

Do green knowledge and attitude influence the youth's green purchasing? Theory of planned behavior

Youth green
purchasing
behavior

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Abstract

Purpose – The paper examines the role of green knowledge and green attitude in purchasing behavior of the youth in Ghana. This study focuses on investigating how green value and green trust mediates the relationship between green knowledge and green attitude and purchase behavior of the youth in Ghana.

Design/methodology/approach – A quantitative approach was used. A total of 417 respondents were selected using convenient sampling method. Respondents were selected at leading shopping malls (grocery stores) in Accra the national capital of Ghana. Data was analyzed using the partial least square (PLS). Structural equation modeling (SEM) was used to investigate the relationship among the variables.

Findings – The findings indicate that there is a positive and significant relationship between green knowledge and purchasing behavior and also that there is a positive and significant relationship between green attitude and purchasing behavior. The findings revealed further that green trust do not mediate the relationship between green knowledge and purchasing behavior but green value does. The findings suggest that green value is more important in purchasing decision of the youth in Ghana than trust.

Research limitations/implications – Research is essentially cross-sectional and longitudinal studies and can validate findings in the long term. The researchers admit that this research work which is carried out only in Ghana cannot be used to generalize an assumption for the entire youth in Africa and beyond. The sample size could be improved and the study could be conducted in other African countries for the purposes of comparison.

Practical implications – Business managers who are interested in sustainability of their firms and society at large can be guided by this insight that green knowledge and attitude influence purchase decisions of the youth. The findings that green trust do not mediate the relationship between green knowledge and purchasing behavior but green value does will guide managers on marketing and communication strategies especially toward the youth.

Originality/value – The model argues that the youth purchasing behavior is influenced by green knowledge and attitude. The model suggests that that green value is more important in purchasing decision of the youth in Ghana than trust. The model further points out that green trust do not mediate the relationship between green knowledge and purchasing behavior.

Keywords Ghana, Green marketing, Youth

Paper type Research paper

1. Introduction

Environmental consciousness among consumers globally is gaining positive attention; as a result, promoting green consumption to ensure healthy living and protection of the environment is gaining acceptance (Yu *et al.*, 2018; Dangelico and Vocalelli, 2017). As part of the Sustainable Development Goals (SDGs), nations seek to protect the Earth from rapid degradation to ensure prosperous living standards by 2030 (United Nations, 2015; Zinkernagel *et al.*, 2018; Briceño and Santos, 2019). Hence, Goal 12 of the 2030 global agenda seeks to attain sustainable consumption and production that protect the environment because a sustainable environment remains fundamental to human survival and wellbeing on Earth.



The outcome of Rio+20 requires all, especially corporate organizations, to produce universally acceptable sustainable brands (Singer, 2012). It is, therefore, in the interest of business organizations that want to be competitive to find innovative ways to promote sustainable healthy consumption that simultaneously protects the environment while promoting green marketing policies to their customers.

This study seeks to understand how the youth's knowledge and attitude toward sustainable greener environments influence green consumption in Ghana. Available marketing literature suggests that marketing research for decades has focused on investigating the impact of marketing strategies on the environment (Polonsky, 2011; Chamorro *et al.*, 2009; Menon and Menon, 1997; Fisk, 1974; Henion and Kinnear, 1976) by identifying the link between the environment and consumer conduct (Diamantopoulos *et al.*, 2003). Fisk (1974) believes that marketing can partly be blamed for the world's environmental challenges, which are as a result of consumption and over-consumption behavior. Conversely, other researchers further argue that marketing strategies could be used to address the critical environmental challenges confronting humanity (Polonsky, 2011; Sheth and Sisodia, 2006). Consequently, marketing experts must have a paradigm shift by rethinking along the path of transformative green marketing to reform marketing policies as well as utilizing societal marketing philosophy that thrives on green marketing concepts (Sheth and Sisodia, 2006).

Green marketing promotes environmental and societal wellbeing (Sharma and Trivedi, 2016). Polonsky (2011) defines green marketing, using terms such as ecological marketing, as environmental marketing policies responsible for driving the marketing exchange process between product choices and consumer decisions to minimize environmental harm. In this regard, consumers and society must aspire for sustainable environmental protection. Also, green marketing principles seek to build sustainable capacity by promoting green products and brands that are deemed to be environmentally safe for healthy consumption (Solvalier, 2010). Likewise, they promote green marketing policies that call for green production and consumption. Hence, Gheorghiu *et al.* (2013) call for eco-marketing strategies that are targeted at green consumers who seek to deliberately protect the environment through the consumption of green brands.

Furthermore, in recent times, many marketing researchers are seeking to explore the connection between green marketing and green consumption behavior by identifying the opportunities and challenges associated with this relationship. Also, in the developed as well as the developing world, marketers are confidently promoting consumption of green brands; thus, winning the hearts of green skeptics to become ardent green consumers and green brand advocates (Kong and Zhang, 2013; Matthes, Wonneberger and Schmuck, 2014; Matthes and Wonneberger, 2014). However, some consumers continue to exercise conscious judgment as their purchase behavior is influenced by experience and knowledge.

Consumers' environmental knowledge indicates their appreciation of the environment as a vital variable for sustainable life and development (Fryxell and Lo, 2003). Consumers' environmental knowledge promotes eco-friendly behavior in brand choice (Peattie, 2010; Yadav and Pathak, 2016) as it affects eco-friendly purchase intent and behavior (Wang *et al.*, 2014). Consumers' environmental attitude, on the other hand, depicts consumer behavior, indicating favorable or unfavorable behavior; hence, highlighting a sustainable environment through consumers' attitude toward green brands (Ajzen, 1991). Indeed, a favorable brand attitude promotes positive purchase behavior and positive corporate outcome (Han *et al.*, 2010).

Ghana, a lower-middle-income developing economy, has a high youth population, just like other emerging economies (Blose *et al.*, 2020). Ghana's youth make up approximately 57% of the total Ghanaian population under age 25. The youth are consumers between 15 and 30 years (Reisinger and Mavondo, 2002). Also, Richards (2007) perceives the youth cohort to be between 16 and 24 years (Kasim and Wickens, 2020; Ahmad *et al.*, 2012). Globally, 50.5% of

the world's population is under age 30, out of which 89.7% live in developing countries (UNESCO, 2013).

Interestingly, it is the hope of many societies that young consumers become green consumers who consciously take advantage of new corporate and government policies for sustainable environmental behavior. However, unfortunately, this cohort of consumers is becoming materialistic consumers due to increasing social interaction, self-expressive behavior and social inclusion (Bentley *et al.*, 2004; Perera and Hewege, 2013); a phenomenon attributable to the Internet and social media. Nevertheless, the youth constitute the principal marketing target for small, medium, large and multinational organizations.

From the foregoing discussion, it is pertinent to ask critical questions to set the tone for the study: "Are the youth conscious of the environment and its sustainability, and if they are, what is their perception of green marketing?" This study, therefore, seeks to understand how the knowledge of the youth and their attitude toward sustainable green environments influence green consumption in Ghana. The rest of this study is structured into four thematic areas, covering theory and literature review, methodology, data analysis and interpretation and managerial implications of the findings of the study. Table 1 highlights previous studies and their findings on green marketing.

2. Literature review and hypotheses development

2.1 Theory of planned behavior

The theory of planned behavior (TPB) was propounded by Ajzen in 1985. According to the theory, three variables (conduct, subjective norms and perceived behavioral control) are central to the formation of behavioral intention, which sequentially affects human conduct (Ajzen, 1991). One's attitude toward a behavior denotes the level to which he/she perceives that particular behavior as good or bad (Ajzen, 1991). The TPB suggests that the more favorable a person's attitude toward a behavior, the higher the probability of the individual copying that behavior (Yadav and Pathak, 2016). Individuals tend to show positive attitudes when they positively evaluate behavioral outcomes; this positive evaluation makes them more likely to engage in certain behaviors (Ajzen, 1991; Han *et al.*, 2010).

Subjective norms refer to the perceptions of the social burden to engage or not to engage in a particular type of conduct (Ajzen, 1991). Subjective norms deal with the views of people who are important to an individual and have an impact on the person's decision making (Paul *et al.*, 2016). Per the TPB, if a person believes that individuals who are important to him/her either accept or condemn a certain behavior, he might or may not engage in that behavior (Han *et al.*, 2010). Conversely, perceived behavioral control indicates how easy or hard it is for a person to behave in a certain way (Ajzen, 1991).

The TPB has been used for predicting intention and behavior in various disciplines (Chen *et al.*, 2009; Han *et al.*, 2010). Empirical findings seem to suggest that the theory is useful in explaining pro-environmental behavior (Yadav and Pathak, 2016). For instance, TPB has been applied to subjects like green hotels and restaurants (Han *et al.*, 2010), energy-efficient products (Tan *et al.*, 2017) and green products (Yadav and Pathak, 2016). The results from these studies have proved the applicability and robustness of TPB and provided strong empirical support for the application of the theory in predicting pro-environmental behavior.

2.2 Green marketing

The green marketing concept evolved from the classical marketing concept around the 1980s (Chahal *et al.*, 2014). The green revolution is vital to the marketing discipline as firms perceive it as a unique opportunity to enable them to attain their marketing objectives (Prakash, 2002). The link between marketing and environmental protection has been defined in various ways, including environmental marketing (Coddington, 1993), ecological marketing (Fisk, 1974),

Author	Focus	Findings
Mohd Suki (2016)	Impact of green brand positioning, attitudes and knowledge on purchase intention of green products	Green brand knowledge is the most significant predictor of green purchase intention. Green brand knowledge does not moderate the relationship between green brand positioning and purchase green intention
Chen and Chang (2012)	Roles of green perceived value, green perceived risk and green trust in influencing purchase intentions	Green perceived value has a positive relationship with green trust and purchase intention. Green perceived risk negatively influences green trust and purchase intention
Tan <i>et al.</i> (2017)	Predicting consumer purchase intention of energy efficient household products	Consumer attitudes and perceived behavioral control significantly influence purchase intentions
Chen (2013)	Building green loyalty through green perceived value, green satisfaction and green trust	Green perceived values, green trust and green satisfaction influence green loyalty. Green perceived value influences green loyalty indirectly through green satisfaction
Hur <i>et al.</i> (2013)	To assess the relationship between green consumption value, satisfaction and loyalty among elderly consumers	The social, price and quality values of elderly consumers positively influenced their satisfaction with hybrid car experience and this in turn influenced loyalty
Lin <i>et al.</i> (2017)	Examine consumers' perceptions of a brand's green benefits and transparency on the their green perceived value	Utilitarian environmental benefits and green transparency positively influenced green perceived value of physical product consumers, whereas warm glow benefits and green transparency positively influenced green perceived value of consumers of services
Wu <i>et al.</i> (2018)	Assess the link between green experiential quality, green relationship quality and green experiential loyalty in a business to business context	Environmental friendliness directly influences green trust and green experiential satisfaction. Green experiential satisfaction has a significant effect on green support and green desire. Green trust, green experiential satisfaction and green support contribute to green experiential loyalty
Lee (2009)	The effect of gender on environmental attitudes and environmental concern	Female consumers showed a more favorable attitude toward pro environmental behavior than male consumers
Lin and Niu (2018)	The effect of environmental consciousness, environmental knowledge and social norms on purchasing behavior	Consumers' knowledge about the environment, environmental consciousness and social norms have a positive effect on environmental attitude and sense of well-being and this influences their purchasing behavior

Table 1.
Summary of some
previous studies and
their findings

green marketing (Mishra and Sharma, 2010; Ottman, 1992; Pride and Ferell, 1993), sustainability marketing (Fuller, 1999) and green marketing (Polosky and Charter, 1999). Green marketing entails all actions linked to the enhancement of production processes, packaging and advertising (Chahal *et al.*, 2014). Firms utilize green marketing to carry out exchanges that satisfy consumer and societal needs and to create an avenue for development in a profitable manner with less adverse effects on the natural environment (Chahal *et al.*, 2014). Green marketing is described as different firm activities that include recycling, building and revamping of buildings to be more environmentally friendly (Prakash, 2002).

Also, Cronin *et al.* (2011) indicate that green innovation, green processes and green alliances are the three major forms of green schemes. Again, green innovation is the creation of novel and groundbreaking green products (Cronin *et al.*, 2011). Green innovation sends positive signals to stakeholders that an organization is green (Cronin *et al.*, 2011). Green processes deal with the environmental friendliness of the firm's activities internally; hence, the emphasis is on ensuring that the processes involved in the production of goods or delivery of services are environmentally friendly (Chahal *et al.*, 2014).

Prior studies indicate that consumers' awareness of the environment has witnessed a surge, and consumers have become much more concerned about whether the products they purchase have an adverse ecological impact or not (Straughan and Roberts, 1999). This awareness seems to be high in advanced countries; however, there is also growing awareness in some emerging economies in Asia and South America like China and Brazil, respectively (Narula and Desore, 2016). The changing needs of consumers in relation to products and services that are more environmentally friendly have increased the importance of green marketing, and firms' response to these needs positively influences green products and process innovation (Narula and Desore, 2016). Table 2 summarizes some past studies and their findings.

2.3 Green buying behavior

Purchasing or buying behavior refers to a consumer's search or patronage of products, services or ideas to satisfy a particular need (Lin and Niu, 2018). Green buying behavior is the consumption of products that are good for the environment, biodegradable or take into consideration environmental issues (Lee, 2009). Green purchasing behavior has also been defined as the "affirmative selection and acquisition of products and services that most effectively minimize negative environmental impacts over their life cycle of manufacturing, transportation, use and recycling or disposal" (Vazifehdoust *et al.*, 2013, p. 2490). It is generally linked with buying in a responsible, principled, sustainable and environmentally friendly manner (Do Paco *et al.*, 2019). Purchase of energy-efficient products, avoidance of over-packaged products, showing a penchant for decomposable and recyclable items and reduction of pollution are all regarded as green purchasing behavior (Do Paco *et al.*, 2019).

The environmentally friendly characteristics consumers look out for in buying green products include less energy and water usage, minimal waste generation and release of minimal pollutants (Vazifehdoust *et al.*, 2013). Other environmentally-friendly features

Variable	Frequency	Percent	Variable	Frequency	Percent
<i>Gender</i>			<i>Marital status</i>		
Male	192	46.0	Private sector employee	75	18.0
Female	225	54.0	Self-employed	141	33.8
	417	100.0	Civil servant	65	15.6
<i>Age</i>			Public servant	114	27.3
18–21	65	15.6	Unemployed	22	5.3
22–30 yrs	190	45.6		417	100.0
31–40 yrs	162	38.8	<i>Income level</i>		
	417	100.0	Ghs 1,000	166	39.8
<i>Educational level</i>			Ghs 1,000–2,999	215	51.6
SHS	43	10.3	Ghs 3,000–4,999	17	4.1
Diploma	126	30.2	Ghs 5,000–6,900	10	2.4
Bachelor's degree	157	37.6	Ghs 7,000 above	2	0.5
Post graduate	91	21.8	NR	7	1.7
	417	100.0		417	100.0

Table 2.
Background
information of
respondents

consumers lookout for include items produced from recycled resources or products that can be reprocessed or recycled and power from renewable resources. Green consumers add environmental friendliness to the price and technical qualities of products when making buying decisions (Vazifehdoust *et al.*, 2013). Consumers who buy green products aim to minimize adverse environmental impact and to increase resource efficiency (Liobikiene *et al.*, 2016).

2.4 Green knowledge

Green knowledge is a person's capacity to understand and evaluate the effect the ecosystem has on society (Tan, 2011). Green knowledge also denotes the level of knowledge a consumer has about environmental issues (Mohd Suki, 2016). Green knowledge entails one's ability to recognize various ecologically related symbols, concepts and behavior (Laroche *et al.*, 2001). Green knowledge has two dimensions, i.e. abstract knowledge (knowledge that deals with causes of environmental problems and their solutions) and concrete behavioral knowledge (factual knowledge) (Schahn and Erwin, 1990). Green knowledge results in greater awareness of green issues, and it promotes favorable attitudes toward green products (Yadav and Pathak, 2016). Green knowledge has been linked to consumer intentions to buy environmentally friendly items (Mohd Suki, 2016). Also, knowledge about the environment is connected to pro-environmental intentions and attitudes (Yadav and Pathak, 2016).

Furthermore, theoretical literature suggests that green knowledge performs a significant role in pro-environmental behaviors; however, empirical results have been mixed and inconclusive (Laroche *et al.*, 2001; Vicente-Molina *et al.*, 2013). While some studies indicate that no significant connection exists between green knowledge and pro-environmental behavior (Laroche *et al.*, 2001), other researchers have revealed an important correlation between green knowledge and green purchasing behavior (Yadav and Pathak, 2016). Lack of knowledge about the environment or misinformation might reduce pro-environmental behavior (Vicente-Molina *et al.*, 2013). A study has revealed that over 60% of consumers in Canada feel that their pro-environmental behavior is hampered by a lack of knowledge (Kennedy *et al.*, 2009). Knowledge of environmental problems and their causes increases individuals' motivation to act responsibly toward the environment. The TPB postulates that perceived behavioral control depicts an individual's perceptions about having all means and opportunities to behave in a certain manner. Consistent with the TPB, we theorize that an individual's green knowledge increases their tendency to easily engage in green purchasing behavior. Per the above discussion, it is hypothesized that:

H1. Green knowledge significantly influences green purchasing behavior.

2.5 Green attitude

Attitude is "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly and Chaiken, 1993, p. 1). Attitude has been identified as a predictor of behavior (Casaló and Escario, 2018). Green attitude concentrates precisely on an individual's attitude as regards the environment, which contributes to conserving the environment, protecting natural resources or minimizing environmental degradation (Casaló and Escario, 2018). Environmental degradation is usually connected to the behavior of humans (Debora Indriani *et al.*, 2019). Subsequently, an attitude has been identified as a significant predictor of environmental behavior (Ojo *et al.*, 2019).

Also, empirical studies on the connection between green attitudes and green buying behavior have been inconclusive. While some studies reveal that green attitudes do not necessarily lead to eco-friendly actions (Casaló and Escario, 2018; Laroche *et al.*, 2001), other studies indicate that the adoption of green attitudes is necessary but not a sufficient driver of green purchasing behavior or pro-environmental action (Heimlich and Ardoin, 2008; Szerenyi

et al., 2011; Zsoka *et al.*, 2013). Again, several studies show that green attitudes are important predictors of pro-environmental behavior (Tan, 2011; Yadav and Pathak, 2016). The TPB posits that the more favorable an individual's attitude is toward a behavior, the higher the likelihood of him/her to act that way. Based on the foregoing discussion, we postulate that the more favorable consumers' green attitudes are, the higher the likelihood for them to buy green products. Hence, the following relationship is hypothesized:

H2. Green attitude significantly influences green purchasing behavior.

2.6 The mediating role of green trust

Trust refers to "the extent of expectation held by one party that it can rely on the word, promise, or statement of another party" (Rotter, 1971). Similarly, trust has been described as the level to which one is confident that someone or an organization will act as anticipated (Hart and Saunders, 1997). Trust arises because of three principles: honesty, kindness and ability (Schur and Ozanne, 1985). Hence, trust relates to the extent to which someone is willing to have faith in another person as a result of his/her belief in the other person's integrity, ability and kindness (Ganesan and Hess, 1997). When a party has good expectations of the intentions and behaviors of someone else, it will come out with products that create trust, which by implication, will help target customers create an intention to patronize the products (Wang *et al.*, 2011).

Moreover, green trust is "a willingness to depend on a product or service based on the belief or expectation resulting from its credibility, benevolence, and ability about environmental performance" (Chen, 2013, p. 297). When consumers are skeptical about environmental friendliness claims, they tend to likewise question the environmental dependability, usefulness and competence of a green product and this raises concerns about trustworthiness (Chen and Chang, 2012). Through interpersonal interactions, consumers establish a relationship of trust and cooperation with sellers (Wang *et al.*, 2019). However, if consumers' expectations are not consistent with their experience, their satisfaction greatly minimizes and influences their purchasing behavior (Wang *et al.*, 2019). Consumer trust in green products positively influences the sale of these products. Also, factors such as information and communication technology and third-party certification have aided in strengthening consumer trust (Wang *et al.*, 2019).

The findings of past studies have emphasized the importance of trust in creating sustainable competitive advantages (Casaló *et al.*, 2007; Chi, 2012). Trust has been found to aid consumers to overcome the doubts and risks involved in purchasing (Bonsón Ponte *et al.*, 2015; Kim, 2012). If trust exists in an exchange relationship, consumers' behavior is positively influenced, which positively influences their purchase behaviors. Green trust enhances the quality of a relationship by creating a tendency for consumers to believe that brands keep their promises regarding green performance (Kang and Hur, 2012). Chen and Chang's (2012) analysis reveals that green trust mediates the connection between the antecedents of green purchase goals and buying intention. Green knowledge reduces consumers' uncertainty as reliable information on the environment influences consumers' attitudes toward green brands. Lin and Niu (2018) assert that green knowledge reveals people's perceptions about their duties toward the environment, and this influences their environmental behavior. The findings of some studies have also indicated a positive association between high levels of green knowledge and positive environmental behavior (Law *et al.*, 2017). Positive green attitudes are positively linked to environmental behavior (Lin and Niu, 2018). Based on the above discussion, it is hypothesized that:

H3. Green trust mediates the association between green knowledge and green purchasing behavior.

H4. Green trust mediates the link between green attitude and green purchasing behavior.

2.7 *The mediating role of green perceived value*

Consumers make their judgments usually based on limited information; hence, perceived value influences their purchasing behaviors (Chen and Chang, 2012). Perceived value refers to a set of features linked with the perceptions of the value of a product (Sweeney and Soutar, 2001). Perceived value is part of the significant predictors of customer purchase behavior (Chen and Chang, 2012). Poor perception of value could lead to a reduction in consumer purchase intentions (Sweeney and Soutar, 2001). Since some firms engage in greenwashing, customers have become skeptical about the greenness of products; as a result, perceived value has become very important to green marketing (Hur et al., 2013). Consumers make their purchase decisions based on their knowledge or awareness, and this knowledge influences their perceptions and behavior (Tan, 2011). Perceived value is vital both in building long-term relationships and influencing buying intentions (Zhuang et al., 2010). Perceived value has been found to positively impact consumer trust and green purchase intentions (Chen and Chang, 2012). Perceived value is considered as an important determinant of customer satisfaction (Zeithaml, 1988). Green perceived value is a vital factor of a green brand's standing (Hartmann and Apaolaza-ibáñez, 2012). Attempts have been made by scholars to develop perceived value from a green point of view (Chen and Chang, 2012). Green perceived value is defined as "a consumer's overall appraisal of the net benefits of a product or service between what is received and what is given based on the consumer's environmental desires, sustainable expectations, and green needs" (Chen and Chang, 2012, p. 505). The perceived value of green products is affected by a customer's subjective evaluation of his/her green desires, expectations and needs. Consumers' search for functional and emotional gratification allows marketers to comprehend overall green perceived value (Lin et al., 2017). In addition to functional and emotional gratification, buyers' expectations with regard to a business's moral commitment to the environment affect their purchasing behavior (Lin et al., 2017).

Green's perceived value has demonstrated a positive connection with green buying intentions (Chen, 2013). Prior studies have also revealed that green perceived value influences the formation of relationships between buyers and brands by enhancing green satisfaction and trust (Wu et al., 2018). Also, Cheng and Chang (2012) assert that green perceived value influences loyalty toward green products, and it has a significant favorable effect on green trust and satisfaction. Individuals who have greater levels of green knowledge would probably have greater perceptions of value and this could, in turn, influence their purchase behaviors. For instance, Tan (2011) asserts that high levels of green knowledge positively influence consumers' perceptions of green products. Furthermore, perceived green knowledge has been linked to higher perceptions of value, which influence consumers' willingness to pay higher prices for green products (Tsen et al., 2006). In the same vein, the current study postulates that green attitudes influence consumer perceptions about green perceived values. Based on this, it is hypothesized that:

- H5. Green perceived value mediates the association between green knowledge and green purchasing behavior.
- H6. Green perceived value mediates the association between green attitude and green purchasing behavior.

2.8 *Green satisfaction*

Consumer satisfaction is the assessment of the expectations of a consumer before the purchase of a product against the results after the purchase. Mai and Ness (1999), simply, describe satisfaction as "a general feeling of pleasure or gratification experienced by users of products arising from the ability of the product to fulfill expectations, desires, and needs." In this study, "green satisfaction" as a variable is conceptualized as the "pleasure level of green consumption, which fulfills customer environmental desires, including sustainable

expectations and green needs.” Other leading authors suggest that image and consumer satisfaction are positively linked (Chang and Tu, 2005; Martenson, 2007). In the context of the environment, green satisfaction is linked to a customer’s feeling that their green consumption is pleasurable because the performance of the product meets or exceeds their expectation (Mohd Suki, 2017).

Green customer satisfaction, according to Oliver (1997; 2006), Bansal (2005) and Barnett (2007), is the recognition that consumers associate with the consumption of green products, which fulfills a green need or desire about the environment that is considered to be pleasurable. Green satisfaction outcomes through consumption result in performance that is either meeting or exceeding the green aspiration of customers, which is in line with environmental guidelines, and ultimately in line with sustainable environmental goals (Chang and Fong, 2010).

3. Methodology

3.1 Sample

The study employs a case study approach to investigate how green knowledge and attitude influence the youth’s green purchasing behavior. This approach has been chosen because a case study allows researchers to perform a systematic in-depth inquiry into any phenomenon (Bromley, 1991). In order to fully appreciate green marketing and its impact on the youth’s purchase decisions, 417 respondents were selected utilizing the convenient sampling method. Respondents were selected at four leading shopping malls in Accra, the capital of Ghana. The malls selected include A&C Shopping Mall, Achimota Mall, Accra Mall, and the Junction Mall, where respondents were engaged face-to-face to participate in the study.

3.2 Measures

With the aid of structured close-ended statements, participants were asked to show their level of agreement or disagreement using a measured four-Likert rating scale where: Strongly Agree (SA) = 4, Agree (A) = 3, Strongly Disagree (SD) = 2, Disagree (D) = 1 and Neutral (N) = 0. The scale allowed participants to easily respond to questions. The research tool contained constructs or variables linked to green marketing; these green marketing constructs were adapted based on the knowledge of green marketing (Mohd Suki, 2016; Tan, 2011), green attitude (Casaló and Escario, 2018), green trust (Kang and Hur, 2012), green value (Tsen *et al.*, 2006), green loyalty (Chen, 2013) and green satisfaction. Data were analyzed using partial least square (PLS). Structural equation modeling (SEM) was employed to investigate the relationship between the factors. SEM was selected because it can analyze small and large data sets (Khan *et al.*, 2019). PLS-SEM is no more a substitute for covariance-based SEM as it has metamorphosed into a stand-alone system that has the capacity to solve real-life statistical issues (Latan and Noonan, 2017). The structured path showed regression weights explaining the relationships between the variables of green marketing and purchasing behavior. In addition, the second section of the instrument touched on the background of participants, including age, annual income, gender and educational background.

4. Findings

4.1 Descriptive statistics

Table 2 depicts the descriptive statistics and characteristics of the respondents. The majority (54.0%) of the participants were females, while 46.0% were males. The results show that 190 (45.6%) of them were between 22 and 30 years. This was followed by participants between 31 and 40 years (38.8%) and 18–21 years (15.6%). The results reveal that the respondents comprised the youth between 18 and 40 years. Three in five (59.4%) respondents had either

Table 3.
Green marketing –
descriptive statistics

an undergraduate or post-graduate education. Other qualifications included diploma (30.2%) and SHS certificate (10.3%). A third (33.8%) of the respondents were self-employed. This was followed by those who were public and civil servants (42.9%), private sector employees (18%) and those who were unemployed (5.2%). Over half (51.6%) of the respondents earned between GHC1000 and GHC3000 per month, whereas about 39.8% of them earned below GHc1000 per month.

Descriptive statistics were performed for the five main constructs of the study in the form of mean and standard deviations since Likert scales are ordinal/interval scales. The findings presented in Table 3 show that a mean of approximately 4 (Agreed) was obtained for knowledge of green marketing and attitudes toward green products, implying that the respondents agreed that they knew what green marketing/products represented. Also, attitudes toward green marketing and green products were generally favorable. These imply that the perceptions of Ghanaian youth with regard to green marketing are generally positive. A mean of approximately 3 (neutral) was obtained for the remaining four constructs, including green trust, green purchasing behavior and green value, implying that the respondents neither agreed nor disagreed with the existence of green trust, green purchasing behavior and green value.

4.2 Measurement model authentication

The results of the confirmatory factor analysis performed are shown in Table 4. The measurement model involved the effects of green marketing on purchasing behavior, green trust and green value. All the factors were modeled reflectively. The model's standard criteria were evaluated after purification. Cronbach's alpha, composite reliability and average variance

Construct	Min	Max	Mean	SD
Green marketing knowledge	1.000	5.00	3.56	1.20
Green attitude	1.000	5.00	3.50	1.17
Green trust	1.000	5.00	3.43	1.16
Green purchasing behavior	1.000	5.00	3.41	1.11
Green value	1.000	5.00	3.47	1.14

Table 4.
Reliability and validity
of reflective constructs

Construct	Convergent validity			Fornell–Larcker Criterion				
	α	CR	AVE	1	2	3	4	5
1. Green Mkt. Knowledge	0.929	0.949	0.824	0.908				
2. Green attitude	0.931	0.951	0.828	0.806	0.910			
3. Green trust	0.928	0.949	0.822	0.800	0.799	0.907		
4. Green purchasing Beh	0.919	0.943	0.805	0.781	0.755	0.775	0.897	
5. Green value	0.908	0.936	0.784	0.772	0.768	0.733	0.830	0.886

Heterotrait–monotrait ratio (HTMT) ratio inference criterion					
Construct	1	2	3	4	5
1. Green Mkt. knowledge					
2. Green attitude	0.866				
3. Green trust	0.860	0.857			
4. Green purchasing Beh	0.846	0.816	0.838		
5. Green value	0.840	0.834	0.798	0.908	

extracted values all attained the lowest values of 0.7, 0.7 and 0.5, respectively, as proposed by Hair *et al.* (2016). Therefore, convergent validity was achieved. Discriminant validity was achieved as the square root of the average variance extracted values for every one of the five factors was higher than the inter-construct connections between them (Fornell and Larcker, 1981; Thompson *et al.*, 1995). In addition to Fornell and Larcker's criteria, discriminant validity was measured with the heterotrait–monotrait ratio inference method ($HTMT_{inference}$) (Henseler *et al.*, 2015), a recommended approach for variance-based SEM. The outcomes given in Table 4 demonstrate that all the connections fall within $-1 < HTMT_{inference} < 1$. This indicates that every single factor is different and varies from other constructs in the model; as a result, the five-construct model indicates discriminant validity.

4.3 Structural model assessment

To assess the connection between green marketing and buying behavior, the researcher utilized the technique of PLS-SEM (SmartPLS Release: 3.2.7 (Ringle *et al.*, 2015). PLS is usually not impacted by sample size (Chin, 2010; Hair *et al.*, 2011) or the distribution of data (Wold, 1982; Chin and Newstead, 1999). The implication of every path was checked utilizing bootstrap *t*-values (5,000 sub-samples) (Tortosa *et al.*, 2009), a procedure accessible in PLS.

Results in Figure 1 demonstrate that the connection between green knowledge and green buying behavior is positive and substantial at the 0.05 significant level, thereby supporting H1 ($\beta = 0.183$, p -value = 0.019, $p \leq 0.05$). Similarly, green attitude shows a favorable and significant association with green buying behavior, thereby supporting H2 ($\beta = 0.229$, p -value = 0.000, $p \leq 0.01$).

The mediation test results in Table 5 show that trust does not mediate the link between green knowledge and green buying behavior ($\beta = 0.006$, n.s. VAF = 3.30%); thus, hypothesis H3 is not affirmed. Similarly, trust does not mediate the association between green attitude and green buying behavior ($\beta = 0.006$, n.s. VAF = 2.61%), thereby not supporting hypothesis H4. On the other hand, the value is found to partially mediate the impact of green knowledge ($\beta = 0.180$, $p \leq 0.01$, VAF = 44.02%) and green attitude ($\beta = 0.248$, $p \leq 0.01$, VAF = 57.54%) on green purchasing behavior, thereby, supporting hypotheses H5 and H6, respectively.

5. Discussion

Results in Figure 1 demonstrate that the connection between green knowledge and green buying behavior is positive and substantial at the 0.05 significant level, thereby supporting

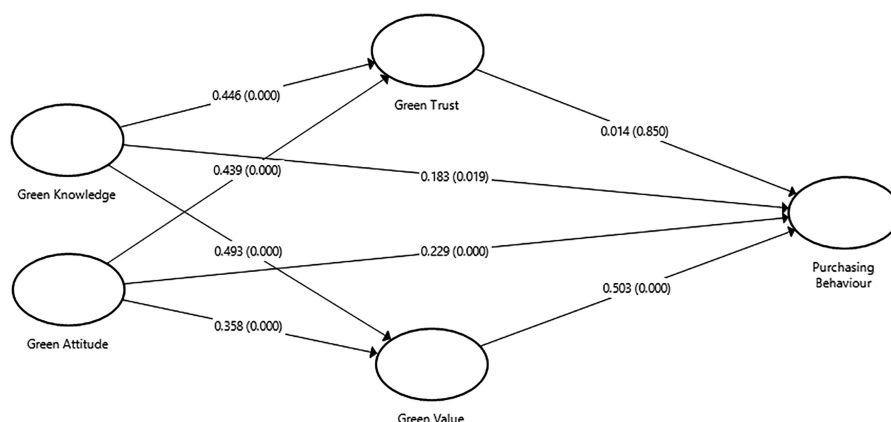


Figure 1.
Test results

H1 ($\beta = 0.183, p\text{-value} = 0.019, p \leq 0.05$). Similarly, green attitude shows a favorable and significant association with green buying behavior, thereby supporting H2 ($\beta = 0.229, p\text{-value} = 0.000, p \leq 0.01$). All measures (VAF above 30%) in Table 4 indicate partial mediation from attitude and knowledge to purchasing behavior via green value while pointing to no mediation (VAF less than 10%) via trust and purchasing behavior. This implies that green knowledge and green attitude are important, but green value is also important as it affects purchase behavior.

The results of this research have confirmed the theory of predicting pro-environmental behavior. The study also has confirmed earlier research by Yadav and Pathak (2016), which indicates that a green attitude influences buying behavior. The findings of this study reveal further that green knowledge influences purchasing behavior. This confirms earlier research by Tan (2011) and Law et al. (2017), which indicate that green knowledge positively influences consumers' perceptions about green products. This implies that purchasing behavior is consequently influenced by green knowledge. The findings indicate that green value mediates the connection between green knowledge and purchasing behavior, which confirms an earlier study by Hur et al. (2013) on the importance of value in green marketing strategies.

5.1 Theoretical contribution

Sustainability issue in business today is an important aspect of business. The youth, particularly, are usually perceived as strong drivers of green marketing because environmental sustainability affects their economic and social wellbeing as enshrined in the United Nations' sustainable development goals. Green marketing in academic literature is gaining more attention. Nevertheless, not much is known about how concepts like green knowledge and green attitude are influencing the social and purchasing behavior of the youth in sub-Saharan Africa, particularly Ghana. Hence, the significance of this study. Academically, the outcome of this study indicates clearly that business managers and academics have to consider the various green variables that influence the purchasing decision of the youth who constitute the majority of consumers in Africa. The study's findings point out that sustainability issues have become a general concern for the youth in both developed and emerging economies.

5.2 Managerial implications

Business managers who are interested in the sustainability of their firms and society at large could be directed by this understanding that green knowledge and attitude influence the purchase decisions of the youth. The findings demonstrate that green trust does not mediate the connection between green knowledge and purchasing behavior, but green value could guide managers in terms of marketing and communication strategies, especially in relation to the youth. Hence, firms have to improve their green knowledge to increase green buying behavior. The findings suggest that green value is more important in the purchasing decisions of the youth in Ghana than trust. Corporate leaders concerned with green sustainability should carefully develop and implement sustainable green strategies that are targeted at the youth as essential stakeholders of green knowledge. Such initiatives should be

Table 5.
Mediation path results

Specific Indirect effect (Mediation path)	Effect	VAF	Remark
Attitude→trust→purchasing behavior	0.006	3.30%	No mediation
Knowledge→trust→purchasing behavior	0.006	2.61%	No Mediation
Attitude→value→purchasing behavior	0.180*	44.02%	Partial mediation
Knowledge→value→purchasing behavior	0.248*	57.54%	Partial mediation

anchored on green knowledge and green principles and their benefits to the broader society. This demands adequate budgetary support and commitment from top management for positive, sustainable green outcomes.

These findings can guide policymakers in developing environmental policies for both private and public sector firms. Governments can enact policies based on these findings to encourage the participation of the youth in sustainable development activities. For example, the youth who patronize products from firms practicing green manufacturing and marketing can be rewarded through a raffle system at the point of sales. At the community level, leaders in charge of institutions such as churches, mosques and other notable change institutions should demonstrate love and protection of the environment to positively influence the youth's appreciation of green knowledge and practice.

Finally, because major green environmental challenges are highly associated with human behavior, corporate communication managers should direct green messages toward re-orienting the behavior of the youth to protect and sustain the environment through green consumption (Mukonza and Swarts, 2020; Steg and Vlek, 2009).

6. Conclusion

The model argues that the youth's purchasing behavior is influenced by green knowledge and attitude. The model suggests that that green value is more important in the purchasing decisions of the youth in Ghana than trust. The model further points out that green trust does not mediate the connection between green knowledge and purchasing behavior. A study by Chaplin and O'Rourke (2018) suggests that when companies implement green strategies, they drive continuous improvement, which enhances integration with all stakeholders. Furthermore, Thanki and Thakkar (2018) confirm in their research that green supply chain activities can improve both operational and environmental performance. This can lead to attracting more customers due to possibly lower prices and, hence, more purchases.

6.1 Limitation and future research direction

In this study, general purchase behavior was analyzed. Future research can focus on and analyze separate categories like green (organic) food, cosmetic, personal care, fast-moving consumer goods and appliances. According to Liobikiene *et al.* (2016), in a research carried out in the European Union, an element, which highly affects green purchase behaviors in most states in the EU is knowledge and trust in green products. It will be interesting to replicate this research in African Union countries.

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