Electronic Green Journal
Volume 1, Issue 49

Customer's attitude and purchasing behavior of green food in Ghana: The moderating role of environmental views and green trust

Edward Markwei Martey
Koforidua Technical University, Ghana

Abstract

The study aims to explore the intricate connections between motivations, attitudes, and purchasing behavior concerning green food. To achieve this, the Self-determination Theory (SDT) is employed as the theoretical framework. A sample of 778 green food customers is evaluated using Structural Equation Modeling (SEM), and the data analysis incorporates environmental views and conviction as moderating variables. The results of the study reveal a noteworthy relationship between integrated external regulation and intrinsic motivation in shaping attitudes and purchasing behavior. Interestingly, the study finds that attitude does not significantly impact purchase behavior. The key takeaway from the findings is that ethical considerations related to health and social values strongly motivate customers to opt for green food. Practical implications suggest that marketing practitioners should tailor advertising messages to highlight the health and well-being benefits associated with green food. By emphasizing these aspects, marketers can stimulate customer interest and encourage the purchase of green products. The study sheds light on the importance of aligning marketing strategies with ethical values and health concerns on the target audience in the context of green food consumption.

Introduction

There has been a gradual growth in global demand for green food, with sales reaching close to 100 billion USD in recent times (Sulaiman et al., 2022). Various scholars attribute this growth in sales to different motives, including the increasing concern among customers to protect the environment and uphold ethical standards (Willer et al., 2020), as well as considerations for health benefits (Akram et al., 2023). Several studies have attempted to understand the reasons behind customers' behavior in purchasing green food (Birch et al., 2018; Sulaiman et al., 2022; Göhler et al., 2023; Khan et al., 2023). The decision to buy green food is a complex phenomenon influenced by numerous factors, including social pressures and norms (Lang et al., 2022), geographic factors (Asad et al., 2022), price (Kushwah et al., 2019), and availability (Shabbir et al., 2020). To explain this complex phenomenon, scholars have adopted theories such as the self-construal theory (Basha and Lal, 2019), social comparison theory (Zahid et al., 2022), and the theory of planned behavior (Duong et al., 2023). While these studies

have investigated the rise in interest in buying green food, there is a knowledge gap concerning the motives, particularly in developing economies (Hansen et al., 2018).

Many studies have focused on understanding attitudes and intentions to buy green food, which may not always translate into actual purchases for various reasons (Zahid et al., 2022; Kim and Lee, 2022). Additionally, past studies have aimed to examine and explain the gap between attitude, intention, and consumption by concentrating on the factors that trigger purchases (Tandon et al., 2020; Shamsi et al., 2020). Furthermore, previous research has recognized this gap and suggested the need for a comprehensive framework and testing more constructs to examine the elements that impact the buying of green food (Tandon et al., 2020; Asad et al., 2022).

The objective of this current work is to scrutinize the identified challenges using the Self-Determination Theory (SDT). The research selected SDT to examine purchasing behavior for three main reasons. First, it is expected that SDT will provide a novel perspective on what motivates consumers to buy green food. Second, SDT examines both extrinsic and intrinsic motivation and changes in behavior (Deci and Ryan, 2000). This is essential as it offers a broad framework to understand customer purchase behavior. Third, SDT integrates both intrinsic and extrinsic motivators regarding the purchase behavior of green food.

Past studies have focused on either extrinsic motivational factor, such as rewards and benefits (Amatulli et al., 2019; Lang et al., 2022), or intrinsic motivational factors, such as trust and belonging (Asif et al., 2018; Duong et al., 2023). To the best knowledge of the researcher, all this past research has emphasized motivational factors in the purchase of green food, with very little attention given to the integration of both intrinsic and extrinsic motivators regarding the purchase behavior of green food. Addressing this gap, the study contributes some additions to the existing literature.

Many studies have invested considerable effort in understanding attitudes and intentions to buy green food, which may not always translate into actual purchases for various reasons (Zahid et al., 2022; Kim and Lee, 2022). Additionally, previous studies have expressed a desire to examine and explain the gap between attitude, intention, and consumption by focusing on the factors that trigger purchasing behavior (Tandon et al., 2020; Shamsi et al., 2020). Furthermore, past studies have recognized this gap and suggested the need for a more complex framework and the testing of additional constructs to examine the elements that impact the buying of green food (Tandon et al., 2020; Asad et al., 2022). The aim of this current study is to scrutinize the identified challenges using the Self-Determination Theory (SDT).

The author selected SDT to examine purchasing behavior for three main reasons. First, it is anticipated that SDT will provide a novel perspective on what motivates consumers

to buy green food. Second, SDT examines both extrinsic and intrinsic motivation and changes in behavior (Deci and Ryan, 2000). This is crucial as it offers a broad framework to understand customer purchase behavior. Third, SDT integrates both intrinsic and extrinsic motivators regarding the purchase behavior of green food. Past studies have primarily focused on either extrinsic motivational factor, such as rewards and benefits (Amatulli et al., 2019; Lang et al., 2022), or intrinsic motivational factors, such as trust and belonging (Asif et al., 2018; Duong et al., 2023). To the best knowledge of the author, all this past research has emphasized motivational factors in the purchase of green food, with very little attention given to the integration of both intrinsic and extrinsic motivators regarding the purchase behavior of green food. Addressing this gap, the work contributes some additions to the existing literature.

First, the study investigates the motivational factors that support the purchasing behavior of green food using SDT. The few works that used SDT concentrated on Asia and not Africa (e.g., Khan et al., 2023, Vietnam; Duong et al., 2023, Vietnam; Roehrich et al., 2017, China; Kim and Lee, 2022, South Korea). Second, this research highlights customer purchasing behavior as a replacement for customer intentions, which has been the focus of past studies (Khan et al., 2023; Duong et al., 2023). Third, this study focuses on a developing economy with limited existing work (Prakash et al., 2018). Only a few studies have until this time highlighted Ghana, for example, Owusu-Manu et al. (2021) on the greenness of cities and Agyekum et al. (2022) on green building.

The results of the study are centered on motivating customers to buy green food by emphasizing the health benefits and environmental concerns compared to traditional food. This work might encourage customers to choose green food and will influence policymakers and marketing practitioners in their decisions.

Literature review

Concept of green food

Most farmers in Ghana use chemicals in the production of food, which is harmful to human health and the environment (Kumi, 2019). This motivates environmentally concerned and health-conscious customers to buy natural food, including green food (Tandon et al., 2020). Green foods are free from chemicals and pose no harm to humans or the environment (Zahid et al., 2022). Currently, most literature emphasizes different aspects of green consumption, such as green services (Sulaiman et al., 2022), green beautifying products (Alwi et al., 2021), and green clothing (Ajimon and Prajod, 2021), while green food has received less attention. Based on this, the research offers significant contributions to green food literature.

This study examined the various motivational factors that influence purchase behavior in Ghana. The research used the Self-Determination Theory (SDT), and the study suggested a framework to contribute to the existing literature, expanding the understanding of pro-environmental attitudes. The green food concept is the preferred

phenomenon as customers' attitudes toward environmentally friendly food choices continue to gain importance (Kumi.2019; Tewari et al., 2022).

Self-determination theory (SDT)

The theory explains that individuals are motivated in different ways that reveal intrinsic or extrinsic loci of control (Ryan and Deci, (2000). This motivates the individual to behave in a certain way (Zahid, et al 2022). The individual internal locus of control is extremely self-directed, and it is created from the commitments of the individual. However, the external locus is created by external conditions which control motivation. External locus include reward or escape punishment (Kushwah et al., 2019).

The level of self- determination motivates individuals in the form of intrinsic or extrinsic (Basha and Lal, 2019). internal motivation that explains individual willingness to behave in a particular way to gain desire and satisfaction (ITM) .Beside, customers maintaining a high degree of ITM is influenced primarily by emotions and mood (Asif et al., 2018).The motivational activities in the form of duty or responsibility is called extrinsic motivation (ETM) (Gilal et al., 2019).According to the study of Zahid, et al (2022) there are four construct of extrinsic motivation and they are: Introjected (INR), external regulations (EX), Introjected (INR), and integrated regulation (IR). Past studies on green food have clearly proven the role of motivation in buying decisions (Shamsi et al., 2020; Asad, et al., 2022).

External regulation (ER) is fully controlled by outside forces and without any independent behavior (Kushwah et al., 2019). Some customers purchase green food due to external pressure from the environment (Konuk, 2018).The self- determination theory has been used by scholars to examine the importance of self- identity in defining individual's choice to buy green food (Yadav and Pathak, 2016; Zahid, et al., 2022) Based on this, the study adopted SDT to examine the relationship between motivations, attitudes, and purchasing behavior for green food.

Research Hypotheses

Past research has proven that customers' decision to buy green food is related to individual ideology, personal characteristics, wellbeing, ethics and norms (Ajimon, and Prajod, 2021). Customers regulate their own decision-making process to buy green food (Lee et al. 2000). Customers' concern to buy green food is categorized into Intrinsic and extrinsic factors (Asad, et al 2022). Example, customers' concern for the environment can be termed as extrinsic while the health consciousness of customers is called intrinsic. Customer's motives and risk views shape their behavior towards sustainable consumption (Khare and Pandey, 2017). The intrinsic and extrinsic motivator triggers customer's attitudes and purchasing behavior. Based on these motives, the study conceptualized a model on the following variables as independent variables. Namely ITM, INR, EX, and RG (Fig. 1). While attitude (AT) and purchase behavior (PB) are dependent variables. To add to this, the researcher added environmental views (EV) and green trust (GT) to the relationship between motivations, purchase behavior and attitude.

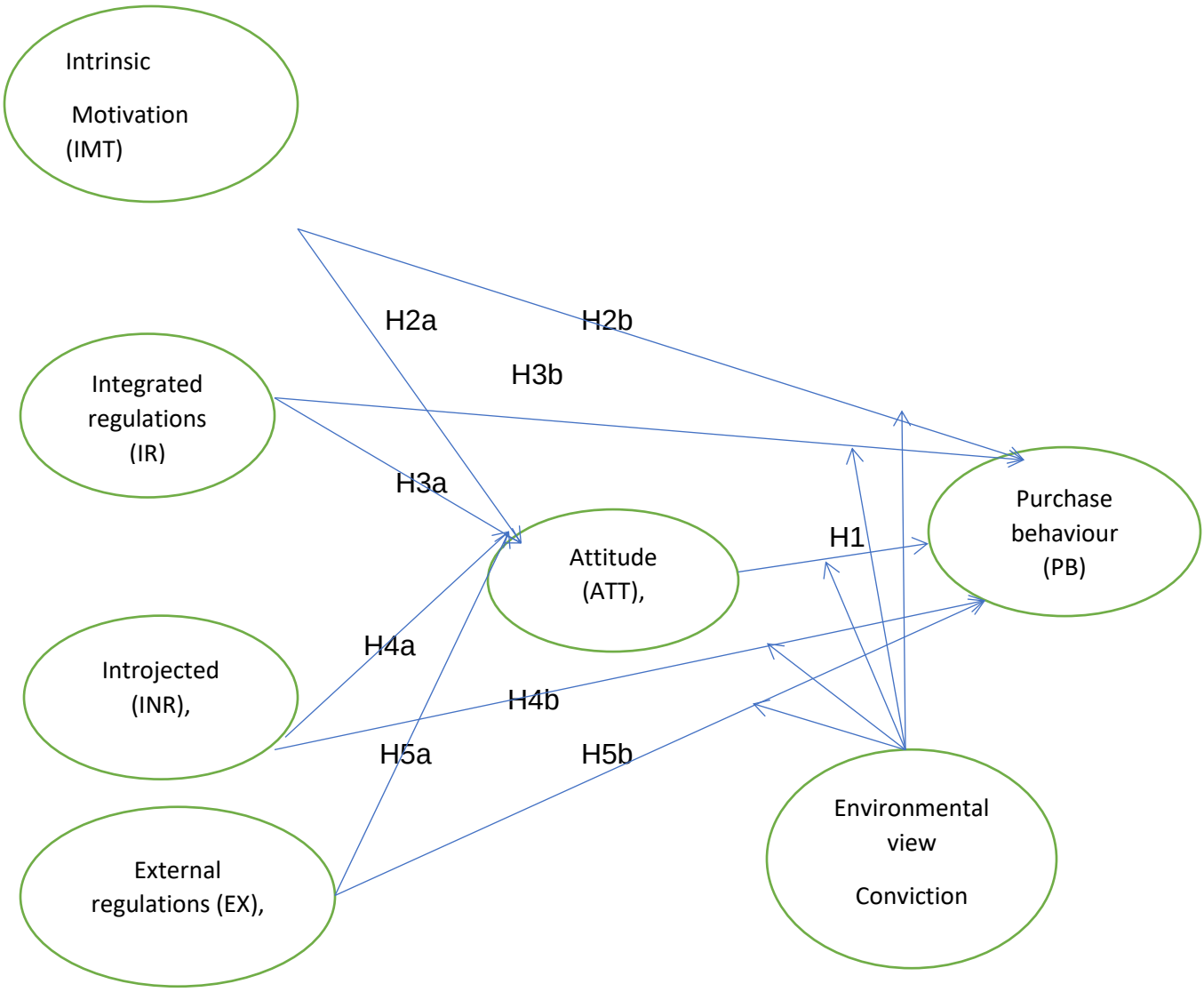

Figure 1. Conceptual framework (Source: Author)

Research model and hypotheses

Attitude (AT)

Individual attitude towards a behavior is one of the essential factors that influence customer's intentions to perform an activity (Ajzen, 1991). Ajzen, (1991) defined attitude as the level at which an individual acts favorable or unfavorable to a behavior which is connected to previous experience. According to Khare and Pandey, (2017) attitude is formed from the interaction with the environment.

Empirical studies have shown that attitude contributes to customers 'purchase behavior towards green food. (Sultan Paul et al., 2020; Sulaiman et al., 2022; Riphah et al., 2022; Molinillo et al., 2020). The attitude of customers towards the purchase of green food is practically determined by their beliefs in outcomes of a behavior (Molinillo et al., 2020). Therefore, the stronger the customer's belief in the outcome, the more favorable attitude towards a behavior is realized which is most likely to cause a positive impact on behavioral intention.

The current research conceptualized green food attitude as the positive feeling of customers toward purchasing green food. Though the association between attitude and customer purchasing behavior has been extensively investigated green food literature (Asad et al., 2022; Shabbir et al., 2020; Akram et al., 2023) it could be linked to specifically to Ghana.

Attitude is very significant in the green food literature as it is one of the variables that best clarifies the selection process that influences decisions to purchase or not to purchase green food (Akram et al., 2023). This means that purchasing green is largely subjected to the attitude of the customer towards green food. Past literature has authenticated the significant and positive effect of attitude on purchase behavior in numerous pro-environment specific areas such as energy saving (Akram et al., 2023) recycling (Birch and DeSilva 2018), organic food consumption (Carfora et al., 2019). This indicates that there is the possibility to infer from the above outcome that attitude is likely to influence purchasing behavior towards green food. Conversely, the effect of attitude on purchase behavior has been given less academic attention in Ghana.

H1. Purchasing behavior is increased by an attitude towards green food.

Intrinsic motivation (ITM)

The reason why people behave in a particular way has been examined for many years. One of the most common answers is motivation. According to Amabile, (1993) motivation is the force that induces individuals to act in a certain manner. Motivation is caused either internally or externally (Molinillo et al., 2020). Intrinsic motivation refer to as internal motivation that explains individual willingness to behave in a particular way to gain desire and satisfaction (Amabile, 1993).ITM plays a huge role in purchase behavior- but customers ITM is driven by the doing what they enjoy and gives them pleasure (Gilal et al., 2019).However, customers maintaining a high degree of IM is difficult as customer behavior is influenced primarily by emotions and mood (Asif et al., 2018).Past study of Leung et al., (2023) confirmed this notion. In this regard a customer's behavior is based on their interest and joy (Ryan and Deci, 2000). With reference to the SDT, the study argued that ITM will encourage customers to purchase green food (Gilal et al., 2019; Asad, et al., 2022).

Previous scholars have investigated the association between IM and purchase behavior: for example, Zahid. et al., (2022) revealed a positive relationship between IM and purchase behavior and empirical support (Asad, et al 2022; Zahid, et al 2022; Molinillo et al., 2020). The study argues that when customers purchase behavior is directed by the customer's pleasure in doing so. It may impact the sense that enjoying

what they do encourages customers to purchase green food. The conceptualized intrinsic motivation as inward emotions and mood of customers toward purchasing green food. Even though there is numerous evidence of ITM and Purchase behavior, the study sees it necessary to test it under the SDT. Besides, the attitude of individuals affects both emotions and purchase behavior. Grounded on the SDT, the research argued that attitude is derived from customer's experience of ITM, and customers enjoy purchasing green food. Previous studies suggest that customer's attitude influences ITM such as encouraging customers to purchase green food (Nuttavuthisit & Thøgersen, 2017). According to Gilal et al., (2019) attitude is deeply rooted in intrinsic motivation. There are empirical studies that show the implication of intrinsic motivation toward attitude (Kim and Drumwright, 2016; Gilal et al., 2019). Moreover, ITM is concluded to have a significant influence on purchase behavior in the food industry (Molinillo et al., 2020). The current studies aim to confirm the established link between attitude and purchase behavior. The study expects the result would be beneficial to decision makers in the green industry, therefore the following hypothesis were presented:

H2a. A favorable attitude to green food is linked with an increase in IMT.

H2b. A favorable purchase behavior toward green food is linked with an increase in IMT.

Extrinsic motivation (ETM)

According to Gilal et al., (2019) ETM are factors that are considered as duty or responsibility of customers that induce autonomy. Past studies show that customers infrequently embark on practices decently for pleasure and many of these practices are for external awards (Wang and Hou, 2015; Zahid, et al., 2022). This motivates customers to carry out activities that develop external self-esteem (Asif et al., 2018). Past studies show that customers infrequently embark on practices decently for pleasure. Rather many of these practices are for external awards (Wang and Hou, 2015; Gilal et al., 2019). Empirical studies from (Shamsi et al., 2020; Asad,et al., 2022) that individuals who are extrinsically motivated have less interest in considering the effect of their choice of food they buy based on sustainability but rather autonomy.

However, most customers buy green food because they want a higher social recognition amid their group (Yadav and Pathak, 2016). Therefore, that social value can trigger the consumption of green food. According to Kim et al., (2018) social status increases customers' intentions to buy green food in restaurants. It is noted that a high level of ETM may trigger a higher level of purchase of green food as customers wish to be part of activities that will increase their reputation. Past studies have identified four constructs of extrinsic motivation, and they are: Introjected (INR), external regulations (ER), Introjected (INR), and integrated regulation (IR) (Zahid, et al 2022).

Integrated regulation (IR)

Deci and Ryan, (2000) defined Integrated regulation as customer behavior that is motivated by values of behavior based on one's own goals. Hence individuals whose values are to protect the environment and promote health consciousness are motivated to buy green food. According to Kushwah et al., (2019) IR are motivated behaviors guided by an external instrument (e.g. rewards or punishment). The study by Olson, (2017) explained that the level of IR is regulated by the level to which customers are autonomous and influenced by the outcome of their behavior. IR influence individuals to add to their self-identities by behaving in a manner that gives them higher personal value, which is purchasing green food (Sulaiman, et al 2022). According to Kushwah , (2019) green food has environmental and health benefits which are centered on individual values (Kushwah et al., 2019). Hence individuals with increased IR are motivated to buy green food due to their individual goals (Ng et al., 2019). Empirical studies have also suggested that the level of IR expended depended on customer autonomy to adapt to a behavior (Sulaiman et al 2022; Kushwah et al., 2019).

Meta-analysis, research shows that there is a significant and positive relationship between IR motivation and purchase behavior (de Jesus et al., 2013), as customers are ready to involve in, any activity that will help in their self-enhancement (Ryan and Deci, 2000).However, existing literature has proposed that sometimes customers' purchase behavior cannot be well clarified by IR (Hansen et al. 2018; Tandon et al., 2020; Amatulli et al. 2019).Past studies on IR is not consistent on the significant predictors of purchase behavior and attitude to protect the environment. The research conceptualized integrated regulation as individual autonomy to behave in a manner that conforms to one's value. Besides, very little attention has been given to IR in the Ghanaian context. Therefore, the study suggested the following hypothesis:

H3a. There is a relationship between favorable AT to green food and Increased IR.

H3b. there is a relationship between favorable PB to green food and Increased IR

Introjected regulation (INR)

According to Ryan and Deci, (2000) introjected motivation refers to the desire of individuals to escape the negative feeling which includes fear and guilt. Introjected regulation is the low motivational degree of internalization that stimulates customers to think through the implied concerns of putting up behavior (Hansen et al., 2018). These concerns consist of positive results such as ego advancement or reward of negative concerns. (Lin and Hsu, 2015). The adoption to buy green food may be a result of gaining positive social rejections (Haivas et al., 2012).

Social gain explains the reason why a particular behavior is stopped or continued. (Ajzen, 1991). Moreover, Nuttavuthisit and Thøgersen, 2017). Molinillo et al. (2020) demonstrated that individuals' concern for the environment triggers a high level of positive intentional behavior towards green food. Further, Hansen et al. (2018) established that societal identity triggers consumers' intentions to purchase. Individuals will purchase green food because of fear of being rejected by society or being referred to as uncooperative if they refuse to buy green food. The research conceptualized

introjected regulation as the desire to prevent fear and guilt that is associated with refusing to adapt to a behavior. Empirical evidence shows that introjected regulation influences customers' purchase behavior (Göhler et al., 2023; Akram et al., 2023; Carfora et al., 2019). The research argues that customers' purchase behavior is directed at escaping blame. Although there is enough evidence on INR and PB the study sees it necessary to test it under the SD since there is little knowledge in the Ghanaian context.

Therefore, it is assumed that introjected motivation positively influences prosocial motivation. The researcher can conclude that higher INR is related to positive good attitudes and buying behavior.

H4a. AT to green food is related to Increased INR

H4b. PB to green food is related to Increased INR

External regulation (ER)

External regulation is referred to as an individual performing an act for a reward or to escape punishment Kushwah et al., 2019). This is a control form where individuals are regulated in their activities due to pressure, this implies that the individual is less self-determined. External regulation is referred to as an individual performing an act for a reward or to escape punishment Kushwah et al., 2019). This is a control form where individuals are regulated in their activities due to pressure, this implies that the individual is less self-determined. External regulation (ER) is fully controlled by outside forces and without any independent behavior (Kushwah et al., 2019). Some customers purchase green food due to external pressure from relatives and friends (Konuk, 2018).

A study by Konuk, (2018) explained that individuals purchase behavior is controlled by health issues and influence to protect the environment as green food promotes wellbeing as greed food has high nutrition values and is free from chemicals and its preparations do not harm the environment. Therefore, customers develop favorable attitudes to green food due to the health benefits and environment concern (Nuttavuthisit & Thøgersen, 2017). Though there are customers who are skeptical about the benefit of green food (Olson, 2017), yet many consumers are encouraged to buy green food to do away with the negative effect of chemicals in conventional food. (Thøgersen et al., (2016) as benefits associated with green food serve as an external force and trigger favorable attitudes to buy green food. Previous studies have established a positive relationship between External regulation and attitude and purchase behavior (Zahid, et al 2022; Nuttavuthisit & Thøgersen, 2017; Kushwah et al., 2019).

The research conceptualized external regulations of purchasing green food due to rewards or escape punishment. Even though there is past work on external regulations and purchase behavior, little attention has been given to the Ghanaian context. Therefore, the study suggested the following hypothesis:

H5a. AT to green food is related to Increased ER.

H5b. AT to green food is related to Increased ER.

The Moderating role of Environmental views

Environmental concern is defined as the level at which customers are willing to protect the environment and solve problems with their human activities (Nuttavuthisit & Thøgersen, 2017). Customer interest in environmental view motivates customers to purchase products that do not harm the environment (Kisi, 2019). With regards to the rise in environmental issues, the purchase and consumption of green foods has been given a lot of attention (Nguyen et al., 2019). According to Amatulli et al. (2019) environmental concern is the level at which an individual perceives himself as an intrinsic component of the environment. A study by Majali, et al (2022) explained that customers purchase and consume green products because of the problems in the environment.

The study by Kushwah et al., (2019) further argued that customers are recently aware that the poor state of the environment has significantly contributed to favorable customer attitudes towards green food. Individuals have the power to either choose food that will reduce environmental issues or not Nuttavuthisit & Thøgersen, 2017). Empirical evidence shows that the relationship between attitude and purchase behavior is strengthened by environmental concern (Kushwah et al., 2019; Amatulli et al. 2019; Nuttavuthisit & Thøgersen, 2017). Also, studies like Kisi, 2019; Lang, et al. 2022; Göhler, et al 2023), Nosi et al. (2020) concluded that environmental concern has a positive and significant relationship with purchase behavior.

Similarly, Khare and Pandey, 2017; Zhang et al., 2018; Molinillo et al., 2020 indicated that individuals who buy green food have a more ecological attitude to organic food than conversional food. Therefore, purchasing green food can be regarded as an ethical view to support environmental concerns (Kushwah et al., 2019). Again, customers with positive attitude towards the environment make environmental conscious decisions (Shabbir et al., 2020; Akram et al., 2023). Past studies on environmental concerns are significant moderating predictors of purchase behavior and attitude to protect the environment. The current research conceptualizes environmental concerns as customers who are willing to protect the environment. Despite numerous pieces of evidence regarding environmental concern, purchase behavior, and attitude, there is very little in the context of Ghana. Based on the above discussion, the following hypotheses were formulated:

H6a. Motivation is moderated by EV and BP.

Moderating role of green trust (GT)

Trust evaluates an individual's confidence *in a certain* food or environment (Kushwah et al., 2019; Carfora et al., 2019). Trust reflects a company's ability to deliver on promise (Majali, et al 2022). Trust is defined as the degree of confidence that the information on green food is true (Kushwah et al., 2019), Moreover Carfora et al. (2019) discovered

that customers purchase green food based on trust. Customers are skeptical about the content of green food as some claims may not be true (Akram et al., 2023). Previous studies have established that trust in green food positively influences purchase behavior (Riphah et al., 2022; Molinillo et al., 2020). Lack of trust can be related to the lack of data about green food. According to (Kisi, 2019; Lang, et al. 2022) trust is superior to green foods. Studies have found that lack of trust on the part of customers will reduce the likelihood of purchasing green food. (Nuttavuthisit & Thøgersen 2017). Empirical studies have found trust as a predicting moderator of motivation and purchase behavior (Majali, et al 2022; Kushwah et al., 2019; Molinillo et al., 2020). Moreover, customers who do not trust green food have low purchasing behavior (Carfora et al., 2019). Past research has established that customers purchase behavior is negative towards green food because of lack of trust (Majali, et al., 2022) and originality (Nuttavuthisit & Thøgersen, 2017). Interestingly, a similar study conducted on customers from Brazil shows there is no relationship between trust and the purchase intention of green food.

This is the situation of a new green market in developing economies such as Ghana, where there are improper regulations, and policies on green marketing. Customers find it difficult to build trust since there is less awareness and knowledge of green food (Kumi, 2019). Based on these reasons, the present research investigated trust as a moderator and suggested the following hypothesis:

H6b. Trust moderates the association between motivation and PB.

Methods

Population, sample and data

The target population was users and buyers of green food in Accra. The study was conducted in five restaurants. Individual participants were the actual buyers of green food. Owners of the restaurants were asked for permission to conduct the study. Before the data was gathered, a pilot study was conducted to make sure the questions in the questionnaire were important and easy to understand. Based on the outcome of the pilot, some of the questions were modified to suit the context of Ghana. The respondents were selected using a purposive sampling approach. The participants were approached on a weekday (4pm to 8pm) and weekends (12.pm to 8pm). Questionnaires were administered face-to-face and online to encourage participation. The researchers intercepted customers and screened them to make sure that customers who have knowledge about green food participated. For ethical reasons, respondents were kept from the public domain. The sample size was determined based on the recommendation of Altunısik et al. (2004), suggesting that a range of 30 to 500 participants with a 5% confidence interval is suitable for quantitative research.

Out of 800 questionnaires sent, 778 were returned (427 face to face and 351 online) were valid for the study representing a 97.2% response rate. The mainstream of the respondents were males, the average age was 25 years and the majority had formal

education. The analysis of the quantitative data involved various statistical techniques. Initially, Cronbach's alpha analysis was used to establish the reliability of the constructs' items within the context. Confirmatory factor analysis was then employed to validate the four main constructs of the study. Additionally, structural equation modeling (SEM) analysis was conducted to explore moderation effects, utilizing STATA 17. SEM analysis is particularly suitable for examining multiple relationships.

Research instrument and measurements

The questionnaire used for this study had two parts. The first part was on demographic areas. The second part includes the constructs of the SDT (which consist of both internal and external motivators), predicting moderators (environmental concern and trust) and attitude and purchase behavior. The researcher used reflective measurement logic to measure all the constructs examined in the study. Table 1 shows the measurement item of the research.

Intrinsic Motivation, Integrated regulation. Introjected regulation. Attitude. External regulations were measured using the past literature of Ryan and Deci, (2000). The statements were modified to suit the context of Ghana and each of the constructs was measured with four items. Trust of green food was measured based on past study of Kushwah et al., (2019) and four items were used and modified to meet the context of Ghana. The construct of environmental concern was measured using the past study of Amatulli et al. (2019) and four items were used to measure, it was modified to suit the Ghanaian context.

Table 1. Factor loadings.

Study measures	Measurement items	work	
		CFA	SME
Intrinsic Motivation (IMT)	IMT1: I buy green food because I have the desire to protect the environment.	0.87	0.80
	IMT2: I buy green food because I want to improve the environment.	0.81	0.88
	IMT3: I buy green food out of joy	0.86	0.87
	IMT4: I buy green food because of my mood	0.83	0.89
Integrated regulation (IR)	IR1: I order green food because of health.	0.83	0.87
	IR2: Ordering green food is part of my life.	0.85	0.97
	IR3: I buy green food because of self-esteem.	0.90	0.92
	IR4: I buy green food because of my values.	0.88	0.99

Introjected regulation (INR	NR1: I feel uncomfortable if I do not protect the environment for the future. INR2: I feel humiliated if I do not help to protect the environment. INR 3: I buy green food because of social gain. 1NR4: I buy green food to avoid social rejection.	0.88 0.92 0.89 0.81	0.82 0.96 0.87 0.89
Attitude (AT)	AT1: Ordering green food is noble. AT2: Ordering green food is pleasing. AT3: I have a strong belief in green food. AT4: It is approved practice to buy green food.	0.80 0.87 0.96 0.99	0.85 0.88 0.90 0.89
Purchasing behavior (PB)	PB1: In the last seven periods, I have purchased "green fruits." PB2: In the last seven periods, I have purchased green vegetable juice. PB3: I will encourage my friend to buy green food. PB4: I will refer my friends to buy green food.	0.81 0.89 0.89 0.92	0.80 8.70 0.90 0.82
External regulations	ER1: Purchasing green food is good for my wellbeing. ER2: Green food is eco-friendly. ER3: Green food is healthier than conventional food. ER4: Green food has great nutritional value.	0.78 0.84 0.87 0.79	0.75 0.79 0.85 0.87
Trust	TGF1: I buy green food because it has no chemicals. TGF2: Green food content is dependable. TGF3: The ingredient of green food is true. TGF4: Green food is natural	0.90 0.99 0.91 0.92	0.98 0.95 0.90 0.92
Environmental View	ENC1: I buy green food because of the environment. ENC2: Green food does not harm the environment. ENC3: I am concerned about the environment. ENC4: I will always protect the environment.	0.93 0.88 0.86 0.90	0.91 0.89 0.81 0.96

(Source: Author)

Findings

To check the common method biases, the researchers used Harman's single-factor test. All the items of the work recorded less than 0.5 which is the accepted threshold (Podsakoff et al., 2003). This shows that the work is free from common method bias. The variance inflation factors (VIF) were calculated to check on multicollinearity among the independent variables. The value score between 1.74- 2.05 shows no multicollinearity-related issues as all the values were below 0.5 which is the accepted threshold. (Hair et al., 2017). The researcher also evaluated the factor loading and composite reliability value. All the items were above the threshold of 0.5 and 0.7 in turn. Besides, the mean

variance extracted (AVE) of the constructs is bigger than 0.5 (Table 3). All the evaluation results show that the work has enough convergent validity (Fornell and Larcker, 1981).

Table 3. Validity and reliability analysis.

	CR	AVE	MSV	ASV	AT	IMT	IR	INR	PB	ER
AT	0.84	0.81	0.69	0.44	0.99					
IMT	0.78	0.80	0.65	0.49	0.87	0.84				
IR	0.80	0.78	0.67	0.47	0.88	0.88	0.78			
INR	0.79	0.71	0.64	0.46	0.85	0.84	0.80	0.85		
PS	0.81	0.81	0.63	0.44	0.81	0.85	0.79	0.79	0.84	
ER	0.83	0.81	0.68	0.45	0.85	0.80	0.80	0.78	0.79	0.76

(Source: Author)

Table 4. Confirmation of hypothesis.

hypothesis	Path	B value	significant
H1	AT-PB	-0.19	<0.001
H2a	IMT-AT	0.49	<0.001
H2b	IMT-PB	-0.07	<0.001
H3a	IT- AT	0.25	<0.001
H3b	IR-PB	0.81	<0.001
H4a	INR-AT	-0.18	<0.001
H4b	INR –BB	-0.11	<0.001
H5a	ER-AT	0.39	<0.001
H5b	ER-BB	0.31	<0.001

(Source: Author)

The discriminant validity was bigger than the square root value of each study measure's AVE (Fornell and Larcker, 1981) as in (Table 3). The study used SEM to give enough details on the prediction of the suggested research model. This was evaluated using the path coefficients, hypothesized paths, and the variance percentage that the dependent variable explains.

The work result discovers support for H2a ($\beta = 0.61^{***}$), H3a ($\beta = 0.48^{**}$), H3b ($\beta = 0.89^{***}$), H5a ($\beta = 0.27^{***}$) and H5b ($\beta = 0.17^{*}$). However, H1 ($\beta = -0.13$), H2b ($\beta = -0.08$), H4a ($\beta = -0.19$) and H4b ($\beta = -0.12$) were not accepted (see Table 4).

The model elucidated an 80.2% variance in customers' attitudes to green food and a 41.5% variance in customers purchasing behavior toward green food (Fig. 2).

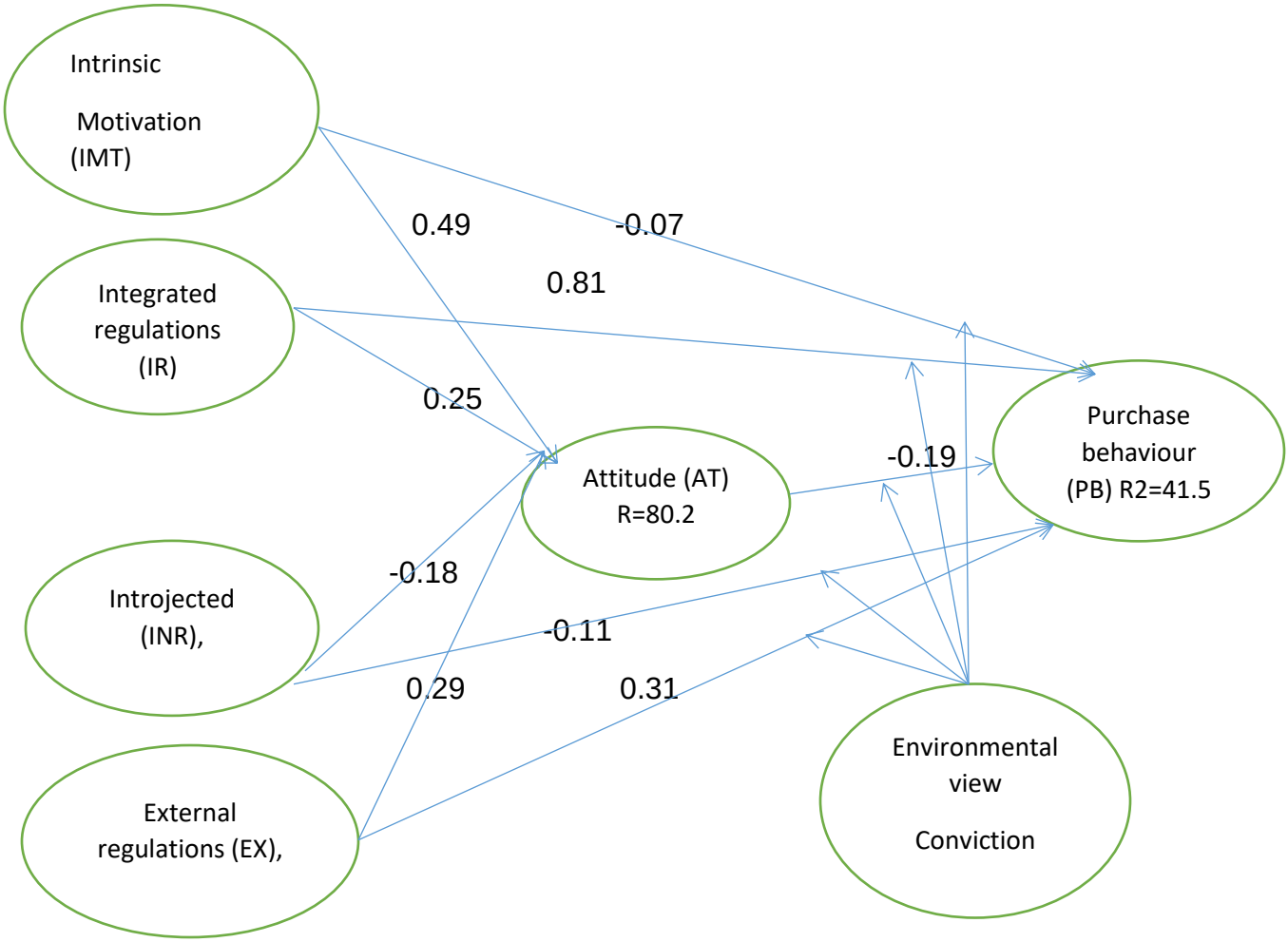

Figure 2. Result of the structural model.

(Source: Author)

Moderation analysis

Trust and environmental views as a moderating influence on the customer's attitude and purchasing behavior of green food were measured in the model using SPSS. As shown in Table 5, the relationship between motivations and buying behavior of green food was not moderated by Trust and environmental views. In the same way, the Trust did not moderate many of the cases except for the relationship between INR and purchasing behavior. Besides, INR and purchase behavior is moderated by Trust among the users (Tables 5 and 6). Therefore, the H6a and H6b were not accepted.

Table 5. Results of moderation analysis.

Trust						
	B	t	p	LLCI	ULCI	Moderation
IMT-PB	-0.02	0.52	0.69	-.1341	.0787	No
IR-PB	0.04	0.58	0.59	-0.672	0.327	No
INR-PB	1.4	2.57	0.76	0.354	0.232	Yes
ER- PB	0.51	0.90	0.38	0.474	0.267	no
Environmental Concern	B	T	P	LLC	ULCI	Moderation
IMT-PB						
IR-PB	0.30	0.57	0.59	-1.23	0.145	NO
INR-PB	-0.17	-0.20	0.74	0.98I	0.251	NO
ER-PB	0.02	0.15	0.87	0.924	0.155	NO
	-0.75	-1.15	0.24	0.980	0.741	NO

(Source: Author)

Table 6. Conditional process analysis at values of the moderator.

INR → PB (Trust as moderator)					
	effect	t	P	LLCI	ULCI
low	0.01	0.54	0.98	-.1114	.0244
medium	0.12	0.24	0.58	0.041	0.221
high	0.17	2.14	0.00	0.544	0.357

(Source: Author)

Discussion

Hypothesis 1 examined the relationship between AT and PB (H1), which was not significant. This is supported by Zahid, et al (2022) that purchase behavior is not related to attitudes. This means that other motivational factors may influence the purchase behavior of green food but not attitude. Hypothesis (H2a) tested the relationship between IMT and AT and BP (H2b). The result supports that internalized motivational factors are linked with good consumer attitudes to green food. This is because customers believe that green food protects the environment as related to conventional food Majali, et al (2022). The finding is supported by past work that IMT that helps individuals to attain high self-interest may encourage the acceptance of sustainable activities (Riphah, et al 2022). This shows that the tendency to create a favorable attitude is triggered by the act of enjoying activities that protect the environment. However, H2b, which investigates the relationship between PB and IM, is insignificant.

This means that customers do not enjoy the activity of buying green food. This may likely be barriers such as the price and availability of green food in restaurants. (Kushwah et al., 2019). This may be one of the reasons why there has been an inconsistent result on the association between attitude and buying of green food as demonstrated by previous research.

The next hypothesis investigates the relationship between AT and IR (H3a) and PB (H3b). The findings supported H3a which shows that personal values motivate customers to put together favorable attitudes to green food. This is supported by past work that personal values trigger the buying of green food. (Afum, et al 2022). Buying green food affords the customer pleasure which intends to influence an attitude which is in line with their ethical activities. (Kisi, 2019). Also, the relationship between PB and IR was accepted (H3b). Individuals that participate in ethical activities are likely to buy green food to match their unique personal identity. This is supported by literature //that self-identity triggers favorable purchasing intentions (Kushwah et al., 2019). The relationship between AT and IN (H4a) and PB (H4b) was examined, and the result was insignificant. This explains that IM is related to consciousness such as guilt and shame. This result is contrary to past work that argues that negative emotions do not trigger buying green food. (Olawale, 2019). The contradiction may be as a result of differences in locations and areas. The relationship between AT and PB and ER as hypotheses H5a and H5b are significant. The work results in those exterior forces triggering positive consumer attitudes. The finding suggested that Ghanaians buy green food because of the influence of close associates. This can be because of the influence of word-of-mouth recommendations from opinion leaders. This is supported by the past work of (Zahid, et al., 2022. This suggests that price barrier-related issues on buying green food can be dealt with using recommendations from a credible source to erase the negative issues that lead to the rejection of green food. The finding of the work shows the relationship between motivation and green food is not moderated by EV (H6a), This may be because of poor knowledge on the benefits of green food (Majali, et al 2022).

The findings are contrary to Sulaiman et al (2022) that customers in Germany have the environment at heart and are ready to protect it. There is support for trust as a moderating variable on the association between motivations, AT and BP (H6b). The researchers revealed that conviction affects the association between introjected regulation (INR) and PB. This means conviction can trigger the buying of green food. (Olawale, 2019).

Conclusion

The work examined the relationship between attitudes, motivations and buying behavior of green food. Trust and environmental views were introduced as moderating variables. The study adopted self-determination theory (SDT) to create a research model and examined it on 778 respondents at various restaurants in Accra using structural equation modeling (SEM). The result supported the assumption on the buying of green food, on motivations and attitudes. It was revealed that (INR) have no relationship with attitude or purchasing behavior.

Besides, internal motives are associated positively with individuals' favorable attitude to consuming green food. This shows that customers buy green food based on ethical reasons, therefore messages to promote the buying of green food must inculcate endorsement by option leaders and peer groups as extrinsic motives have a potential influence on green food. The association between attitude, motivation and purchasing behavior brings to bear theoretical views for marketing practitioners and policymakers on green food promotion.

Theoretical implication

The results of the study contribute to the existing literature in several ways:
First, the current work adopted a new theoretical framework, Self-Determination Theory (SDT), which has not been used in previous green food research. The adoption of SDT has elevated the research by shedding light on individual factors such as intrinsic and extrinsic motivation and how they trigger purchasing behavior. This addresses the existing gap between attitude and intention regarding green food by emphasizing individual attributes, such as a commitment to protecting the environment, as compared to conventional food (Asad et al., 2022).

Second, the present workplaces emphasis on purchase behavior, responding to a suggested future research request for a study on behavior rather than intention (Shabbir et al., 2020). These new factors were examined in the context of a developing economy, providing a fresh perspective on the buying of green food. Ghanaians may purchase green food due to social acceptance or rewards, indicating a commitment to sustainability and environmental protection.

Third, the present study creates a holistic understanding of green food, as motivation is identified as a requirement and triggering factor for purchasing green food. The insignificant relationship between attitude and purchasing behavior suggests that various elements influence customers' decisions regardless of their attitudes. This calls for further research to narrow the gap between attitude and behavior toward green food. The results of the moderating role of Green Trust (GT) and environmental view (EV) suggest that other factors, such as brand name, gender, and branding, may also affect decision-making regarding green food.

Managerial implications

The study has practical implications that can be beneficial in several ways:
First, to influence the purchase of green food, marketing practitioners and policymakers must focus on educating users about the benefits and reasons for adoption. Campaign messages should highlight basic needs and personal attributes that influence customer motivation to protect the environment. Informing customers about certifying agencies will instill trust in customers' minds regarding the authenticity of green labels. This trust will appeal to customers' self-identity and encourage them to purchase green food with reliable labels and content.

Second, marketing practitioners can use the findings to create advertising messages that stimulate customer motivation to purchase green food by emphasizing health and well-being benefits. The marketing campaign should emphasize the benefits of environmental conservation and community well-being through consuming green food.

Third, marketers must link the buying of green food to achievement. This will impact customer motivation and awaken a sense of ethical consumption. The campaign on customer orientation can be spearheaded by the government to instill a sense of doing the right thing by buying food that protects the environment.

The findings on the moderating role of Green Trust on Introjected Regulation (INR) and purchasing behavior suggest that the campaign must establish a relationship between environmental protection and green consumption to instigate a sense of responsibility among individuals who do not protect the environment.

Marketing personnel should encourage positive word-of-mouth to inspire peer groups and opinion leaders to influence members to buy green food based on the benefits to both the individual and society. While green food is mostly consumed in urban areas, the government should extend its efforts beyond urban areas to semi-urban centers by promoting the need to protect the environment.

Limitations and future research

First, the results of the study cannot be generalized as it focused solely on Ghanaians. Second, the present work emphasized relatively youthful customers, and there is a possibility of obtaining different results when the target population is changed. Future studies should consider international research to explore whether cultural differences affect green food consumption.

Edward Markwei Martey martey.edward@ktu.edu.gh Koforidua Technical University, Ghana.

References

Afum, E, Osei-Ahenkan, Agyabeng-Mensah, VY JA and Kusi,LY (2022). Green manufacturing practices and sustainable performance among Ghanaian manufacturing SMEs: the explanatory link of green supply chain integration Management of Environmental Quality: An International Journal 31 (6), 1457-1475

Agyekum, K., Adinyira, E. and Oppon, J.A. (2022), "Factors limiting the adoption of hemp as an alternative sustainable material for green building delivery in Ghana", International Journal of Building Pathology and Adaptation, Vol. 40 No. 2, pp. 202-218. https://doi.org/10.1108/IJBPA-11-2020-0100

Ajzen,I (1991). The theory of planned behavior Organ. Behavior. Hum. Decision Process. 50 (2), pp. 179-211

Ajzen, I. (2008) I. Ajzen Consumer attitudes and behavior C.P. Haugvedt, P.M. Herr, F.R. Cardes (Eds.), Handbook of Consumer Psychology (first ed.), Lawrence Erlbaum Associates pp. 525-548

Akram, H, Akhtar, S., Ahmad, A., Anwar, I., & Sulaiman MABA, (2023). Developing a Conceptual Framework Model for Effective Perishable Food Cold-Supply-ChainManagement Based on Structured Literature Review. Sustainability 2023, 15, 4907- 1-28.

Amatulli, M.D., Peluso, I.S., & Guido. G (2019). The effect of negative message framing on green consumption: an investigation of the role of shame J. Bus. Ethics, 157 (4), pp. 1111-1132.

Asad, M., Asif, M. U., Khan, A. A., Allam, Z., & Satar, M. S. (2022). Synergetic effect of entrepreneurial orientation and big data analytics for competitive advantage and SMEs performance. 2022 International Conference on Decision Aid Sciences and Applications (DASA) (pp. 1192-1196). Chiangrai, Thailand: IEEE.

Asif, W. X, & Nasiri, S. A (2018). Determinant factors influencing organic food purchase intention and the moderating role of awareness: a comparative analysis. Food Qual. Prefer., 63, pp. 144-150.

Basha, D. L (2019) Indian consumers' attitudes towards purchasing organically produced foods: an empirical study J. Clean. Prod., 215, pp. 99-111

Birch, J., M. & DeSilva. K (2018) The mindful consumer: balancing egoistic and altruistic motivations to purchase local food, J. Retailing Consum. Serv., 40, pp. 221-228.

Carfora, C. C, Caso, T. D, &. De Devitiis, R. V. (2019). Explaining consumer purchase behavior for organic milk: including trust and green self-identity within the theory of planned behavior Food Qual. Prefer., 76, pp. 1-9

Duong, C.D., Nguyen, B.N., Doan, X.H., Nguyen, V.H. and Vu, A.T. (2023), ""I do believe in karma": understanding consumers' pro-environmental consumption with an integrated framework of theory of planned behavior, norm activation model and self-determination theory", Management of Environmental Quality, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/MEQ-05-2023-0158 (Vietnam's).

Dunlap, R.E. (2002) Jones Environmental concern: conceptual and measurement issues Handbook of Environmental Sociology, 3 (6), pp. 482-524.

Fornell, D.& Larcker, F. (1981) Evaluating structural equation models with unobservable variables and measurement error Journal of Marketing Research, 18 (1), pp. 39-50.

Ghali, Z. (2019) Motives of willingness to buy organic food under the moderating role of consumer awareness Journal of Scientific Research & Reports, 25 (6), pp. 1-11.

Hair, C., Hollingsworth, A. & Randolph, A. C (2017). An updated and expanded assessment of PLS-SEM in information systems research Ind. Manag. Data Syst., 117, pp. 442-458.

Ham, A. & Pap, M. (2018). What drives organic food purchasing? – Evidence from Croatia Br. Food J., 120 (4), pp. 734-748

Hansen, M. I. & Sørensen, M. (2018). How the interplay between consumers motivations and values influence organic food identity and behavior. Food Pol., 74 pp. 39-52.

Khare, A |& Pandey, S (2017). Role of green self-identity and peer influence in fostering trust towards organic food retailers. Int. J. Retail Distrib. Manag., 45 (9), pp. 969-990.

Khan, Y., Hameed, I. and Akram, U. (2023), "What drives attitude, purchase intention and consumer buying behavior toward organic food? A self-determination theory and theory of planned behavior perspective",

British Food Journal, Vol. 125 No. 7, pp. 2572-2587.
Kim, M. and Lee, S.-M. (2022), "Drivers and interrelationships of three types of pro-environmental behaviors in the workplace", International Journal of Contemporary Hospitality Management, Vol. 34 No. 5, pp. 1854-1881.
Kisi, N., (2019). A Strategic Approach to Sustain-able Tourism Development Using the A'WOT Hybrid Method: A Case Study of Zonguldak, Turkey. Sustainability, 11(4), pp.964-975.
Konuk. A (2018). Antecedents of pregnant women's purchase intentions and willingness to pay a premium for organic food Br. Food J., 120 (7), pp. 1561-1573.
Kushwah, A. & Dhir, M. S (2019). Ethical consumption intentions and choice behavior towards organic food. Moderation role of buying and environmental concerns. J. Clean. Prod., 236, p. 117519.
Lazzarini, V.H. & Visschers, M. S (2018). How to improve consumers' environmental sustainability judgements of foods.
Majali, T., Alkaraki, M., Asad, M., Aladwan, N., & Aledeinat, M. (2022). Green transformational leadership, green entrepreneurial orientation and performance of SMEs: The mediating role of green product innovation. Journal of Open Innovation: Technology, Market, and Complexity, 8(191), 1-14.
Molinillo, M. &Vidal-Branco, A. J. (2020). Understanding the drivers of organic foods purchasing of millennials: evidence from Brazil and Spain J. Retailing Consum. Serv., 52, p. 101926.
Nuttavuthisit. A. & Thøgersen,T (2015). A. Khare Mediating role of opinion seeking in explaining the relationship between antecedents and organic food purchase intention Journal of Indian Business Research, 7 (4) pp. 321-337
Olawale F, (2019). Green Marketing Orientation and Environmental and Social Performance of Hospitality Firms in South Africa. Foundations of Management 11(1):277-290.
Owusu-Manu, D.-G., Debrah, C., Oduro-Ofori, E., Edwards, D.J. and Antwi-Afari, P. (2021), "Attributable indicators for measuring the level of greenness of cities in developing countries: lessons from Ghana", Journal of Engineering, Design and Technology, Vol. 19 No. 3, pp. 625-646.
Persaud, S.R. (2017) Purchasing organic products: role of social context and consumer innovativeness Market. Intell. Plann., 35 (1), pp. 130-146
Roehrich, J.K., Hoejmose, S.U. & Overland, V. (2017), Driving green supply chain management performance through supplier selection and value internalization: A self-determination theory perspective, International Journal of Operations & Production Management, Vol. 37 No. 4, pp. 489-509.
Ryan, E.L. & Deci, M (2000). Intrinsic and extrinsic motivations: classic definitions and new directions Contemp. Educ. Psychol., 25 (1), pp. 54-67.
Riphah, H. Z., Ali, S., Danish, M., & Sulaiman, M. A. (2022). Factors affecting consumer's intentions to purchase dairy products in Pakistan: a cognitive affective-attitude approach. Journal of International Food & amp; Agribusiness Marketing. doi:10.1080/08974438.2022.2125919
Shabbir, M. S., Sulaiman, M. A., Al-Kumaim, N. H., Mahmood, A., & Abbas, M. (2020). Green marketing approaches and their Impact on consumer behavior towards the environment study from the UAE. Sustainability, 1-13.
Shamsi, M.O. & Najafabadi, S.J. (2020). Hosseini Designing a three-phase pattern of organic product consumption behavior November 2018 Food Qual. Prefer., 79, p. 103743.
Shin, J. I, & Jung, K. S. (2019). Motivations behind consumers' organic menu choices: the role of environmental concern, social value, and health

consciousness J. Qual. Assur. Hospit. Tourism, 20 (1) (2019), pp. 107-122
Singh, P. & Verma. A (2017). Factors influencing Indian consumers' actual buying behavior towards organic food products J. Clean. Prod., 167, pp. 473-483.
Sirdeshmukh, J. & Singh, B. S (2002). Consumer trust, value, and loyalty in relational exchanges J. Market., 66 (1), pp. 15-37.
Sobhanifard, Y, (2018). Hybrid modelling of the consumption of organic foods in Iran using exploratory factor analysis and an artificial neural network Br. Food J., 120 (1) (2018), pp. 44-58.
Sultan, T. Tarafder, D. & Pearson, J. Henryks (2020). Intention-behavior gap and perceived behavioral control-behavior gap in theory of planned behavior: moderating roles of communication, satisfaction and trust in organic food consumption Food Qual. Prefer., 81, p. 103838.
Sulaiman MABA, Salman R, Shabbir M, Siddiqi F, Abbass M, Abbasi S, Rehman, K and Ashraf M (2022). Research on rumors surrounding food safety based on Information source differences (a review). Food Science and Technology, 42, e79921.
Tait, C., Saunders, M.& Guenther, P. R (2016). Emerging versus developed economy consumer willingness to pay for environmentally sustainable food production: a choice experiment approach comparing Indian, Chinese and United Kingdom lamb consumers.
Tariq, C., Wang, Y., Tanveer, U. Akram, Z. A (2019). Organic food consumers through social commerce in China Asia Pac. J. Market. Logist., 31 (1).
Theotokis, A. and Manganari, E. (2015) The impact of choice architecture on sustainable consumer behavior: the role of guilt J. Bus. Ethics, 131 (2) pp. 423-437.
Wang. W and Hou,Y (2015). Information and Organization Motivations of Employees' Knowledge Sharing Behaviors: A Self-Determination Perspective, vol. 25, Information & Organization, pp. 1-26.
Yadav,R and Pathak,G.(2016). Intention to purchase organic food among young consumers: evidence from a developing nation Appetite, 96, pp. 122-128.
Zahid, H, Ali, S, Danish, M and Sulaiman MABA (2022). Factors affecting consumers' intentions to purchase dairy products in Pakistan: cognitive affective- attitude approach. Journal of International Food & Amp; Agribusiness Marketing. Pages 1-10.
Zhang, Z., Fu, J. Huang, J. Wang, S. Xu, L. Z, (2018). Consumers' perceptions, purchase intention, and willingness to pay a premium price for safe vegetables: a case study of Beijing, China.