA model, Bagozzi's Model of Consumer Action, and the GCP model.

Stern's ABC model, is an integrative approach to sustainable consumption behavior specifically developed to explain sustainable consumption behavior context, which is an extension of the internalistic Stern's Value Belief Norm Theory that is also conceptualized by Stern (2000). The ABC model was a radical attempt to conceptualize an integrated model of environmentally significant behavior.

However, Triandis's Theory of Interpersonal Behavior, another integrative perspective, was not originally conceptualized to explain behavior in the sustainable consumption context. It has earned a place in the sustainable consumption behavior discourse due to its wide-ranging utility and application in the sustainable consumption parlance (Jackson, 2005). For instance, Bagozzi, Gürnao-Canli, and Priester (2002) and Steg, Vlek, and Slotegraaf (2001) have applied and tested it in sustainable consumption contexts. In addition, the MOA model and the Bagozzi's Model of Consumer Action were also not developed specifically to elucidate sustainable consumption; however, their utility has been tested and confirmed in the sustainable consumption behavior context. Interestingly, the GCP model was a purely conceptualized consumption behavior model in the sustainability debate. These three models have utility at explaining behavior in sustainable consumption context and guiding conceptual framework development; however, they have a number of shortcomings, which have the potential of provoking a framework for emerging studies from the SSA region.

Rooted in the integrative approach, three models/theories in the reviewed literature are found to be relevant to the eclectic nature of sustainable consumption behavior, including the ABC model, the MOA model, and the GCP model. Arguably, the shortcomings of these models could be a platform for conceptualizing and positing a more robust and integrative model for explaining sustainable consumption behavior for the SSA.

Figure 1 depicts the ABC model. The ABC model is divided into four quadrants, wherein attitude (A) could be positive or negative and external conditions or contextual factors (C) could also be positive or negative. The quadrant is divided into two parts by recycling behavior (B) pattern. The positive side reflects the individual's action to recycle, while the negative side reflects the individuals' action not to recycle. Hence, if the external conditions (C) are negative and the attitude is negative, there will be no recycling (negative behavior). If the external conditions (C) are positive and the attitude is positive, the individual will recycle. In the situation where the external condition is negative and the attitude is positive, the individual could either recycle or not to recycle. Similarly, the individual may either choose to recycle or not to recycle if the attitude is negative and the external conditions are positive.

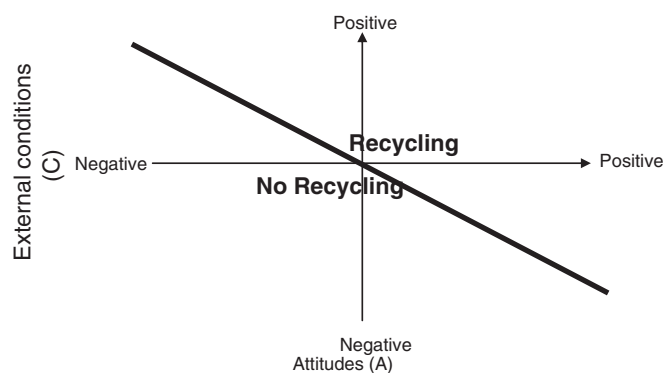
The shortcoming of the ABC model is twofold. First, the model is originally conceptualized to explain only recycling behavior; thereby limiting its utility in explaining other patterns of sustainable consumption behavior. For instance, a study by Padel and Foster (2005) that tested the ABC model in the organic food sector did not find support for this model. In addition, the present

researcher agrees with the views of Jackson (2005) that since the ABC model specifically addressed recycling behavior, it may not be useful in addressing other patterns such as waste management, green purchase decision, and energy conservation. This limitation has created a need for a somewhat new model that will incorporate, in addition to recycling, other patterns of sustainability consumption behavior. For instance, in most SSA nations, the sustainability pattern reflected in the form of waste management is commonplace (Ukenna, 2015). Second, the ABC model did not distinguish between facilitators (or external drivers) and inhibitors (or barriers) to sustainable consumption; rather the two concepts were subsumed in one construct—external conditions—thus making it difficult to identify the specific facilitators or inhibitors that most critically influences recycling behavior for the purpose of policy prescription and marketing strategy development.

The need for the inclusion of facilitators in a framework that is SSA oriented is thoughtful since most nations in the SSA region are sustainability creditor nations. Hence, a good conceptual framework or research schema should seek to unearth factors responsible for the favorable sustainability status of most SSA countries. To sustain the somewhat favorable ecological status of the SSA region, it is also germane to unearth potential factors that could act as inhibitors that may thwart the present favorable sustainability status of the region. The import being that the ABC model has not eloquently addressed the fact that both facilitators and inhibitors can coexist and interact as well as interact with attitude/intention to predict sustainable consumption behavior. Consequently, the model can be viewed to be simplistic, thus provoking a need for a robust, yet simple, model that clearly specifies the components of inhibitors and facilitators. In the light of this shortcoming, it is important to rethink and consider a framework that will eloquently incorporate inhibitors and facilitators of sustainable consumption.

On the inhibitors side, a number of studies (e.g., Chan, 1999; Morgan & Birtwistle, 2009; Shaw, Hogg, Wilson, Shui, & Hassan, 2006; Ukenna, Nkamnebe, Nwaizugbo, Moguluwa, & Olise, 2012; Vining & Ebreo, 1990) have explored and identified elements of inhibitors to sustainable consumption that are consistent with the SSA. *Knowledge or information, educational awareness, price perception, and lack of time* reinforce themselves in literature as critical inhibitors to sustainable consumption. For instance, Maloney and Ward (1973), Vining and Ebreo (1990), and Chan (1999) have shown that knowledge about sustainability issues is a significant predictor of sustainability

**FIGURE 1** The Attitude-Behavior-Context Model Applied to Recycling



Source: Stern (2000).

consumption behavior and that individuals highly knowledgeable about environmental issues were more willing to pay a premium price for green products. Young et al. (2010) identified “high price” as the key inhibitor to the purchase of sustainable products. Other scholars such as Shaw et al. (2006), Morgan and Birtwhistle (2009), and Tanner and Kast (2003) have “high prices” and “lack of willingness to pay (WTP)” as key inhibitors of sustainable consumption behavior. Shaw et al. (2006) reported the time to search for sustainable products constitute a key inhibitor to sustainable consumption behavior, while Carrigan and Attalla (2001) noted time pressure as having significant impact on ethical product purchase intention. Accordingly, we posit the following propositions:

**Proposition 1 (P<sub>1</sub>):** *Consumers’ low sustainability knowledge/information (KI) is a significant inhibitor to consumer’s sustainability intention/attitude (IA).*

**Proposition 2 (P<sub>2</sub>):** *Low sustainability educational awareness (EA) is a significant inhibitor to sustainability intention/attitude (IA).*

**Proposition 3 (P<sub>3</sub>):** *Consumer high price perception (PP) for sustainable products is a significant inhibitor on the consumers’ sustainability intention/attitude (IA).*

**Proposition 4 (P<sub>4</sub>):** *Lack of time (LT) to search and evaluate sustainable products is a significant inhibitor to sustainability intention/attitude (IA).*

In addition, another dimension of inhibitors observable in literature relate to sustainability governance and interventions. This perspective is important as there is high level of sustainability inertia or leapfrogging at the individual level, which suggest a need for interventionary therapy or push. Although government interventions (Gardner & Stern, 2002) have been suggested in the literature, the role of religious bodies, educational institutions, community policies, social groups, and non-governmental organizations (NGOs) have not received dominant empirical attention; yet they are strong players in the behavior change vanguard. Due to the communal nature of SSA countries and the degree of influence of religious/social groups in SSA societies, the inclusion of the intervention or governance subconstruct as an inhibitor (or otherwise) in our model could be justified. Gardner and Stern (2002) sustained that it is quite precisely the problem of societal governance, of coordinating individual behavior for the common good; however, they recommend that four “solution types” be included as sustainability intervention/governance for predicting sustainability behavior—government, education, community, and religion. We include the fifth—social groups (e.g., age grades), following the level of influence they

have in most SSA countries. Hence, this line of argument provides the basis for the fifth, sixth, and seventh propositions:

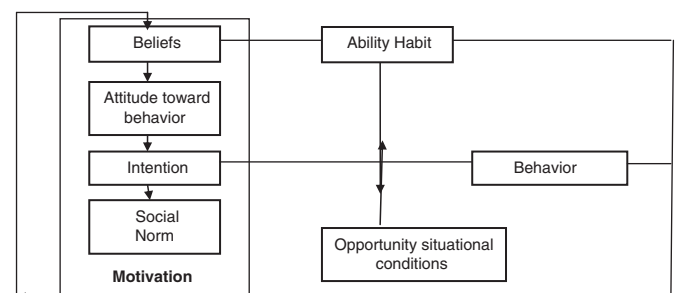
**Proposition 5 (P<sub>5</sub>):** *Weak government regulation (GR) is a significant inhibitor to sustainability intention/attitude (IA).*

**Proposition 6 (P<sub>6</sub>):** *Low level of community leadership (CL) intervention is a significant inhibitor to sustainability intention/attitude (IA).*

**Proposition 7 (P<sub>7</sub>):** *Low level of religious and social groups (RS) interventions is a significant inhibitor to sustainability intention/attitude (IA).*

Figure 2 depicts the MOA model. According to the model, the “ability” concept is supposed to incorporate both a habit and a task knowledge element. Its inclusion in the model draws support from a variety of places, including previous research on waste separation and recycling behaviors (Kok & Siero, 1985; Pieters, 1989, 1991; Thøgersen, 1994). The importance of habit, both as an independent determinant of behavior and as a moderator of intention, is well discussed in the literature (see, for example, Gatersleben & Vlek, 1997, 2000). Task knowledge is also clearly an important consideration, particularly in relation to new procedures relevant to pro-environmental behavior, such as the appropriate separation and sorting of materials for recycling (Thøgersen, 1994; Verhallen & Pieters, 1985). The influence of situational factors on consumer behaviors has been raised a number of times in this review. The opportunity component of the MOA model is clearly related to Triandis’s concept of facilitating conditions and Stern’s notion of external conditions. Though Ölander and Thøgersen prefer to see opportunity as “objective preconditions for behavior,” this aspect of the model also has some similarities with Ajzen’s concept of perceived behavior control—at least in so far as the latter concept is regarded

**FIGURE 2** Motivation-Opportunity-Ability Model



Source: Ölander and Thøgersen (1995).

as being a proxy for actual behavior control (Jackson, 2005).

A major limitation of the MOA model is that it did not recognize inhibitors (barriers) as a germane construct in explaining sustainable consumption. The types of inhibitors certainly differ from context to context. Recognizing the importance of both inhibitors and facilitators in an appropriate model/theory of sustainable consumption, Young et al. (2010) noted that both barriers and facilitators interact to influence green purchase decision. The MOA model argued on the need to increase opportunity situational factors (i.e., to increase facilitators); however, mention was not made of the inhibitors (barriers) to be reduced to foster sustainable consumption behavior. No attempt was made to deconstruct *opportunity situation condition*. In addition, just like the limitation of the ABC model, the MOA model did not identify the inhibitors of sustainable consumption behavior. Again, the absence of these two main constructs in a typical SSA research may not capture the reality and sustainability characteristics of the region. Factors responsible for the relatively favorable sustainability status need to be unraveled and maintained, while potential inhibitors should be revealed to nip them in the bud. Second, the MOA model was not originally conceptualized to address consumption behavior in the sustainability context, which explains its limited application in the SSA context and why it has not received wide application in the mainstream sustainable consumption literature. Thus, these shortcomings project the need for clearly incorporating elements of inhibitors and facilitators in a sustainable consumption framework.

On the facilitators side, the MOA model seems to provide a more relevant and strong theoretical underpinning. Therefore, the strongest point of the MOA model is its proposition to increase opportunity situational factors (i.e., to increase facilitators); however, its weakness is that mention was not made of the inhibitors (barriers) to be reduced to foster sustainable consumption behavior. Worse still, no attempt was made to specifically deconstruct “opportunity situational factors.” Agreeably, the MOA model must have somewhat informed recent empirical studies that sought to unearth the factors facilitating and driving sustainable consumption behavior, with a view to further boost them. Consequently, a number of elements have been identified and explored in mainstream literature in an attempt to unravel the facilitators of sustainable consumption. Such elements include *environmental concern* (e.g., Doran, 2009; Magnusson, Arvola, Hursti, Aberg, & Sjoden, 2003), *health concern* (e.g., Arvola, Vassalo, Dean, & Lampila, 2008; Krystallis, Vassalo, Chrysohoidis, & Perra, 2008), *income status* (e.g.,

Roberts, 1995, 1996; Straughan & Roberts, 1999), *educational level* (e.g., Samdahl & Robertson, 1989; Tognacci, Weigal, Wideen, & Vernon, 1972; Van Liere & Dunlap, 1981; Zimmer, Stafford, & Stafford, 1994), and *quality/trust* (e.g., Padel & Foster, 2005). Hence, the researchers conceptualize the following propositions:

**Proposition 8 (P<sub>8</sub>):** *Environmental concern (EC) is a significant facilitator of sustainability intention/attitude (IA).*

**Proposition 9 (P<sub>9</sub>):** *Health concern (HC) is a significant facilitator of sustainability intention/attitude (IA).*

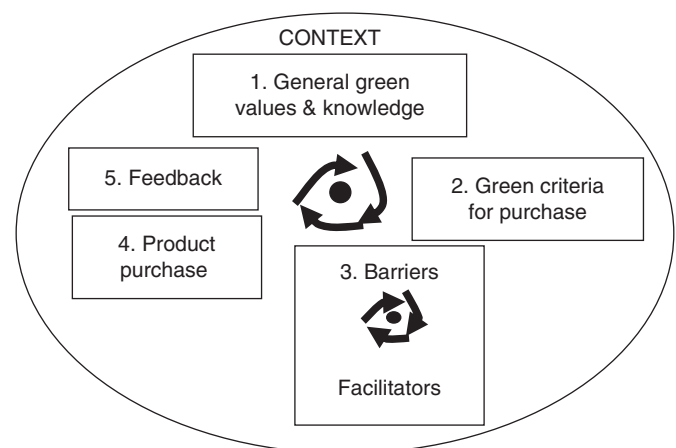
**Proposition 10 (P<sub>10</sub>):** *Income status (IS) is a significant facilitator of sustainability intention (IA).*

**Proposition 11 (P<sub>11</sub>):** *Higher educational level (EL) is a significant facilitator of sustainability intention/attitude (IA).*

**Proposition 12 (P<sub>12</sub>):** *Quality/trust (QT) of sustainability product is a significant facilitator of sustainability intention/attitude (IA).*

Figure 3 depicts the GCP model. Young et al. (2010) conceptualized the GCP model to explain the purchase process of self-declared green consumers in relation to technology products. The GCP model summarizes the process of each micro purchase of a green consumer of a technology product in the United Kingdom. It consists of five elements operating in socioeconomic, infrastructure, and cultural environments. Hand, Shove, and Southerton (2007) recognized that the socioeconomic, infrastructure, and cultural context of the purchase is important; however, Young et al. did not explore these in their study “due to limited time and resources” (p. 28). However, their results, which led to a tentative proposal of this

**FIGURE 3** Green Consumer Purchasing Model



Source: Young, Hwang, McDonald, and Oates (2010).

model, show that each individual purchase was framed by situational factors such “as moving house, and retailers with green product range within travelling distance, which caused barriers” (p. 28).

The major shortcoming of the GCP model is that it is based and rooted in the responses of self-reported green consumers. Accordingly, the relevance of this model may be in the western world where the green consumer segment can clearly be identified and where the green consumerism movement is being noticed. The green consciousness is still embryonic in the SSA context, and consequently, the GCP model may not adequately explain green purchase behavior in a less sophisticated and less sustainability conscious context like the SSA. In the SSA region, there is a weak demographic database, self-reported green consumers are not common, and NGOs in the sustainability frontline are not commonplace in most of the countries (Ukenna, 2015). Consequently, the GCP model/framework, though a useful model because of its incorporation of both facilitators and inhibitors constructs, has doubtful utility in the SSA region as most sustainability behaviors are unconsciously exhibited because sustainability practices are somewhat embedded in most cultures in the SSA region (United Nations Economic Commission for Africa, 2005), but not necessarily exhibited in the form of green purchase decisions.

Additionally, the GCP model is premised on the assumption that purchase decision is the only pattern or proxy of sustainable consumption behavior. Other sustainable consumption lifestyles (such as recycling, waste management, and renewable energy), not just purchase decisions, can also proxy sustainable consumption behavior. This is true for the SSA context where, for example, sustainable land use practice and waste management are other forms of sustainable lifestyle that manifest, consciously or unconsciously, in the SSA.

Further, most previous studies (e.g., Vermeir & Verbeke, 2006) did not recognize the need for inhibitors and facilitators to be moderated by intention or attitude construct; rather, they assumed that inhibitors and facilitators are direct predictors of sustainable consumption behavior, which should not be. These previous studies contradicts the insight from Ajzen and Fishbein’s (1980) Theory of Planned Behavior (which necessitated the Theory of Reasoned Action following the shortcomings of the Theory of Planned Behavior), wherein they argued that attitude and other behavior predictors can be moderated by intention and that intention is a stronger predictor of behavior and can also be determined by some other factors (e.g., subjective norm) in addition to attitude. The strength of this line of argument explains the inclusion

of the intention construct as a moderator of sustainable consumption behavior patterns (such as green purchase decision, waste management, renewable energy, and recycling behavior) in our proposed conceptual framework.

Consistent with Ajzen and Fishbein (1980), a number of sustainability marketing studies have empirically proven that sustainability intention is a predictor of sustainability consumption behavior. For instance, Armitage and Conner (1999, 2001), East (1997), Conner and Sparks (1996), and Staats (2003) have all empirically shown that intention is a strong predictor of behavior within the sustainability context. The predictive power of behavior by intention notwithstanding, sometimes intention may not translate into behavior/action. This gap has given rise to what is referred to as intention-behavior gap (see Naidoo, 2010). Nonetheless, it is well established in extant sustainability literature that intention is a key moderator of behavior. Thus, we suggest the following propositions:

**Proposition 13 (P<sub>13</sub>):** *Sustainability intention/attitude (IA) is a significant predictor of green purchase decision (PD) pattern of sustainability behavior.*

**Proposition 14 (P<sub>14</sub>):** *Sustainability intention/attitude (IA) is a significant predictor of recycling behavior (RB) pattern of sustainability behavior.*

**Proposition 15 (P<sub>15</sub>):** *Sustainability intention/attitude (IA) is a significant predictor of renewable energy/transport (RET) pattern of sustainability behavior.*

**Proposition 16 (P<sub>16</sub>):** *Sustainability intention/attitude (IA) is a significant predictor of waste management/reduction (WMR) pattern of sustainability behavior.*

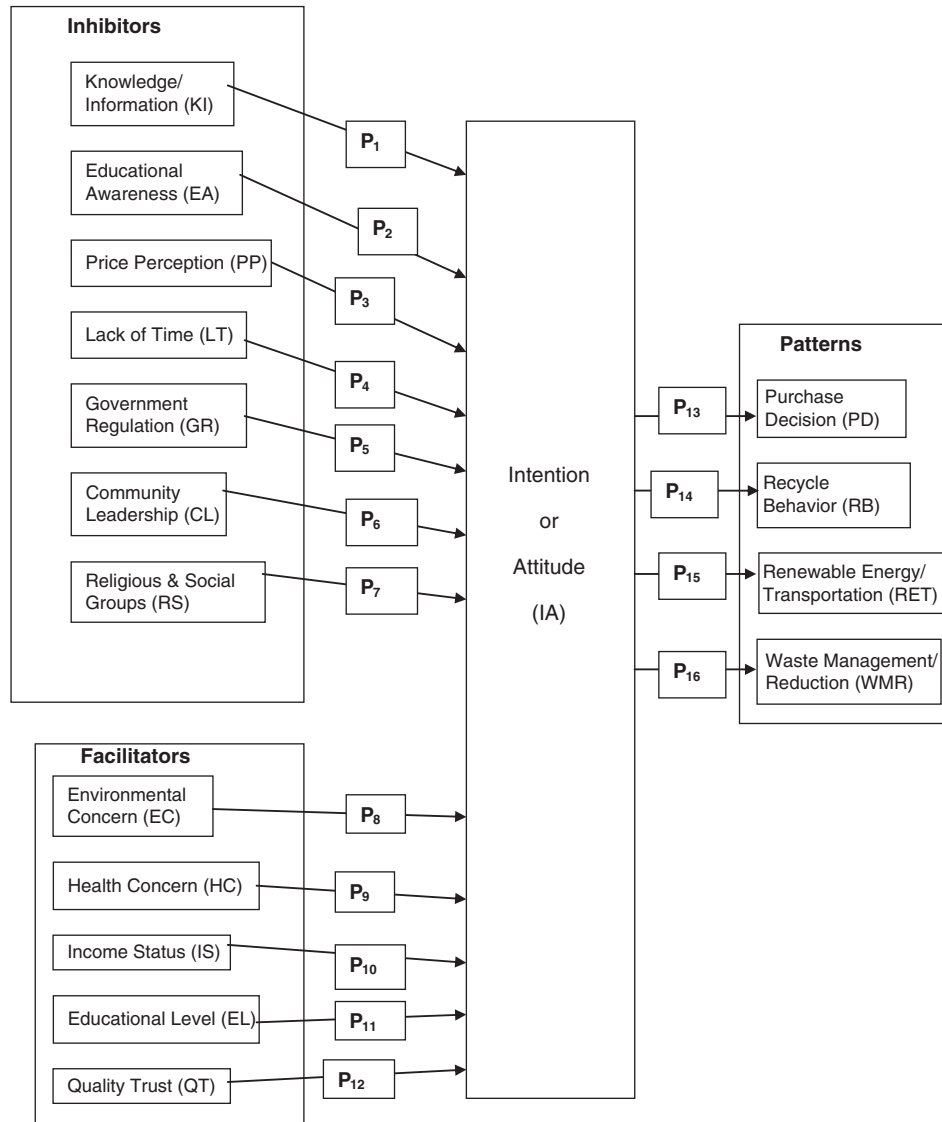
### Toward the PIF Conceptual Framework for SSA Studies

Guided by the foregoing propositions, and based on the empirical and theoretical gaps in literature, we advance the PIF conceptual framework, shown in Figure 4. The proposed PIF conceptual framework possesses the potential of informing research schemas that will guide SSA-oriented empirical sustainability investigations. The linkages in the framework constitute the basis for the formulation of the 16 conceptual propositions.

The conceptual framework is based on four main constructs or pillars, namely: *patterns*, *inhibitors*, *facilitators*, and *intention*. While *patterns*, *inhibitors*, and *facilitators* are the main constructs, *intention* is a moderating or intermediating construct. The christening of the proposed PIF model derives from the first letters of the main constructs (i.e., *p*atterns, *i*nhibitors, and *f*acilitators). As evidenced in the proposed PIF model of



FIGURE 4 PIF Conceptual Framework



Source: Authors' own conceptualization.

Figure 4, the independent variables include *facilitators*, *inhibitors*, and *intention*. *Intention* is a mediating construct and also a dependent variable. It is mediating between *facilitators* and *inhibitors*, and *patterns*, thus indicating that *facilitators* and *inhibitors* are not direct predictors of *patterns*. Rather, they are moderated by *intentions*. In the same vein, *intention* is also a dependent variable as it depends on both *facilitators* and *inhibitors*. Behavior *pattern* is principally a dependent variable, as it depends on *intentions*.

The *facilitators* were measured based on insight drawn from the empirical studies of Vermier and Verbeke

(2006) and Shaw et al. (2006). Accordingly, as depicted in the proposed PIF conceptual framework, the *facilitators* construct has five dimensions: *environmental concern*, *health concern*, *income status*, *educational level*, and *quality/trust*.

On the other hand, insight on the dimension of the *inhibitors* was drawn from the study of the UNEP (2007, p. 19) and the empirical studies of Shaw et al. (2006), Young et al. (2010), Tanner and Kast (2003), Padel and Foster (2005), and Mondelaers, Verbeke, and Huylenbroeck (2009). Accordingly, as depicted in the proposed PIF conceptual framework, the *inhibitors* construct has seven dimensions: *knowledge/information*, *educational awareness*,

*price perception, lack of time, government regulation, community leadership, and religious and social groups.*

The *pattern* construct is measured and broken down into four dimensions or subconstructs—*renewable energy/transportation, sustainability-driven purchase decision, recycle behavior, and waste management behavior.* There is a degree of congruence in literature (see, for instance, Antil, 1984; Roberts, 1995; Straughan & Roberts, 1999) that key forms of manifestation of sustainability behavior patterns or sustainable lifestyle are the foregoing four dimensions.

Evidently, there are seven subconstructs for the *inhibitors* construct, five subconstructs for the *facilitators* construct and four subconstructs for the *patterns* constructs, which are largely drawn from previous empirical studies. Except for *environmental concern* (an internalistic component), other elements/subconstructs under *facilitators* and *inhibitors* are nonpsychological factors, which is consistent with externalistic approach to the study of sustainable consumption behavior. While *environmental concern* is a psychological factor that captures most psychological factors in the sustainability debate domain (such as *value, perceived consumer effectiveness (PCE), feelings of guilt, cognitive effort, altruism, egotism, etc.*); however, most previous studies (see, for example, Birtwistle & Moore, 2007; Shaw et al., 2006; Young et al., 2010) have also captured nonpsychological factors such as *price, information, and so on, which informed their inclusion in the PIF conceptual framework.* The subconstructs (seven *inhibitors* and five *facilitators*) are included in the schema in order to reveal the key factors (*facilitators and inhibitors*) that influence sustainability *intention*, which in turn drives and explains the *pattern* construct. Put together, the conceptual framework is consistent with the *integrative* approach to the study of sustainable consumption behavior.

The research schema simply posits that *facilitators* and *inhibitors* directly impact on the consumer's intention to adopt a sustainable life pattern, thus making intention a moderator between *facilitators/inhibitors* and sustainability patterns/behavior. Observably, the proposed PIF conceptual framework depicts the proposed relationships between and among the constructs and subconstructs in this study. In all, 16 conceptual propositions were formulated. Since seven subconstructs underpin the *inhibitors* construct, seven constructs were linked to *intention*, which explain their possible restraint on an individual's propensity to adopt any of the sustainability life patterns. Consequently, seven conceptual propositions (labeled P<sub>1</sub>, P<sub>2</sub>, P<sub>3</sub>, P<sub>4</sub>, P<sub>5</sub>, P<sub>6</sub>, and P<sub>7</sub>, respectively) were derived to explain the relationship between selected *inhibitors* and *intention*. In the main, the authors sought to

unearth the key sustainability constraints acting against an individual's sustainability intention.

In addition, the *facilitator* construct was deconstructed along five domains. The five domains were linked to *intention*. The import of the linkage is that five factors directly or indirectly could be enablers of an individual's intention to adopt a sustainability life pattern. Hence, five conceptual propositions (labeled P<sub>8</sub>, P<sub>9</sub>, P<sub>10</sub>, P<sub>11</sub>, and P<sub>12</sub>) were formulated to unravel the key facilitating factors that have the propensity to foster sustainability intentions.

The right-hand side of the proposed PIF conceptual framework explains the connection between *intention* and *patterns*. Since four subconstructs underpin the *patterns* constructs, four right-hand directional arrows linking intention to patterns can be observed. This means that sustainability intention can predict the manifestation of sustainability pattern. Accordingly, four conceptual propositions (labeled P<sub>13</sub>, P<sub>14</sub>, P<sub>15</sub>, and P<sub>16</sub>) were formulated. The aim of the four patterns propositions is to reveal the basic form sustainability behavior pattern manifests among the respondents.

## Method

This paper is primarily conceptual, but with an empirical section based on a pilot test aimed at empirically validating the conceptual framework preliminarily. On the conceptual side, which aimed at building a literature body from which a framework could be derived, a number of academic resources were used to produce a very inclusive and all-encompassing review of literature. The search process involved a wide range of peer reviewed academic journal articles aimed at addressing the issues on PIF of sustainable consumption behavior in the SSA context.

The criteria used for the inclusion or exclusion of an element or variable (e.g., health concern) within each construct (e.g., *facilitator*) were the necessity for the element to have an impact on an individual's potential to adopt a sustainable consumption lifestyle. Elements have been derived from consumption theories and ecological and/or environmental theories. In addition, previous empirical studies have also informed the choice of elements that are peculiar to an SSA context. Literature was also drawn from the fields of psychology and sociology as the availability of research on sustainable consumption behavior is not limited to marketing given its eclectic nature; thus consideration was given to a wider gamut of marketing theories as well as theories in psychology, sociology, and environmental sciences. The relevant literature has been organized and presented in the framework according to coherent themes (or variables) that were

derived during the review. These themes form the components presented in the proposed framework.

The empirical section provides preliminary empirical validation for the proposed PIF conceptual framework based on a pilot test. Consistent with the study of De Pelsmacker, Driesen, and Rayp (2005), the pilot test consisted of 92 academic staff of a federal university in Southeast Nigeria as unit of analysis. The decision that informed the choice of this group is their somewhat awareness of sustainability issues as a result of their educational level (De Pelsmacker et al., 2005). A structured questionnaire was designed and administered. With a Cronbach's alpha value of 0.8, the set of items shows good internal consistency. All the constructs have mean inter-item correlation value of over 0.4, hence suggesting a strong colinearity. The instrument was also subjected to construct validity, executed using Factor Analysis (Hair, Black, Babin, & Anderson, 2010; Pallant, 2007). All items across construct have factor loadings above the 0.3 cutoff suggested by Pallant (2007); items not meeting the threshold were deleted. Hence, respective items fit well with other items in its component/construct. In addition, The Kaiser-Meyer-Olkin values for each construct exceeded the recommended value of 0.6 (Kaiser 1970, 1974, cited in Pallant, 2007, p. 197) and Bartlett's Test of Sphericity (Bartlett, 1954, cited in Pallant, 2007, p. 197) reached statistical significance, supporting the factorability of the correlation matrix, hence making the instrument valid for the execution of this study.

Insight was drawn (subject to minor adjustment to capture the SSA context) from several sources in the attempt to operationalize the *patterns* constructs, such as the Ecologically Conscious Consumer Behavior (ECCB) scale developed by Roberts (1996); Socially Responsible Consumption Behavior (SRCB) scale developed by Antil (1984); *inhibitors* constructs (such as Shaw et al., 2006; Tanner & Kast, 2003; Young et al., 2010; UNEP, 2007); and *facilitators* constructs (such as Vemeir & Verbeke, 2006). The mediating construct, *intention*, is operationalized using items drawn and modified from those of ECCB and SRCB scales. In addition, some items were also drawn from the intention-behavior scale of the study by Naidoo (2010), as well as various literature reviews on intention such as the works of Dimitrova (2010), Tantavoi, Shaughnessy, Gad, and Ragheb (2009), and others. On a 5-point Likert-type scale, the *patterns* constructs were operationalized with 36 items, *intention* construct was measured on 13 items, *facilitators* construct was measured on 12 items, and *inhibitors* construct were measured on 33 items.

Since the study is a model proposition study, the empirical section is to initially confirm our proposed

PIF conceptual framework. Accordingly, the researchers adopted structural equation modeling (SEM) for testing relationships in the model. Specifically, the study adopted the partial least square structural equation modeling (PLS-SEM) approach since it has been widely recommended for exploratory studies, as is the case in most marketing studies following the weaknesses of covariance-based structural equation modeling (CB-SEM) (see Wong, 2010). The choice of PLS-SEM is hinged on the fact that the present study is a basic or pure research (or better still, a baseline research), which makes it exploratory in nature. The use of SmartPLS, which is a more flexible PLS-SEM software, was used. As it is with the present study, SmartPLS is proposed for modeling formative constructs, particularly in marketing and organizational research (e.g., Diamantopoulos & Winklhofer, 2001).

## Analysis and Findings

The PIF research schema guided the conceptualization of the path model. The path model is the model specification, which is the graphical format of SEM tested using the SmartPLS program to determine the model fit. The calculated global goodness of fit (GoF) is 0.61, which exceed the threshold of  $GoF > 0.36$  suggested by Wetzels, Odekerken-Schröder, and van Oppen (2009). Thus, it can be deduced that the PIF research model has a good overall fit, thus providing support that the proposed theory fits reality.

The coefficient of determination,  $R^2$ , is 0.300 for the IA endogenous latent variable. This means that the 12 latent variables somewhat strongly explain 30% of the variance in IA. Hence, other factors not included in the model explains 70% (i.e.,  $100\% - 30\%$ ) of the variance in IA. Further, IA alone explains 6% (0.069), 3% (0.033), 6% (0.066), and 9% (0.095) of the variance in PD, RET, RB, and WMR, respectively. In other words, the overall  $R^2$  for IA (0.900) in Figure 5, indicates that the research model explains about 30% of the variance in the endogenous variables while PD, RET, RB, and WMR explain about 6% (0.069), 3% (0.033), 6% (0.066), and 9% (0.095), respectively.

### Inner Model/Structural Model Path Coefficient Sizes and Significance

With regard to facilitator constructs, the inner model suggests that EC (0.329) has the strongest effect on IA, with a path coefficient of 0.329. This is followed by EL (0.077), HC (-0.105), QT (-0.062), and IS (-0.089), respectively. The various effect levels of the facilitators variables on IA represent the rank order of importance of the facilitators based on their path coefficients indicated by the arrows.

Using the standardized path coefficient (SPC) parameter, the hypothesized path relationship between EC and IA is statistically significant because its standardized path coefficient (0.329) is greater than the 0.05 significant level. Hence, we accept  $H_8$  that EC is predictor of IA. Similarly, the hypothesized path relationship between EL and IA is also statistically significant since its standardized path coefficient (SPC) of 0.077 is greater than the 0.05 significant level. Thus, we also accept  $H_{11}$  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 their low standardized path coefficients [HC (-0.105), QT (-0.062), and IS (-0.089)] being below the significant level of 0.05. Hence, we reject  $H_9$ ,  $H_{12}$ , and  $H_{10}$ . Thus, we conclude that EC and EL are both moderate predictors of IA; however, HC, QT, and IS do not predict IA.

With regard to inhibitors constructs, the inner model suggests that EA (0.150) has the strongest effect on IA with a path coefficient of 0.150. This is followed by RS (0.114), GR (0.080), PP (0.040), CL (-0.017), LT (-0.024), and KI (-0.044), respectively. The various effect levels of the inhibitor variables on IA represent the rank order of importance of the inhibitors based on their path coefficients indicated by the arrows.

Using the standardized path coefficient parameter, the hypothesized path relationship between EA and IA is statistically significant because its standardized path coefficient (0.150) is greater than the 0.05 significant level. Hence, we accept  $P_2$  that EA is a predictor of IA. Similarly, the hypothesized path relationship between RS and IA is also statistically significant since its standardized path coefficient (SPC) of 0.114 is greater than the 0.05 significant level. Thus, we also accept  $P_7$  that RS is a predictor of IA. Also, there is a statistically significant relationship between GR and IA, since the standardized path coefficient of GR (0.080) is greater than the threshold of 0.05 significant level. However, the hypothesized path relationship between PP, CL, LT, and KI, respectively, linked with IA are not statistically significant due to their low standardized path coefficients [PP (0.040), CL (-0.017), LT (-0.024), and KI (-0.044)], which are below the significant level of 0.05. Hence, we reject  $P_1$ ,  $P_3$ ,  $P_4$ , and  $P_6$ . Thus, we conclude that EA, RS, and GR are predictors of IA; however, PP, CL, LT, and KI do not predict IA.

We now consider the patterns dimension to determine the most critical using their standardized path coefficients (SPC) for ranking. As shown in Figure 5 below, WMR ranked highest with an SPC of 0.309, thus making WMR the most critical pattern that sustainable

consumption behavior manifest among the respondents. This is followed by PD with a SPC of 0.263. Next is RB with a SPC of 0.256. However, RET ranked lowest, with a SPC of 0.183. Further, using the SPC, the hypothesized relationship between IA and PD shows that the relationship is statistically significant since the linkage's SPC of 0.253 is greater than the significant level of 0.05. Hence,  $P_{13}$  is accepted. Similarly, support were found for hypothesized relationships between IA and RET; IA and RB; and IA and WMR since their SPC of 0.183, 0.256, and 0.309 respectively are all greater than the significant level of 0.05. Hence, we also accept  $P_{14}$ ,  $P_{15}$ , and  $P_{16}$ .

### Checking Structural Path Significance in Bootstrapping

SmartPLS generates *t*-statistics for significance testing of the inner model, using a procedure called bootstrapping. This way, the hypothesized relationship was tested in addition to the initial test done using only the path coefficients above. By this procedure, the bootstrap standard errors are estimated, which in turn gives approximate *t*-values for significance testing of the structural path. The bootstrap result approximates the normality of data.

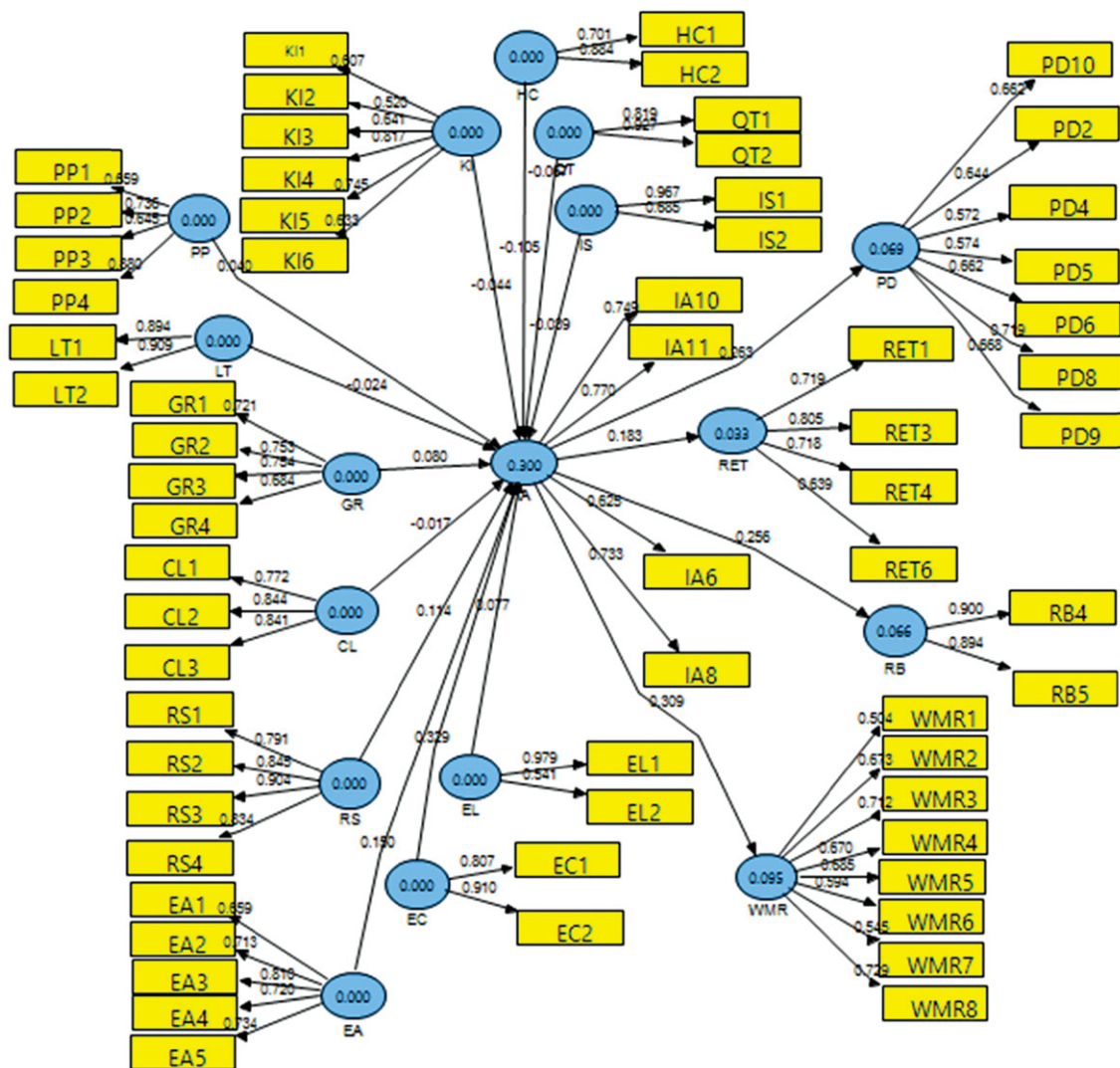
Table 1 depicts the result after bootstrapping has been conducted in the SmartPLS. We check the numbers in the “*T*-Statistics” column to see if the path coefficients of the inner model are significant or not. Using a two-tailed *t*-test with a significance level of 5%, the path coefficient is significant if the *t*-statistics is larger than 1.96. A number of hypothesized linkages find statistical support. Accordingly, from the facilitators' domain, the following two linkages; that is: “EC → IA” and “EL → IA” are statistically significant as they find statistical support. However, other facilitators/attitude linkages, such as: “HC → IA”; “IS → IA”; and “QT → IA” do not find statistical support. The import of this is that we accept  $H_8$  and  $H_{11}$ ; however, we reject  $H_9$ ,  $H_{10}$ , and  $H_{12}$ .

Within the inhibitors domain, three linkages find statistical support. They are: “GR → IA”; “PP → IA”; and “RS → IA.” Unfortunately, four linkages, that is: “CL → IA”; “EA → IA”; “KI → IA”; and “LT → IA” do not find statistical support. Consequently, we accept  $P_3$ ,  $P_5$ , and  $P_7$ ; however, we reject  $P_1$ ,  $P_2$ ,  $P_4$ , and  $P_6$ .

Results in Table 1, indicate that nine (i.e.,  $P_3$ ,  $P_5$ ,  $P_7$ ,  $P_8$ ,  $P_{11}$ ,  $P_{13}$ ,  $P_{14}$ ,  $P_{15}$ , and  $P_{16}$ ) of the proposed relationships are statistically significant (i.e., their *t*-statistics values are greater than the 1.96 threshold and, at the same time, their path coefficients are greater than 0.05).

We also explored the relationship between intention/attitude (IA) and various patterns of sustainability

FIGURE 5 Results of SEM Based on the Research Model



RET=renewable energy/transportation; RB=recycle behavior; WMR=waste management/reduction; PD=purchase decision; IA=intention/attitude; HC=health concern; QT=quality/trust; IS=income status; EC=environmental concern; EL=educational level; KI=knowledge/information; PP=price perception; LT=lack of time; GR=government regulations; CL=community leadership; RS=religious and social groups; EA=educational awareness.

consumption behavior. Evidence from Table 1 shows that all linkages within the patterns domain—that is: “IA → PD”; “IA → RB”; “IA → RET”; and “IA → WMR”—find statistical support and are statistically significant. However, since the researchers sought to determine the pattern that sustainable behavior manifests, the mean ranking done for patterns in Table 2 is helpful.

According to Table 2, the construct or dimension with the highest mean (i.e., 3.34), which is ranked first (1), is waste management/reduction (WMR). Purchase decision, with a mean of 3.04, ranks second (2). The third in the ranking is renewable energy/transportation

(RET), which ranks 2.97. The last in the rank order is recycle behavior, with a mean value of 2.78.

The mean value can also be viewed as the degree of manifestation or importance of the constructs to the respondents; therefore, to provide answers to the research propositions, we consider the two constructs with overall mean values that are above the cutoff mean value of 3.00. The constructs are waste management/reduction (WMR) and purchase decision (PD), which rank first and second, respectively. Hence, it can be construed that the forms sustainable consumption behavior mainly manifest are in WMR and PD.

TABLE 1 Results of Structural Equation Model Analysis

Proposed Relationship	Hypothesis (Proposition)	Path Coefficient	T-Statistics	Rejected/Supported
CL → IA	H <sub>6</sub> (P <sub>6</sub> )	-0.017	0.641	Not Supported
EA → IA	H <sub>2</sub> (P <sub>2</sub> )	0.150	5.836	Not Supported
EC → IA	H <sub>8</sub> (P <sub>8</sub> )	0.3291	0.054	Supported
EL → IA	H <sub>11</sub> (P <sub>11</sub> )	0.077	3.962	Supported
GR → IA	H <sub>5</sub> (P <sub>5</sub> )	0.080	3.092	Supported
HC → IA	H <sub>9</sub> (P <sub>9</sub> )	-0.105	4.116	Not Supported
IS → IA	H <sub>10</sub> (P <sub>10</sub> )	-0.039	1.678	Not Supported
KI → IA	H <sub>1</sub> (P <sub>1</sub> )	-0.044	2.175	Not Supported
LT → IA	H <sub>4</sub> (P <sub>4</sub> )	-0.024	1.166	Not Supported
PP → IA	H <sub>3</sub> (P <sub>3</sub> )	0.040	2.068	Supported
QT → IA	H <sub>12</sub> (P <sub>12</sub> )	-0.067	3.071	Not Supported
RS → IA	H <sub>7</sub> (P <sub>7</sub> )	0.114	4.153	Supported
IA → PD	H <sub>13</sub> (P <sub>13</sub> )	0.256	13.392	Supported
IA → RB	H <sub>14</sub> (P <sub>14</sub> )	0.256	10.319	Supported
IA → RET	H <sub>15</sub> (P <sub>15</sub> )	0.183	9.871	Supported
IA → WMR	H <sub>16</sub> (P <sub>16</sub> )	0.309	17.248	Supported

TABLE 2 Ranking of Overall Mean for Patterns of Sustainable Consumption

Dimension/Construct	Mean	Rank
Overall mean for waste management/reduction (WMR) items:	3.34	1
Overall mean for purchase decision (PD) items:	3.04	2
Overall mean for renewable energy/trans. (RET) items:	2.97	3
Overall mean for recycle behavior (RB) items:	2.78	4

The preceding findings can be conceptualized into the following posited PIF Sustainability Model/Theory, shown in Figure 6.

The posited PIF Sustainability Model depicted in Figure 6 argues that the three most critical inhibitors to sustainability intention/attitude in Nigeria (a typical SSA nation) are low educational awareness (EA), weak government regulations (GR), price perception (PP), and religious/social groups (RS). The PIF model also indicates that there are two key factors that can facilitate sustainability: environmental concern (EC) and high educational level. In addition, there are two major ways through which sustainability patterns manifest in Nigeria

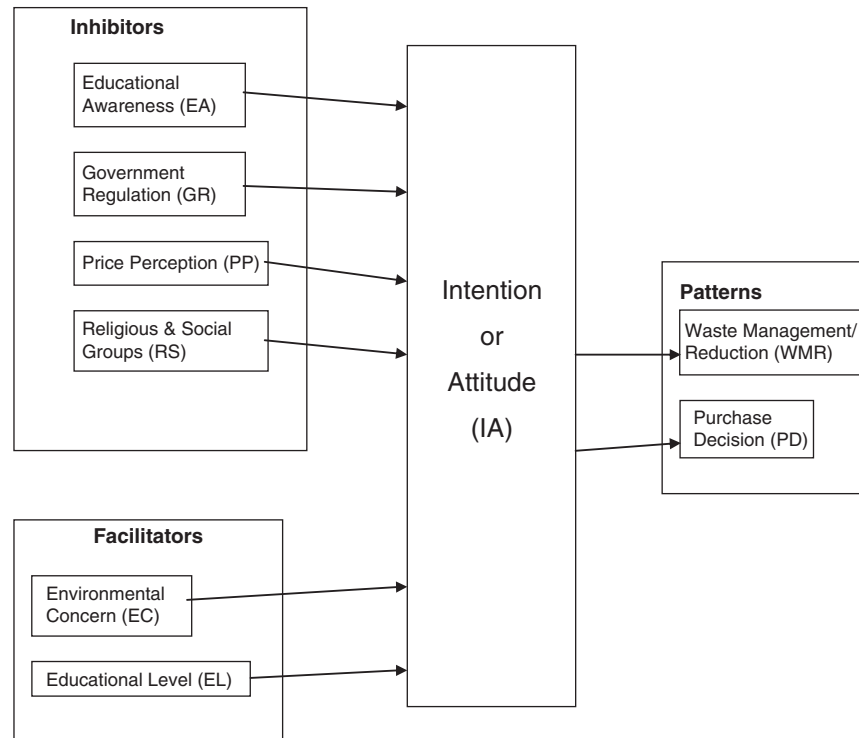
(a typical SSA country) and they are in form of waste management/reduction (WMR) and green purchase decision (PD).

Overall, Figure 6 clearly depict the combined effect of key inhibitors and facilitators of sustainable consumption on sustainability intention/attitude; and by extension, revealing the main patterns by which sustainability behavior manifest in Nigeria (a typical SSA country). With caution, this finding can be generalized to similar SSA countries.

## Summary and Conclusion

The main thrust of this paper is to position and put forward the PIF conceptual framework to guide emergent sustainable consumption studies from the SSA region. Pointedly, this conceptual paper demonstrates the importance of an integrative conceptual framework to guide basic research from developing countries within the sustainable consumption behavior theme. Previous integrative conceptual frameworks did not totally capture and incorporate the sustainability features of the SSA, thereby limiting their application and utility. Consistent with the peculiarities of the SSA region, the PIF conceptual framework argues that a good starting

FIGURE 6 The PIF Sustainable Consumption Model



Source: Authors' conceptualization.

point for studies in developing countries (especially in SSA) is to unearth the patterns, inhibitors, and facilitators of sustainable consumption behavior at the micro level since debate and research from the area is still embryonic.

To provide preliminary validation for the PIF conceptual framework, SEM was used to test the proposed relationships based on a pilot survey, using primary data collected from Nigeria, a typical SSA country. Support was found for a number of relationships, leading to the *PIF Sustainable Consumption Behavior model*. Agreeably, the PIF conceptual framework has eloquently shown and proven to be a dependable framework that will guide thinking in

the conceptualization of research schemas for emerging sustainable consumption studies from the SSA and other developing countries context. In addition, the proposed conceptual framework has a policy implication dimension in that it could provide insight for sustainability related policy prescription for those in policymaking and implementation positions. The key managerial implication is that the PIF conceptual framework will guide studies that will explore what motivates consumer behavior in order to develop recommendations on how companies can engage the consumer and use those motivators to encourage sustainable consumption and create business value.



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