RESEARCH ARTICLE

Environmental Concerns, Green Consumption Value and Green Buying Intentions

Edward Markwei Martey[1]*, George Dominic Kofi Mante[1], Bernice KorKor Gligah[2], Patricia Crentsil[3], Angela Adofoa Twumasi[4]

[1]Marketing Department, Koforidua Technical University, Koforidua, Eastern Region, Ghana

[2]Faculty of Business and Management Studies, Koforidua Technical University, Koforidua, Ghana

[3]Faculty of Economics and Management, Sumy National Agrarian University, Sumy, Sumy Oblast, Ukraine

[4]University of Environment and Sustainable Development, Somanya, Ghana

*Correspondence Author: Edward Markwei Martey; martey.edward@ktu.edu.gh

Abstract: The research developed a framework to investigate the influence of green consumption value and green buying intentions using the behavioral reasoning theory to look at the gap between attitudes and intentions. A cross-sectional research design was used to collect data from 698 respondents in Ghana. The result shows a positive and significant association between buying green foods and attitudes toward green foods, and motive against buying green foods have a non-significant relationship with attitudes to green foods; there is a positive significant association between green consumption value and attitudes toward green foods, motives for buying green foods, and motives against buying green foods. The mediation of motives for buying green foods on green consumption value and attitudes to green foods is positive. Motives for buying green foods influence green buying intentions through attitudes toward green products. And mediation of motives against buying green foods on green consumption value and attitudes to green foods is negative and does not harm green buying intentions using attitudes to green foods. Governments must reward individuals or groups that protect the environment and also put together educated programs that spell out the consequences of a degraded environment to the nation.

***Keywords*:** Attitudes; Green; Food environment; Motives

1. Introduction

Over the years, the rise in environmental issues has been a threat to the life of humans and animals. This has

doi: 10.18063/esp.v7.i2.1508

Received: Dec 15, 2022; Accepted: Feb 23, 2023; Published online: Mar 20, 2023.

led to the wasting of food[1], overuse of items[2], absence of clean water, and extreme power consumption. This has put pressure on the scarce resources available as the population and consumption rate increase[3]. One best way to achieve the Sustainable Development Goal (SDG) 12 is to change individual lifestyles towards production and consumption. One of these lifestyle changes is to motivate individuals to purchase green foods without any adverse influence on the environment[4]. Numerous markets have put in place environmental programs to shift customers buying behavior to green products[5]. Nevertheless, emerging economies have chosen economic growth over environmental degradation[5]. The researchers used Ghana as an example, where about 42% of Ghanaian consumers are concerned about the environment[6]. There is a good call to change customers' way of life to achieve SDG 12 in the Ghanaian setting as stark ecological concerns in Ghana would affect the whole biosphere[7]. The media in Ghana and another part of the world has consistently talked about the hostile influences on the environment through individual consumption behavior and firms' production activities[8].

Numerous firms all over the world have begun to spend a lot of money on research work that will lead to green production[9]. Notwithstanding the organizations' efforts, many individuals do not buy green foods. Green food is food that is produced and sold to customers and does not affect the environment. Researchers have proven that customers in Ghana are concerned about environmental issues[10]. However, these concerns have not been converted into buying green products[11]. This turn of events is of great concern to firms that have spent a lot of money on green products each day. To fill this gap, marketing practitioners must spend more time understanding the psychological procedures customers go through before making a buying decision[5].

The research scholars have applied different theories to give details on customers' decision-making on green products: the theory of planned behavior (TPB), the attitude-behavior context (ABC) model, and the value belief norm (VBN) theory. Many researchers used the value belief norm framework to demonstrate customer buying intentions for green products[12]. But the theory did not take care of external factors that constrain buying decisions such as availability, social norms, and government policies. Besides, the ABC theory suggested that an individual buying decision is also influenced by external factors which affect buying behaviors[13]. Researchers have used ABC to examine consumers' tendencies toward environmental practices[12]. ABC added external factors that restrict green buying by looking at knowledge and limited financial resources. Due to this result, other scholars have used TPB broadly in their work on green consumption[10,12]. TPB has explained that positive attitudes and norms drive buying intentions of green products[14]. Though TPB has been very often, the result has always shown that the link between attitudes and buying intentions is not strong[15,16].

Due to this, many researchers have introduced new elements such as environmental issues, perception, and knowledge in their studies[12,17]. Behavioral Reasoning Theory (BRT) extended to TPB by integrating setting-specific motives that influence attitudes[18]. Organic food is costly[19] and is high-involving product[20]. This demonstrates that customers take their time to search for information and evaluate them before making a decision[20]. This means customers examine all motives earlier to deciding to purchase a green product. Therefore, the research seeks to address the questions in the work. 1) What is the influence of green consumption value on motives for, motives against, and attitudes to buying green foods? 2) What is the impact of motives for, against, and consumer attitudes on green foods on green buying intentions? 3) Does motives for, against and consumer attitudes mediate green consumption and green buy intentions?

The researchers emphasized consumption values due to previous values adopted to under-examine green buying behaviors are altruism biosphere values, egoistic values, cultural values, and materialistic values. These values belong to either the self or the environment. The past finding shows that customers do or do not purchase green foods due to environmental considerations or individual factors[21]. Henceforth, green consumption values consist of the environment and self-value[22]. Also, this paper uses BRT to explain green buying intentions and

contribute to the literature.

The research looked at motives for and against in different contexts either conceptually or qualitatively[22]. To the researchers' best knowledge, this is the only work that has considered both conceptually or qualitatively in a single framework to investigate green buying intentions[23]. The introduction of motives for or against as an element of behavioral intentions and attitudes will assist in appreciating what goes on in the minds of customers using TPB. Besides, the introduction of motives for and against in a single framework will provide a complete appreciation of what goes into the consumers' decision-making. Furthermore, the only research that used BRT to measure green buying intentions did not precisely evaluate motives for buying green foods[23]. They added items to evaluate motives for buying green foods as not explicit to green foods.

For example, "I am frustrated about the smog". The item is not very explicit about green foods and is used for numerous pro-social behaviors. Therefore, the research adopted motives for and against buying green foods to stun this issue in the prior work.

2. Literature review

2.1. BRT

The theory suggested that the motives for and against is influenced by values and global reasons (PBC, attitudes, subjective norms); at the same time, global motives and buying intentions are infused by motives for and against buying green foods[18]. The study[24] used theoretical model (see **Figure 1**). BRT was modified by adding attitudes among the global reasons. Many other authors have used BRT to examine customer activities in different settings. The modified theory has been used to examine natural food, organic products[22], and green hotels[22]. This work used the adapted BRT theoretical framework and added the connection of attitudes, green consumption values, motives for and against buying green foods, attitudes to green foods, and green buying intentions. The researchers developed hypotheses for demonstrating the links among the variable as in **Figures 1** and **2**.

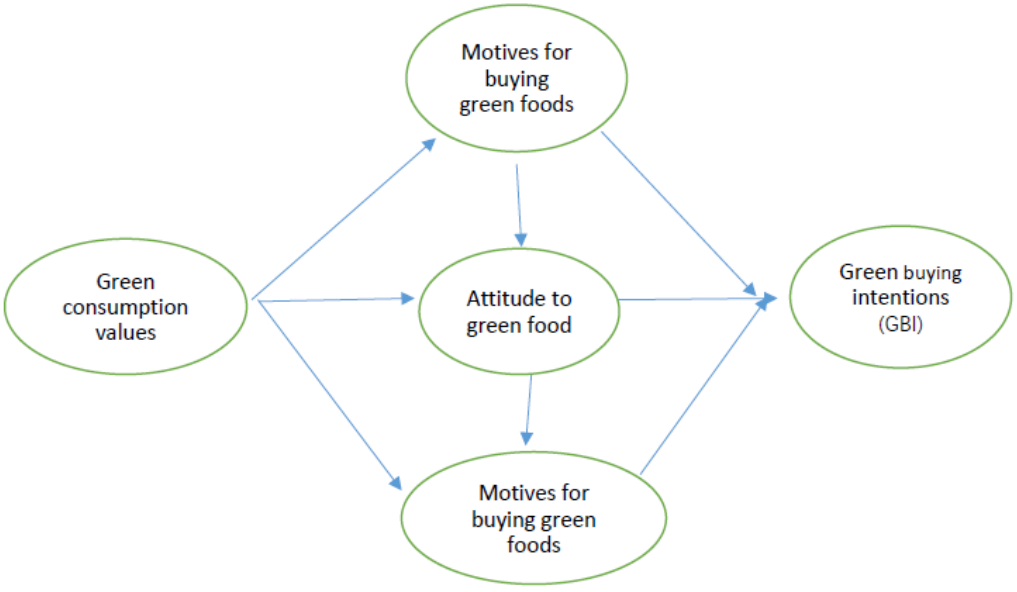

Figure 1. Theoretical framework.

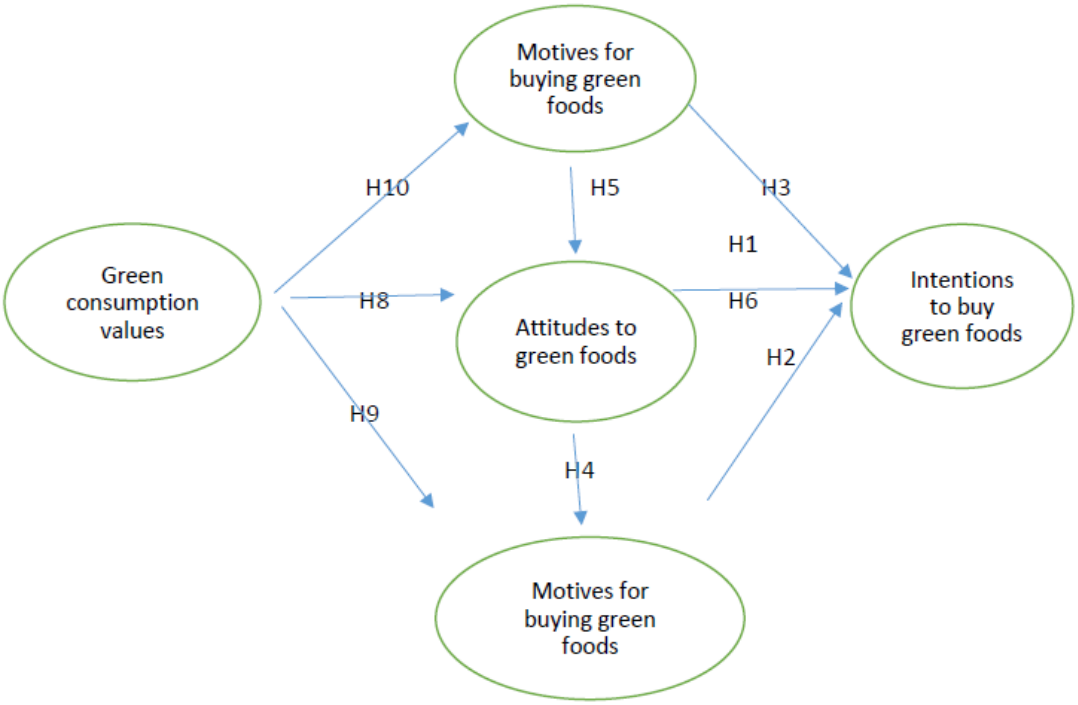

Figure 2. Hypothesis of the study.

2.2. Hypothesis development

2.2.1. Intentions and attitudes

According to Eagly and Chaiken[25], an attitude is a psychological tendency for examining a specific element to accept or reject it. Many researchers have concluded that attitudes are the best predictors of buying intentions[14,18]. Literature on green buying intentions has proven that customers' attitudes are good predictors[26,27]. So, the researchers developed the hypothesis.

H1: Green buying intentions are influenced by attitudes towards green foods.

2.2.2. Motives and intentions

There are two main kinds of motives behind the behavior, it is either motives for or motives against performing the behavior. Motives for a behavior form a good view of a practice, while motives against a practice are a resistor and make bad views of a practice[22,27]. Numerous scholars have expressed their views that individual attitudes cannot always predict intentions right[28]. This identified gap can be closed when BTR is used to explain motives on intentions[18].

Numerous past works have explained that customers with a motive against a behavior do not execute the behavior even if the customer has a positive attitudes to the behavior[29]. A customer may have good intentions to buy green foods but may not buy them because there is none available. Besides, a customer's motive for purchasing green foods is to protect the environment, which supports green buying intentions. Customers experience cognitive dissonance because of the inconsistency between customer's intentions and attitudes[28]. Understanding the motives for and motives against buying green foods will resolve the cognitive dissonance of customers' experience[16]. Therefore, the researchers developed the next hypotheses.

H2: Motives for buying green foods positively affect green buying intentions.

H3: Motives against buying green foods negatively influence green buying intentions.

2.2.3. Motives and attitudes

Past work shows that belief comes first to attitudes[16]. TPB indicates a noticeable brief in every attitudes towards an object. Conversely, researchers show that motives may be the reasons behind the differences in beliefs[18]. Behavioral reasoning theory illustrated that motives are the precursors to attitudes toward a specific element. The justification of BRT to employ motives as the practices to attitudes is due to conceptual variances amid beliefs and motives. Mainly, motives depend on a specific behavior being investigated, whiles belief can be employed on numerous behaviors and are more common than motives[26].

An example is the brief that toxic waste is unsafe. This can encourage individuals to use several behaviors to reduce toxic waste such as reusing, stopping littering. According to Sreen *et al.*[15], the fact that customers have positive beliefs does not always mean they will buy green foods. There is a possible motive against purchasing green foods though there is a positive belief in the low quality of organic foods[28], and cost of green foods[26], and green foods are not available[30].

Second, motives and belief subjugate diverse temporal positioning[31]. This shows that belief looks into the future whiles motives look at the past. Belief looks at the individual view[26] and motives look at why the behavior is performed. Finally, there is a scientific difference between belief and motives. Researchers have indicated that motives and belief are discriminant, and belief is predicted better by motives[32]. Many researchers have used Behavioral Reasoning Theory to explain that motives precede attitudes. According to Sreen *et al.*[26], motives for buying green foods are positively connected with attitudes toward green foods. While, motives against buying green products, have a negative relationship with attitudes toward green foods.

This shows that there are many motives for buying green foods which include product quality, care for the environment, and reputation. Though there are a lot of motives against the buying of green foods, researchers have spent less time on it. Some of these motives include suspicion, lack of trust, and lack of stock[32,33]. Therefore, the researchers developed the next hypotheses:

H4: Motives for buying green foods are positively related to attitudes to green foods.

H5: Motives against buying green foods are positively related to attitudes to green foods.

2.2.4. Motives, attitudes, and intentions

Behavioral Reasoning Theory explains that motives influence attitudes positively and negatively[18]. The positive influence has been given much attention in literature; the negative influence has not been well studied[27]. Researchers endorse a positive association between motives for and against electronic-waste recycling. The work did not look at the negative influence of attitudes toward green foods. Again, Khan and Mohsin[22] look at the positive impact of motives for and against the use of solar panels to save the environment but fail to test the negative effect of motives on intentions using attitudes. Conversely, Dhir *et al.*[34] propose that forthcoming scholars should look at the negative influence of motives on intentions using attitudes. A study by Forbes[35] explained that attitudes clarify the emotional process through which motives for and against accepting green products. The work reveals that motives partially mediate the accepting green products between attitudes and intentions.

Another work by Tandon *et al.*[29] revealed that the connection between attitudes and consumption of green products is partially mediated by motives for and against them. Also, motives against buying organic products can lead to people not liking organic products and hence negative intentions concerning green products. Therefore, the researchers proposed the next hypotheses.

H6: The connection between motives for buying green foods and green buying intentions is moderated by

attitudes to green foods.

H7: The connection between motives against buying green foods and green buying intentions is moderated by attitudes to green foods.

2.2.5. Green consumption values and motives

Green consumption value is likeness to buying products that protect the environment. The green consumption value evolves on two major features: the cognizant concern for and carefulness of how physical and financial resources are used[34]. This means that an individual with green value consumption makes careful use of their financial resource when deciding to buy. They are very careful in their decision-making and always need a justification for their decisions[34]. Individuals with green consumption values have a good measure for organic products[36]. Conversely, there has not been a work that examines the association between green consumption values, motives for and against buying green foods, and attitudes to green foods.

The next hypotheses were formed.

H8: Green consumption values have a positive relationship with attitudes towards green foods.

H9: Green consumption values have a positive connection with motives for buying green foods.

H10: Green consumption values have a positive connection with motives against buying green foods.

2.2.6. Green consumption values, motives and attitudes

Values influence attitudes through motives[37]. The mediating influence of motives helps to investigate the psychological system that backs the situations that affect the decision-making of customers[38]. Some researchers point that values are connected to attitudes, to evaluate specificity issues[15,27].

Also, Tandon[29] established that motives for or against mediating the association with attitudes to green foods and value. Green consumption value gives individual motives to evaluate green foods[39]. Henceforward, we advanced the following hypotheses.

H11: Motives for buying green foods mediate the link between AGF and GCV.

H12: Motives against buying green foods mediate the link between AGF and GCV.

3. Methodology

3.1. Measurements

To do away with errors in our calculations, the researchers decided to use multi-measurement items for evaluating every construct[40]. Some modifications were made as well as validations based on the setting of the work. The research has 7 constructs for green consumption value, motives for buying green foods, motives against buying green foods, attitudes to green foods, and green buying intentions.

5-point Likert scale was employed to evaluate the items, where 1 is strongly disagreeing and 5 strongly agreeing. The researchers employed the 6 items from a research by Haws *et al.*[36] to evaluate green practice value. Besides, 3 items from the study of Armitage and Conner[41] were employed and 4 items from the study of McCarty and Shrum[42] were adapted to measure customers' attitudes to buying green products.

Motives for buying green foods were grouped into usefulness value constructs and environmental value constructs with three items each as used by Koller *et al.*[43]. And motives for and against buying green products are also perilous barrier; the usefulness barrier has three items[44].

3.2. Data collection

Data gathering was centered on green products. The other products are harmful to both humans and the environment throughout their life cycle. This harmful issue includes water pollution, toxic exposure, and air pollution[45]. The traditional product degrades the environment right from getting the ingredient to the packaging of the food to the consumption. The data was collected from Accra where high-income earners stay and are interested in green foods. Many Ghanaians have very little knowledge about the consequences of conversational food on the environment and this is a major challenge to the data collection. The timing of the research could not have been delayed as some restaurants and other firms are doing green productions[46]. The targets are well educated Ghanaians throughout the country that have an idea about green foods. Since we need participants with a fair idea about green foods, and there is always a low response rate when we use an online survey, we sent 1,200 questionnaires and had 689 responses. 52% of the responses was good enough for data analysis using the structural equation modeling as in **Table 1**.

Table 1. Respondent data

	No. of respondents	**Percentage**
Gender		
Male	402	58.34
Female	287	41.65
Age		
21–31 years	286	41.50
32–41 years	289	41.94
42–51 years	114	16.54
Educational level		
Second cycle	321	46.58
Tertiary	267	38.75
Others	101	14.65
Income		
Below 1,000gh	109	15.82
Between 1,000–3,000	288	41.79
Above 3,000	292	42.38

3.3. Data analysis

The theoretical model and hypotheses were examined using SEM since they have not been tested in prior work involving organic products, therefore this work explores the theory. Besides, SEM is not strict with cases of normality as the constructs of the work were a bit skewed and did not meet the threshold of −1 +1[47].

3.4. Common method bias

The work undergoes some common method variance (CMV) since the data was gathered using a questionnaire. Respondents were tasked to rate given statements on the questionnaires. Untreated CMV affects the validity of the outcome since it can inflate the association between two variables and may not give us the true relationship[48]. There are many ways currently to solve these problems[49].

In the first step, all the respondents must be told of the aim of the research and assured anonymity.

Second, each respondent is told that there is nothing wrong or correct answer and so must not be worried about giving out the right answer. Third, all the constructs of the research were illuminated to the respondents to get a valid response. Fourth, the questionnaires were divided into sections and respondents were given some time off after answering a section. Lastly, the researchers used Harman's single-factor test as a way to measure CMV[50].

The variance result was 39.2 which is less than the threshold of 50%. Therefore, the study is clear on common method bias.

3.5. Measurement model

First, we calculated all the factor-loading scores for each item. All the item's scores were bigger than 0.5. Therefore, all the items were accepted for the study. Besides, the composite reliability scores for the entire construct were between 8.81 and 0.97. This is accepted based on a threshold of Hair *et al*.[47]. Average Variance Extracted (AVE) scores of the entire construct were accepted based on the threshold[51]. Heterotrait-Monotrait Ratio of Correlations (HTMT) was used to measure the reliability, convergent validity, and discriminant validity and all the constructs met the threshold[52] as seen in **Tables 2** and **3**.

Table 2. Factor loadings for the first order and second order

	Constructs	**Items**	**Factor loadings**	
			First order	Second order
Values	Green Consumption Value (GCV)	GCV1	0.87	0.84
		GCV2	0.85	0.79
		GCV3	0.79	0.81
		GCV4	0.80	0.79
		GCV5	0.77	0.74
		GCV6	0.81	0.71
Motives for buying green foods	Environmental Value (ENV)	ENV1	0.76	0.87
		ENV2	0.88	
		ENV3	0.80	
	Usefulness Value (UV)	UV1	0.74	0.81
		UV2	0.77	
		UV3	0.85	
Motives against buying green foods	Peril Barrier (PB)	PB1	0.76	0.86
		PB2	0.81	
	Practice Barrier (PTB)	PTB1	0.80	0.77
		PTB2	0.76	
		PTB3	0.84	
Global reasons	Attitude to Green Foods (AGF)	AGF1	0.83	0.84
		AGF2	0.77	0.87
		AGF3	0.74	0.86
		AGF4	0.84	0.74
Practice	Green Buying Intentions (GBI)	GBI1	0.70	0.88
		GBI2	0.75	0.84
		GBI3	0.76	0.79

Table 3. Convergent and Discriminant Validity (HTMT)

	AVE	**CR**	**ASV**	**MSV**	**GV**	**NF**	**AGF**	**GBI**
GV	0.78	0.87	0.38	0.48		0.29	0.86	0.79
MF	0.79	0.80	0.33	0.42	0.75		0.85	0.72
MA	0.81	0.84	0.35	0.46	0.28		0.41	0.74
AGF	0.85	0.83	0.30	0.44				
GBI	0.80	0.85	0.34	0.43			0.79	

The second-order construct: motives for buying green foods recorded a factor loading bigger than the accepted brink value of 50% [practicality value ($\lambda = 0.79$, $t = 47.02$, $p < 0.001$); biological value ($\lambda = 0.78$, $t = 67.02$, $p < 0.001$)].

Also, the second-order construct: motives against buying green foods N = 689, possessed factor loadings

bigger than the brink value of 50% [peril barrier ($\lambda = 0.93$, $t = 15.80$, $p < 0.001$); practice barrier ($\lambda = 0.91$, $t = 18.80$, $p < 0.001$)].

3.6. Structural model

The researchers tested the hypothesis using bootstrapping since the data collected was not in condition for multivariate normality[53]. The researchers run a skewedness and kurtosis test on the entire item for all the constructs which revealed that there is a non-normal distribution on some of the items on both AGF and GBI. We corrected the bias of non-normal data using accelerated bootstrapping[54]. We calculated the R-square to test the endogenous constructs. The outcome reveals that attitude toward green foods is 60.22% and GBI is 61.01%, and the result from the tested hypothesis are as follows:

The result shows a positive and significant association between attitude to green foods and green buying intentions (H1: $\beta = 0.38$, $p < 0.05$).

The relationship between motives for buying green foods is significantly positive with GBI (H2: $\beta = 0.43$, $p < 0.05$), whiles the relationship between motives against buying green foods is negative and not significant with GBI (H3: $\beta = -0.03$, $p > 0.05$).

Also, there is a positive and significant association between buying green foods and AGF (H4: $\beta = 0.42$, $p < 0.05$), and motives against buying green foods have a non-significant relationship with AGF (H5: $\beta = 0.02$, $p > 0.05$).

Furthermore, there is a positive significant association between green consumption value and attitude toward green foods (H8: $\beta = 0.53$, $p < 0.05$), motives for buying green foods (H9: $\beta = 0.59$, $p < 0.05$), and motives against buying green foods (H10: $\beta = 0.30$, $p < 0.05$). The researchers used income as a control variable, but the outcome shows that there is no significant effect on green buying intentions and did not add control variable values to the report of the study. After calculating the variance inflation factor (VIF) values on the independent constructs, the result shows a range of 1 to 1.73 (VIF < 3.00). Therefore, there are no multicollinearity cases in the research[55].

3.7. Mediation impacts

The researchers run a test on the moderating influence of AGF, and motives for and against buying green foods on GBI. This work performs the SEM, and the indirect effect is calculated in **Table 4**.

Table 4. Path analysis

Hypotheses	Path	Beta	Support
H1	AFG-GBI	0.38	accepted
H2	MF-GBI	0.43	accepted
H3	MA-GBI	−0.30	rejected
H4	MF-AFG	0.40	accepted
H5	MA-AFG	0.20	rejected
H6	MF-AFG-GBI	0.27	accepted
H7	MA-AFG-GBI	−0.20	rejected
H8	GV-AFG	0.43	accepted
H9	GV-MF	0.49	accepted
H10	GV-MA	0.30	accepted
H11	GV-MF-AFG	0.31	accepted
H12	GV-MA-AFG	−0.27	rejected

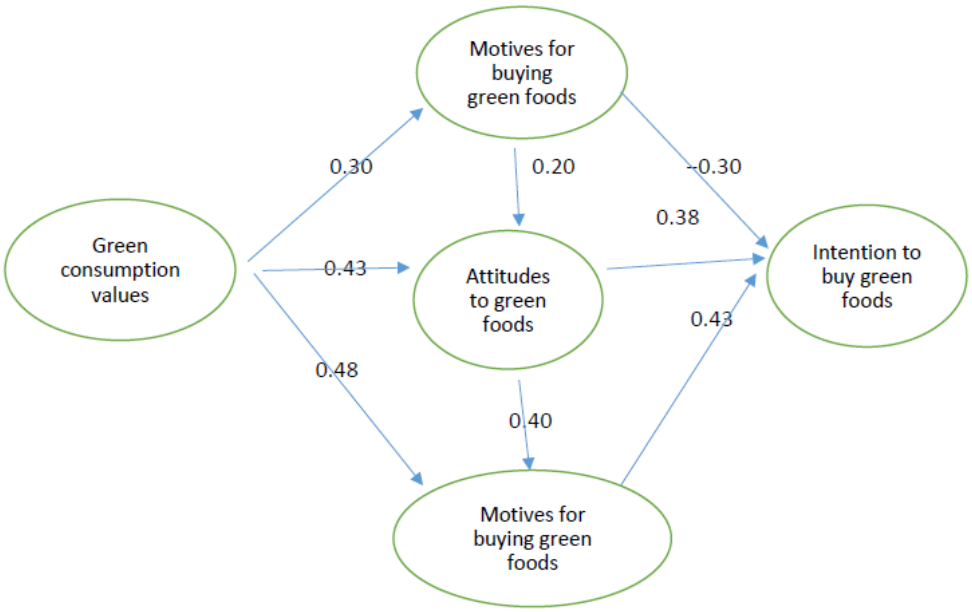

Figure 3. Structural model.

The result of the mediation of motives for buying green foods on GCV and AGF is positive (H11: $\beta = 0.31$, $p < 0.05$).

Motives for buying green foods influence GBI through AGF (H6: $\beta = 0.27$, $p < 0.05$). The result of the mediation of motives against buying green foods on GCV and AGF is negative (H12: $\beta = -0.2$, $p < 0.05$), and there is a negative connection between motives against buying green foods and GBI moderated by ACF (H7: $\beta = 0.02$, $p > 0.05$).

4. Discussion

BRT explains the processes through which customers go through to decide between buying or not[56]. In the settings of green foods, researchers have proven a strong relationship between attitudes to green foods, value, and GBI[52,57]. Past and present work has shown that individuals are getting involved in protecting the environment and have changed their values and attitude to support green options[58]. There is an argument on the attitude-intention gap. This calls for the investigation of whether the change in attitude and values will be translated into buying green foods.

To look into this gap, the researchers employ the revised behavioral reasoning theory model of Claudy *et al.*[37] to examine the connections among GCV, motives for and against buying green foods, AFG, and GBI.

H1: Green buying intentions are influenced by attitude towards green foods.

The outcome of the work confirms that past studies show a positive and significant association between AGF and GBI and therefore, confirms H1[59,60].

Many researchers have gone beyond this connection but have used some new elements as predictors of intentions[52,60] and some other elements as further mediating variable precursors to attitude[61]. This work also introduced motives for and against investigating as a practice of intentions and also how attitudes also influence buying intentions[59].

The result revealed that motives for buying green foods are positively influenced by green buying intentions (H2) and indirectly using AGF (H6). Additionally, motives for buying green foods have a positively significant relationship with AGF (H4). The outcomes are in line with Westaby[56] that motives are a primary reason behind

the decisions customers make. The outcome suggests that the motives for buying green foods in a way create the intentions and throw more light on the gap between attitude-intention gaps and explains the green buying act. In situations where the motives for buying green foods are not well noticed, it makes customers' decisions so easy. The work added to the literature by introducing the second construct usefulness value and environment value. This made the model look so simple for managers of green foods to understand the concept and put together strategies to promote green buying intentions.

Besides, the motives against buying green foods are not in a significant relationship with GBI (H3) and AGF (H5). Motives against buying green foods do not impact GBI and AGF (H7). This is supported by the work of Claudy *et al*.[37], who revealed a non-significant relationship in the settings of organic products. Conversely, this is quite different from works that introduced BRT in their search for the association with motives against buying green foods and GBI[10,37]. The reason might be a result of publicity on climate change in recent times[58]. Present work shows that individuals do not like others who destroy the environment[62]. In this situation, customers always wish to do the right thing so that the society will accept them though they are not having motives against buying green foods. Lastly, the outcome indicates that attitudes to green foods are influenced by green consumption values (H8), motives for buying green foods (H9), and motives against buying green foods (H10).

The result of the mediation of motives for buying green foods on GCV and AGF is positive (H11) and motives against buying green foods are negative (H12). This result shows that the link between attitudes, values, and intentions to buy green foods using BRT is complex as compared to the work of other scholars[15,59,63]. BRT gives motives for and against attitudes towards green products which serve as psychological procedures through which individuals go through to form values for green consumption of green foods; therefore, BRT gives deeper cognitive processing[56].

5.1. Theoretical implications

The work provided numerous theoretical contributions. First, authors of related work on green buying intentions have incorporated values of different kinds into their work, which includes: altruism, cultural values, and biosphere values[10,29,56].

Conversely, work on the buying of organic foods has not added the GCV scale in the Ghanaian settings. As the researchers gathered data in Ghana, they certified the GCV scale in the Ghanaian setting. Besides, the studies examine the verified relationship of GCV with motives for and motives against buying green foods.

Secondly, the study expanded the BRT framework and added to the theoretical understanding of green buying intentions by testing the influence of motives for and against buying green products when making a buying decision. The researcher found a work by Wang *et al.*[64] that looked at buying intentions but did not take motives as a context.

Therefore, this work is the first of its kind to include motives as a variable to examine buying intentions.

Third, there is very little work that has considered attitudes and motives as mediating variables to predict buying intentions[29,56]. This study looks at the step-by-step procedures that a customer goes through to decide to buy green foods. The finding of the work added up to the existing literature.

Lastly, the research added to the finding of answers to the long-standing puzzle of the gap in the literature on attitudes leading to consumers' intentions. The researchers introduced motives for and against buying green foods as variables for binging green service. Studies have found that an individual can make intentions without necessarily forming an attitudes.

The outcome of the research points out to researchers that some specific variables are good enough to explain green buying intentions and comprise variables that explain deviation in attitudes and intentions. So, this research

adds to the call for further studies on psychological theories in Ghanaian settings to investigate green buying intentions[65,66].

5.2. Managerial implications

The research discovered three main managerial implications from the result of the work.

First, the findings of the work indicate that GCV influences GBI positively and uses motives for buying green foods and attitudes. This means that developing green consumption values among Ghanaians will directly enhance their green buying behavior. To do this, the government, opinion leaders of social groups, and the media have a lot of roles to play by emphasizing the importance of protecting the environment and human well-being and that being a friend to the environment can assist to save the environment.

The media channels can put together educated programs on the essence of environmental protection and the need for every individual to be responsible for their actions. Equally, the government rewards individuals or groups that protect the environment and also put together educated programs that spell out the consequences of a degraded environment to the nation. Social groups and opinion leaders can also take up the task to create awareness of the environment to promote environmental practices that are friendly to the environment and do not harm the environment.

Furthermore, curriculum developers can introduce courses at the elementary level that has to do with sustainable consumption. This will create a culture of friendliness in the environment. As the public constantly sentries on environmental matters, it encourages the buying of green foods.

Additionally, motives for buying green foods are positively related to attitudes to green foods and GBI. The result found the environmental value of green foods and the useful value as the main reason for purchasing green foods. The contents of a product package encourage customers to form environmental value. The information available on the packaging can promote buying of green foods as compared to traditional food. Experts in the industry must project a pictorial chart on the current state and the future state of the environment, whether should we continue to degrade the ecology of Ghana as well as the benefits of green foods over traditional food.

To improve the user value of green foods, employees must train their staff. The employees can explain to customers the importance of green foods and other questions related to quality. The accuracy of the information on the questions that customers posed will encourage customers to buy green foods and to understand the cost and benefits of their buying activities. Managers of green foods must show useful benefits in their advertisements.

Last, the motives against buying green foods do not impact AGF and GBI. The work found peril barriers and practice. The barrier is the main motive against buying green foods. Eco-label is not enough to influence customers' attitudes to green foods and green buying intentions. Insufficient information and stock of green foods do not impact AFG and GBI. Managers must find a transparent way of checking the eco-labeling of their packaging to prove to customers that it is authentic. Managers must prove detailed information on the food preparation process from raw material procurement to packaging and delivery.

6. Conclusion

Green foods are significant to human well-being and it protects the environment. The researchers used BRT to look at the effect of GCV on customers' motives for and against buying green foods, on consumers' attitudes, and the influence of motives for and against buying green foods on consumers' GBI.

The outcome indicates that GCV influences customers' motives for and motives against buying green foods. The work also concluded that the motives for and against buying green foods are connected to the AGF (R1) and

GBI (R2). Lastly, R3 was also solved in the work by examining the role of mediating variables such as AGF, and the motives for and against buying them using the framework.

The research added to the present work as very few work uses BRT to investigate green buying intentions. The constructs comprised motives for and against buying green foods as second-order constructs, and connections involved in this work are new for the developing market settings and directions into the forthcoming.

The work was done in Ghanaian settings. Therefore, the theories used may not be applicable in other settings due to cultural differences. The researchers used a cross-sectional approach to gather the data; therefore, future researchers should conduct similar work using a longitudinal study approach.

Conflict of interest

No conflict of interest was reported by the authors.

References

1. wrap. Wasting Food Feeds Climate Change: Food Waste Action Week Launches to Help Tackle Climate Emergency; 2021. Available from: https://wrap.org.uk/media-centre/press-releases/wasting-food-feeds-climate-change-food-waste-action-week-launches-help.
2. Laureti T, Benedetti I. Exploring Pro-Environmental Food Purchasing Behaviour: An Empirical Analysis of Italian Consumers. Journal of Cleaner Production 2018; 172: 3367-3378. https://doi.org/10.1016/j.jclepro.2017.11.086.
3. Global Footprint Network. EU Overshoot Day, Living beyond Nature's Limits; 2019. Available from: https://www.footprintnetwork.org/content/uploads/2019/05/WWF-GFNEU-Overshoot-Day-report.pdf.
4. BARRON'S. Two-Thirds of North Americans Prefer Eco-Friendly Brands, Study Finds; 2020. Available from: https://www.barrons.com/articles/two-thirds-of-north-americans-prefer-eco-friendly-brands-study-finds-51578661728.
5. Wiedmann T, Lenzen M, Keyßer LT, Steinberger JK. Scientists' Warning on Affluence. Nature Communications 2020; 11(1): 1-10. https://doi.org/10.1038/s41467-020-16941-y.
6. Greendex Survey. INDIAN CONSUMERS: Second Place; 2020. Available from: https://www.nationalgeographic.com/greendex/assets/dl/pdf/Indians.pdf.
7. Financial Express. Sustainability in India: To Achieve the UN's SDG Goals, Youth Must Be Engaged Urgently; 2020. Available from: https://www.financialexpress.com/economy/sustainability-in-india-to-achieve-the-uns-sdg-goals-youth-must-be-engaged-urgently/1821023/.
8. Yan L, Keh HT, Wang X. Powering Sustainable Consumption: The Roles of Green Consumption Values and Power Distance Belief. Journal of Business Ethics 2021; 169(3): 499-516. https://doi.org/10.1007/s10551-019-04295-5.
9. mint. M&M to Invest ₹3,000 cr on Electric Vehicle Business in Next 3 Years 2021; 2021. Available from: https://www.livemint.com/companies/news/mm-to-invest-rs-3-000-cr-on-electric-vehicle-business-in-next-3-years-11618119458698.html.
10. Kautish P, Sharma R. Study on Relationships among Terminal and Instrumental Values, Environmental Consciousness and Behavioral Intentions for Green Products. Journal of Indian Business Research 2021; 13(1): 1-29. https://doi.org/10.1108/JIBR-01-2018-0013.
11. Jaiswal D, Kant R. Green Purchasing Behaviour: A Conceptual Framework and Empirical Investigation of Indian Consumers. Journal of Retailing and Consumer Services 2018; 41: 60-69. https://doi.org/10.1016/j.jretconser.2017.11.008

12. Usrey B, Palihawadana D, Saridakis C, Theotokis A. How Downplaying Product Greenness Affects Performance Evaluations: Examining the Effects of Implicit and Explicit Green Signals in Advertising. Journal of Advertising 2020; 14: 49(2): 125-140. https://doi.org/10.1080/00913367.2020.1712274.
13. Stern PC. New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior. Journal of Social Issues 2000; 56(3): 407-424. https://doi.org/10.1111/0022-4537.00175.
14. Ajzen I. The Theory of Planned Behavior. Organizational Behavior and Human Decision Processes 1991; 50(2): 179-211. https://doi.org/10.1016/0749-5978(91)90020-T.
15. Sreen N, Purbey S, Sadarangani P. Understanding the Relationship between Different Facets of Materialism and Attitude toward Green Products. Journal of Global Marketing 2020; 33(5): 396-416. https://doi.org/10.1080/08911762.2020.1751370.
16. Yadav R, Pathak GS. Determinants of Consumers' Green Purchase Behavior in a Developing Nation: Applying and Extending the Theory of Planned Behavior. Ecological Economics 2017; 134: 114-122. https://doi.org/10.1016/j.ecolecon.2016.12.019.
17. Trivedi RH, Patel JD, Acharya N. Causality Analysis of Media Influence on Environmental Attitude, Intention and Behaviors Leading to Green Purchasing. Journal of Cleaner Production 2018; 196: 11-22. https://doi.org/10.1016/j.jclepro.2018.06.024.
18. Westaby JD. Behavioral Reasoning Theory: Identifying New Linkages Underlying Intentions and Behavior. Organizational Behavior and Human Decision 2005; 98(2): 97-120. https://doi.org/10.1016/j.obhdp.2005.07.003.
19. Chaudhary R, Bisai S. Factors Influencing Green Purchase Behavior of Millennials in India. Management of Environmental Quality: An International Journal 2018; 29(5): 798-812. https://doi.org/10.1108/MEQ-02-2018-0023.
20. Mishal A, Dubey R, Gupta OK, Luo Z. Dynamics of Environmental Consciousness and Green Purchase Behaviour: An Empirical Study. International Journal of Climate Change Strategies and Management 2017; 9(5): 682-706. https://doi.org/10.1108/IJCCSM-11-2016-0168.
21. Jansson J, Marell A, Nordlund A. Exploring Consumer Adoption of a High Involvement Eco-Innovation Using Value-Belief-Norm Theory. Journal of Consumer Behaviour 2011; 10(1): 51-60. https://doi.org/10.1002/cb.346.
22. Khan SN, Mohsin M. The Power of Emotional Value: Exploring the Effects of Values on Green Product Consumer Choice Behavior. Journal of Cleaner Production 2017; 150: 65-74. https://doi.org/10.1016/j.jclepro.2017.02.187.
23. Westaby JD. Behavioral Reasoning Theory: Identifying New Linkages Underlying Intentions and Behavior. Organizational Behavior and Human Decision Processes 2005; 98(2): 97-120. https://doi.org/10.1016/j.obhdp.2005.07.003.
24. Chatterjee S, Kumar P, Chatterjee S. Wavelet Analysis of Optical Signal Extracted from a Non-Contact. Renewable and Sustainable Energy Reviews 2022; 41.
25. Eagly AH, Chaiken S. The Advantages of an Inclusive Definition of Attitude. Social Cognition 2007; 25(5): 582-602. https://doi.org/10.1521/soco.2007.25.5.582.
26. Sreen N, Sadarangani PH, Gogoi BJ. Profiling Green Consumers through Culture, Beliefs and Demographics: An Indian Study. International Journal of Indian Culture and Business Management 2021; 19(2): 168-188. https://doi.org/10.1504/IJICBM.2019.101732.
27. ElHaffar G, Durif F, Dubé L. Towards Closing the Attitude-Intention-Behavior Gap in Green Consumption: A Narrative Review of the Literature and an Overview of Future Research Directions. Journal of Cleaner Production 2020; 275: 122556. https://doi.org/10.1016/j.jclepro.2020.122556.
28. Huang Y, Qian L. Understanding the Potential Adoption of Autonomous Vehicles in China: The Perspective of Behavioral Reasoning Theory. Psychology & Marketing 2021; 38(4): 669-690. https://doi.org/10.1002/ mar.21465.

29. Tandon A, Dhir A, Kaur P, *et al.* Behavioral Reasoning Perspectives on Organic Food Purchase. Appetite 2020; 154: 104786. https://doi.org/10.1016/j.appet.2020.104786.
30. Gan C, Wee HY, Ozanne L, Kao TH. Consumers' Purchasing Behavior towards Green Products in New Zealand. Innovative Marketing 2008; 4(1): 93-102.
31. Shealy CN (editor). Making Sense of Beliefs and Values: Theory, Research, and Practice. New York: Springer Publishing Company; 2015.
32. Berger J. Signaling Can Increase Consumers' Willingness to Pay for Green Products. Theoretical Model and Experimental Evidence. Journal of Consumer Behaviour 2019; 18(3): 233-246. https://doi.org/10.1002/cb.1760.
33. Nguyen LH, Nguyen HV. Materialistic Values and Green Apparel Purchase Intention among Young Vietnamese Consumers. Young Consumers 2019; 20(4): 246-263. https://doi.org/10.1108/YC-10-2018-0859.
34. Dhir A, Koshta N, Goyal RK, *et al.* Behavioral Reasoning Theory (BRT) Perspectives on E-Waste Recycling and Management. Journal of Cleaner Production 2021; 280: 124269. https://doi.org/10.1016/j.jclepro.2020.124269
35. Forbes. Five Ways That Plastics Harm the Environment (And One Way They May Help); 2018. Available from: https://www.forbes.com/sites/grrlscientist/2018/04/23/five-ways-that-plastics-harm-the-environment-and-one-way-they-may-help/?sh=6f01559067a0.
36. Haws KL, Winterich KP, Naylor RW. Seeing the World through GREEN-Tinted Glasses: Green Consumption Values and Responses to Environmentally Friendly Products. Journal of Consumer Psychology 2014; 24(3): 336-354. https://doi.org/10.1016/j.jcps.2013.11.002.
37. Claudy MC, Garcia R, O'Driscoll A. Consumer Resistance to Innovation—A Behavioral Reasoning Perspective. Journal of the Academy of Marketing Science 2015; 43(4): 528-544. https://doi.org/10.1007/s11747-014-0399-0.
38. Bonn MA, Cronin Jr JJ, Cho M. Do Environmental Sustainable Practices of Organic Wine Suppliers Affect Consumers' Behavioral Intentions? The Moderating Role of Trust. Cornell Hospitality Quarterly. 2016; 57(1): 21-37. https://doi.org/10.1177/1938965515576567.
39. Kautish P, Paul J, Sharma R. The Moderating Influence of Environmental Consciousness and Recycling Intentions on Green Purchase Behavior. Journal of Cleaner Production 2020; 228: 1425-1436. https://doi.org/10.1016/j.jcle pro.2019.04.389.
40. Churchill Jr GA. A Paradigm for Developing Better Measures of Marketing Constructs. Journal of Marketing Research 1979; 16(1): 64-73. https://doi.org/10.1177/002224377901600110.
41. Armitage CJ, Conner M. Distinguishing Perceptions of Control from Self-Efficacy: Predicting Consumption of a Low-Fat Diet Using the Theory of Planned Behavior. Journal of Applied Social Psychology 1999; 29(1): 72-90. https://doi.org/10.1111/j.1559-1816.1999.tb01375.x.
42. McCarty JA, Shrum LJ. The Recycling of Solid Wastes: Personal Values, Value Orientations, and Attitudes about Recycling as Antecedents of Recycling Behavior. Journal of Business Research 1994; 30(1): 53-62. https://doi.org/10.1016/0148-2963(94)90068-X.
43. Koller M, Floh A, Zauner A. Further Insights into Perceived Value and Consumer Loyalty: A "Green" Perspective. Psychology & Marketing 2011; 28(12): 1154-1176. https://doi.org/10.1002/mar.20432.
44. Kushwah S, Dhir A, Sagar M. Understanding Consumer Resistance to the Consumption of Organic Food. A Study of Ethical Consumption, Purchasing, and Choice Behaviour. Food Quality and Preference 2019; 77: 1-14. https://doi.org/10.1016/j.foodqual.2019.04.003.
45. Eco Watch. The Environmental and Human Cost of Making a Pair of Jeans; 2018. Available from: https://www.ecowatch.com/environmental-cost-jeans-2544519658.html.
46. Financial Express. Consumers Willing to Shell Out More for Eco-Friendly Items; Brands Board Green Bandwagon; 2019. Available from: https://www.financialexpress.com/industry/consumers-willing-to-shell-

out-more-for-eco-friendly-items-brands-board-green-bandwagon/1805627/.
47. Hair JF, Risher JJ, Sarstedt M. Ringle CM. When to Use and How to Report the Results of PLS-SEM. European Business Review 2019; 31(1): 2-24. https://doi.org/10.1108/EBR-11-2018-0203.
48. Malhotra NK, Schaller TK, Patil A. Common Method Variance in Advertising Research: When to Be Concerned and How to Control for It. Journal of Advertising 2017; 46(1): 193-212. https://doi.org/10.1080/00913367.2016.1252287.
49. Podsakoff PM, MacKenzie SB, Lee JY, Podsakoff NP. Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. The Journal of Applied Psychology 2003; 88(5): 879-903. https://doi.org/10.1037/0021-9010.88.5.879.
50. Harman HH. Modern Factor Analysis. Chicago and London: The University of Chicago Press; 1967.
51. Fornell C, Larcker DF. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. Journal of Marketing Research 1981; 18(1): 39-50. https://doi.org/10.1177/002224378101800104.
52. Henseler J, Ringle CM, Sarstedt M. A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling. Journal of the Academy of Marketing Science 2015; 43(1): 115-135. https://doi.org/10.1007/s11747-014-0403-8.
53. Kim N. Omnibus Tests for Multivariate Normality Based on Mardia's Skewness and Kurtosis Using Normalizing Transformation. Communications for Statistical Applications and Methods 2020; 27(5): 501-510. https://doi.org/10.29220/CSAM.2020.27.5.501.
54. Efron B. Better Bootstrap Confidence Intervals. Journal of the American Statistical Association 1987; 82(397): 171-185. https://doi.org/10.1080/01621459.1987.10478410.
55. Hair JF, Sarstedt M, Ringle CM, Mena JA. An Assessment of the Use of Partial Least Squares Structural Equation Modeling in Marketing Research. Journal of the Academy of Marketing Science 2012; 40(3): 414-433. https://doi.org/10.1007/s11747-011-0261-6.
56. Westaby JD, Probst TM, Lee BC. Leadership Decision-Making: A Behavioral Reasoning Theory Analysis. The Leadership Quarterly 2021; 21(3): 481-495. https://doi.org/10.1016/j.leaqua.2010.03.011.
57. Sreen N, Purbey S, Sadarangani P. Impact of Culture, Behavior and Gender on Green Purchase Intention. Journal of Retailing and Consumer Services 2018; 41: 177-189. https://doi.org/10.1016/j.jretconser.2017.12.002.
58. Kautish P, Paul J, Sharma R. The Moderating Influence of Environmental Consciousness and Recycling Intentions on Green Purchase Behavior. Journal of Cleaner Production 2019; 228: 1425-1436. https://doi.org/10.1016/j.jcle pro.2019.04.389.
59. Cheung MF, To WM. An Extended Model of Value-Attitude-Behavior to Explain Chinese Consumers' Green Purchase Behavior. Journal of Retailing and Consumer Services 2019; 50: 145-153. https://doi.org/10.1016/j.jretconser.2019.04.006.
60. Alzubaidi H, Slade EL, Dwivedi YK. Examining Antecedents of Consumers' Pro-Environmental Behaviours: TPB Extended with Materialism and Innovativeness. Journal of Business Research 2021; 122: 685-699. https://doi.org/10.1016/j.jbusres.2020.01.017.
61. Indriani IAD, Rahayu M, Hadiwidjojo D. The Influence of Environmental Knowledge on Green Purchase Intention the Role of Attitude as Mediating Variable. International Journal of Multicultural and Multireligious Understanding 2019; 6(2): 627-635. https://doi.org/10.18415/ijmmu.v6i2.706.
62. Panda TK, Kumar A, Jakhar S, *et al.* Social and Environmental Sustainability Model on Consumers' Altruism, Green Purchase Intention, Green Brand Loyalty and Evangelism. Journal of Cleaner Production 2020; 243: 118575. https://doi.org/10.1016/j.jclepro.2019.118575.
63. Sreen N, Sadarangani PH, Gogoi BJ. Profiling Green Consumers through Culture, Beliefs and Demographics: An Indian Study. International Journal of Indian Culture and Business Management 2019; 19(2): 168-188. https://doi.org/10.1504/IJICBM.2019.101732.

64. Wang J, Shen M, Chu M. Why Is Green Consumption Easier Said than Done? Exploring the Green Consumption Attitude-Intention Gap in China with Behavioral Reasoning Theory. Cleaner and Responsible Journal of Global Marketing Consumption 2021; 2: 100015. https://doi.org/10.1016/j.clrc.2021.100015.
65. Liu MT, Liu Y, Mo Z. Moral Norm Is the Key: An Extension of the Theory of Planned Behaviour (TPB) on Chinese Consumers' Green Purchase Intentions. Asia Pacific Journal of Marketing and Logistics 2020; 32(8): 1823-1841. https://doi.org/10.1108/APJML-05-2019-0285.
66. Garg P, Joshi R. Purchase Intention of 'Halal' Brands in India: The Mediating Effect of Attitude. Journal of Islamic Marketing 2018; 9(3): 683-694. https://doi.org/10.1108/JIMA-11-2017-0125.

Appendix

Questionnaires for customers

Please tick where applicable to the best of your knowledge.

Section A demographic data of respondents

Gender: Male Female

Age: 21–31 years 32–41 years 42–51 years

Educational level: Second cycle Tertiary Others

Income: Below 1,000 gh. Between 1,000–3000 gh. Above 3,000 gh.

Section B expectations

Please write 1 to 5 to measure the extent of agreement or disagreement to the statements where 1 strongly disagree, 2 agree, 3 neutral, 4 agree and 5 strongly agree.

s/n	Constructs	Statements	1	2	3	4	5
1	Green Consumption Value (GCV)	GCV1 I encourage friends and relatives to buy green food GCV2 I know a lot about green food GCV3 I know a lot about the quality green food GCV4 I know a lot about the environmental and health benefits of green food GCV5 I am concerned about protecting the environment GCV6 I am environmentally responsible					
2	Environmental Value (ENV)	ENV1 The environment is very delicate People are cruelly harming the environment ENV2 People maintain the balance with nature in order to survive ENV3 Human interferences with nature often produce disastrous consequences					
3	Usefulness Value (UV)	UV1 I choose green food for good health UV2 I am health-conscious consumer					
4	Peril Barrier (PB)	PB1 Nowadays most green foods contain chemicals PB2 there are preservatives in green food					
5	Practice Barrier (PTB)	PTB1 The quality and safety of green food is a worry PTB2 I do not recognize the high nutritional PTB3 The packaging of green food is not safe					
6	Attitude to Green Foods (AGF)	AGF1 It is beneficial to buy green food AGF2 I feel good to buy green food AGF3 Buying green food is a wise choice AGF4 I feel pleased to buy green food					
7	Green Buying Intention (GBI)	The environment is very delicate People are cruelly harming the environment People maintain the balance with nature in order to survive Human interferences with nature often produce disastrous consequences					