



“The relationship between green consumer orientation, green attitude, and green buying behavior in the Vietnamese food sector”

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THE RELATIONSHIP BETWEEN GREEN CONSUMER ORIENTATION, GREEN ATTITUDE, AND GREEN BUYING BEHAVIOR IN THE VIETNAMESE FOOD SECTOR

Abstract

This study employs the concept of green consumer orientation to examine its relationship with green attitudes and green buying behavior in the food sector of Vietnam. A random online survey of 871 individuals who had purchased green food in Vietnam during the period of March and April 2025 was used as the basis for quantitative analysis. After evaluating the validity and reliability of scales using Confirmatory Factor Analysis, the research model, developed hypotheses, and indirect relationships were evaluated using Structural Equation Modeling. The outcomes proved that the role of green consumer orientation with three dimensions (identification, equilibrium, and interaction) has a positive impact on green product attitude and green buying behavior in the food sector. More specifically, green buying behavior is most strongly influenced by interaction, followed by equilibrium; green attitude is most strongly influenced by identification, followed by interaction and equilibrium; green attitude has a direct positive impact on green buying behavior and has an indirect mediating effect in the relationship between identification, equilibrium, and interaction and green buying behavior. Since green food marketers can determine the dimensions of green consumer orientation to change their attitude and green buying behavior in the food sector. Theoretically, the novelty of this study is the validation and use of a green consumer orientation scale. With its three-dimensional structure, this scale is a concise, accurate, and complete tool that specializes in measuring consumers' tendency to use green products.

Keywords

consumer orientation, green attitude, green buying, green behavior, green food, green consumption

JEL Classification

M30, M31, L66

INTRODUCTION

Responsible and sustainable consumption then becomes the fashion of the century, characterized by a multitude of practices. These have distinguished it into three theoretical foundations, which are: ethical consumption, ecological or green consumption, and socially responsible consumption (Binninger & Robert, 2008). The concept of green consumption first emerged in the 1970s. For Peattie (2010), "green" implies the conservation of ecological resources, while consumption generally involves their destruction. In a terminological understanding of the concept, green consumption is the choice, acquisition, use, and destruction of goods and services while considering the environmental aspect. In simple terms and to stop any confused distinctions, the green is reflected as a significant abbreviation of being "oriented towards sustainable development".

Numerous academic contributions have since extended it. Thus, the growing environmental awareness of consumers in addition to their concerns about more environmentally friendly consumption, as well



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as a continual search for well-being, has led to a growing demand for green products, which stand out for their quality, less harmful to the environment and healthier for the consumer (Bravo et al., 2022; Meet et al., 2024). This demand for green products is reflected in the purchase of these products, with the intention of purchasing being the primary indicator.

Consumer orientation in marketing has been addressed in numerous ways; nonetheless, in a purely conceptual manner. The research discusses consumer orientation about entertainment, sports (McAllister & Basini, 2003). The orientation is a prominent feature of cultural values that influence consumer decision-making (Briley & Aaker, 2006; Bearden et al., 2006). According to the description of Parsons and Shils (1967), orientation is any mental tendency that leads to action in its final purpose. This meaning concerns consumer behavior, for orientation is the state of mind that has a pre-directed attitude and purchase intention. Therefore, any aspect that influences these can be reflected as an orientation determinant.

Some researchers have suggested that as consumers become increasingly concerned about what they eat, drink, and put into their bodies, their interest in green consumption is increasing (Cervellon et al., 2011; Ayoun & Schmitz, 2024). Based on Churchill's (1979) theoretical framework in developing, constructing and validating the green consumer orientation scale and the quantitative scale of green consumer orientation in the cosmetics sector of Ayoun and Schmitz (2024), this study opens a new research direction that considers green consumer orientation as a group of independent factors affecting attitudes towards green products and green consumer behavior in the food sector in Vietnam.

1. LITERATURE REVIEW AND RESEARCH HYPOTHESIS

The researchers contend that it should be examined concerning (1) the expected conditions of the relationships to which the action is directed, (2) the context in which it transpires, (3) the normative constraints on behavior, and (4) the energy spending or motivation required. The behavior process begins with direction thanks to these inputs. In his research on the orientation of a theater visit, Kantanen (1993) provided a clear conceptual description of consumer orientation as an individual's particular propensity to engage in predictable behavior when engaging in a consuming act. In their investigation of action theory, Parsons and Shils (1967) introduced the idea of orientation, stressing it as a primary and fundamental stage of activity. Pons et al. (2006) used the determining factors of the orientation of behavior to develop a consumer orientation scale for sports presentations.

In order to understand sustainable consumer behavior, recent research has been concentrating more on creating new constructs and, con-

sequently, new measurement scales. They have tried to offer novel measurement scales that explain the experiences of green behavior. Near this study project, the majority of these studies concentrate on ethics, social responsibility, or the environment (Sudbury-Riley & Kohlbacher, 2016; Gupta & Agrawal, 2018; Johnson & Chattaraman, 2019). These new dimensions effectively explain the environmental attitudes and behavior of consumers. In one of these studies, Haws et al. (2014) created a new factor called "green" that directs consumption of goods and services with an emphasis on green values. Bailey et al. (2018) investigated this variable in conjunction with other measuring scales to understand how consumers react to business green communication initiatives.

The concept of green value and green orientation that this study created appears to be closely related. It was described as the propensity to demonstrate the importance of environmental preservation through consumption and purchasing behavior (Haws et al., 2014). The green value, which solely concentrates on the environmental aspect, is unable to convey the same definition as green consumer orientation, which is based on a variety of green behavior catalysts. Hosta and Zabkar (2021)

proposed another intriguing construct called environmentally/socially consumer behavior, which represents the readiness to act in a way that is responsible for the environment and society. The willingness scale was created to describe responsible behavior. According to these authors, several personal, environmental, societal, and ethical elements influence this construct, which conveys an intention. The latter picture differs significantly from the green consumer orientation construct. Xara et al. (2023) analyze consumer, local producer, and retailer green orientation regarding local food production and consumption in an urban food market context. The findings indicated that while local businesses are less environmentally conscious, local consumers and retailers have a high degree of green orientation. These findings emphasize the significance of green “values” in local communities and the necessity of bolstering marketing initiatives and targeted training initiatives for all stakeholders, particularly locally produced sustainable goods.

The development of a theoretical framework and a scale for green consumer orientation is also of interest to some researchers. Churchill's (1979) model developed, constructed, and validated a green consumer orientation scale. Mixed methods, with a qualitative research approach to explore the predictors of green consumer behavior using focus groups, and a quantitative study to refine and validate the scale using Exploratory and Confirmatory Factor Analysis. Based on this model, recently, Ayoun and Schmitz (2024) developed a concise 21-item scale for measuring green consumer orientation (GCO) in the cosmetic sector in Algeria with three dimensions: identification, equilibrium, and interaction. In which GCO-identification includes two dimensions: cognitive and perceptual relationship; GCO- equilibrium includes three dimensions: health, environment, and accessibility; GCO-interaction includes two dimensions: social aspiration and external influence.

A complicated and persistent mental state, an attitude includes beliefs, feelings, values, and the propensity to act in particular ways based on a general evaluation of things. According to Kang et al. (2013), from the perspective of marketing, consumer attitudes have a direct impact on their intentions to make purchases. Several academics

sought to understand how attitudes affect green consumption. Fraj and Martínez (2007), who proposed that environmental knowledge mitigated the association between green conduct and ecological attitude, explained the impact of environmental information on consumer ecological behavior. Grunert and Juhl (1995) looked at the factors that influence people's attitudes toward purchasing organic food; their variables included environmental attitudes and values.

Consumer attitudes significantly influence their intention to purchase in the realm of green consumption (Gupta & Agrawal, 2018); their perceptions of green products play a crucial role in understanding green buying behaviors. Thus, these attitudes generally reflect how consumers evaluate these products. Nevertheless, additional research has confirmed that attitudes toward green behavior is affected by: (1) individual factors, including emotions, habits, perceived effectiveness as a consumer, perceived control over behavior, values and personal norms, trust, knowledge, lifestyles, and personality. (Joshia & Zillur, 2015; Shehawy & Ali Khan, 2024; Van Phuong et al., 2025) and (2) various social factors for example social status and social effect (Welsch & Kühling, 2009; Liu et al., 2012; Hoang et al., 2023; Tuu & Khoi, 2024; Zhao et al., 2025). Other studies focus on cultural, social, and psychographic elements influencing green behavior separately (Chan, 2001; Hartmann & Apaolaza, 2012; Souiden et al., 2011; Li et al., 2024; Meet et al., 2024; Van Phuong et al., 2025).

Green consumer attitudes are formed by intrinsic values that drive their purchasing behavior toward environmentally friendly products. It is often seen as a mediator influencing green purchasing behavior (Van Phuong et al., 2025; Shehawy & Ali Khan, 2024; Tuu & Khoi, 2024; Zhao et al., 2025). Studies on the impact of attitude on green purchasing behavior often develop from the Theory of Planned Behavior framework, in which in addition to attitude variables, there is also the variable of perceived behavioral control. It connected personal beliefs to individual behaviors, examined how attitudes affect behavior, and discovered that behavior is formed “from the inside out”, mainly highlighting the subjective world of people and human rational behavior (Shehawy & Ali Khan, 2024; Zhao et al., 2025).

Green buying behavior, also known as green purchasing or sustainable consumption, refers to the practice of purchasing products and services that are environmentally friendly (Soomro et al., 2020; Shehawy & Ali Khan, 2024; Zhao et al., 2025). This behavior involves making conscious choices to minimize the negative impact on the environment throughout the product's lifecycle, from production to disposal. It reflects a previous expression of potential purchasing; consequently, this result is valued highly in the quest for green behavior. Straughan and Roberts (1999) assert that conscientious consumer behavior toward the environment can be understood through psychological characteristics of orientation. Additionally, according to Hartmann and Apaolaza (2012), opinions regarding green products generally influence the buying of green items. With three dimensions (Willingness to pay premium prices, green business image, and personal spending), these studies demonstrate the significant relations in the "orientation-attitude-intention to purchase" process of green consumer behavior.

A green product is one that is characterized by natural ingredients that are safe for the environment and people to consume, produce, and dispose of. Notwithstanding the advantages they offer for the environment and human health, not all consumers are suited to engage in "green-oriented consumption behavior" or are equally involved in it (Schiffman & Wisenblit, 2015; Head et al., 2016; Haba et al., 2023; Li et al., 2024).

Green food buying behavior refers to consumers purchasing food products that are perceived to have a lower environmental impact and/or be healthier than conventional alternatives. This behavior often stems from a desire to reduce harm to the environment, support sustainable practices, or improve personal health (Cheng et al., 2024; Mai, 2019). Consumer behavior toward green foods is significantly influenced by psychological variables (Amit Kumar, 2021; Zameer & Yasmeen, 2022). The move toward sustainable consumption is essential to achieving the Sustainable Development Goals, particularly in poorer countries where environmental and health issues are becoming more pressing (Cong Doanh et al., 2021; Hoang et al., 2023). This shift is cited as a primary driving force for the research. Green food consumption has be-

come more popular, particularly in emerging nations like Vietnam, as a result of growing environmental risks brought on by fast industrialization and urbanization (Dhir et al., 2021). This underscores the need to research the factors influencing sustainable consumption patterns.

A thorough grasp of the psychological elements influencing customers' decisions to buy green foods is essential to promoting sustainable consumer behavior. Consumer views and green food purchasing behavior are greatly influenced by psychological factors such as social influence, health consciousness, and environmental concerns (Nascimento & Loureiro, 2024; Shehawy & Ali Khan, 2024; Zhao et al., 2025). Positive or unfavorable assessments of green food products are reflected in attitudes toward green food intake. The term "social influence" describes how consumers' intentions and behaviors regarding the purchase of green foods are influenced by others in their immediate vicinity, including friends, family, and societal norms (Aminizadeh et al., 2024; Yang et al., 2024). Green food products are more likely to be bought by consumers when those around them encourage them to do so (Yang et al., 2024). Furthermore, consumers' awareness and worry about environmental issues, as well as their willingness to adopt consumption practices that lessen their effects on the environment, are referred to as environmental concern (Junior et al., 2015). Additionally, health consciousness is the degree to which customers are cognizant of and worried about their health, leading them to choose better foods in order to safeguard their well-being (Liang et al., 2024).

Numerous studies have tried to explore the variables influencing green consumer attitudes and green purchase behavior (Van Phuong et al., 2025; Shehawy & Ali Khan, 2024). Furthermore, some studies on green consumer behavior have only considered the psychological approach, ignoring other approaches such as the social approach to consumer orientation. From that gap, this study aims to examine the relationship between green consumer orientation, green attitude, and green buying behavior in the Vietnamese food sector.

Elhoushy and Lanzini's (2021) systematic review study quantifies and ranks the predictors of sustainable consumer behavior based on the number

of important effects of this behavior. Furthermore, to the typical criteria considered in the Theory of Planned Behavior, a number of factors were particularly noteworthy. According to this analysis, in the majority of the examined studies, sustainable consumer behavior was highly impacted by income, trust, and religiosity. Although this study was not specifically focused on green consumption behavior, it also covers topics including ecological, ethical, and socially responsible, environmental, and green behavior.

Furthermore, additional significant factors have demonstrated their importance in driving consumer green purchasing, including personal characteristics or values and product attributes or product-specific values (Bhardwaj et al., 2023; Shehawy & Ali Khan, 2024; Zhao et al., 2025). Finally, several researchers have observed that green trust in products and services is a significant factor that has a positive impact on behavior modification decisions regarding organic food among consumers who are worried about their health and the environment (Lazaroiu et al., 2019; Van Phuong et al., 2025). Ayoun and Schmitz (2024) developed a scale for measuring green consumer orientation in the cosmetic sector in Algeria with three dimensions: identification, equilibrium, and interaction.

Therefore, this study aims to investigate the relationship between green consumer orientation, their attitudes, and green purchase behavior in the food sector in Vietnam; this in turn will contribute to the management aspect.

From the analysis in the literature review, in this section the author proposes a model and research hypotheses to examine the quantitative relationship between green consumer orientation, green attitude, and green buying behavior in the Vietnamese food sector. The study's hypotheses regarding green consumer orientation are as follows:

H1: The green consumer orientation (GCO) has an important influence on their green food attitude (GFA).

H1a: The GCO – identification (ID) has an important influence on their attitude towards green food products (GFA).

H1b: The GCO – equilibrium (EQL) has an important influence on their attitude towards green food products (GFA).

H1c: The GCO – interaction (INT) has an important influence on their attitude towards green food products (GFA).

H2: The green consumer orientation (GCO) has an important influence on their green food buying behavior (GFB).

H2a: The GCO – identification (ID) has a significant impact on their green food buying behavior (GFB).

H2b: The GCO – equilibrium (EQL) has a significant impact on their green food buying behavior (GFB).

H2c: The GCO – interaction (INT) has a significant impact on their green food buying behavior (GFB).

H3: The green product attitude (GPA) mediates the relationship between the green consumer orientation (GCO) and their green food buying behavior (GFB).

H3a: The green product attitude (GPA) mediates the relationship between the GCO – identification (ID) and their green food buying behavior (GFB).

H3b: The green product attitude (GPA) mediates the relationship between the GCO – equilibrium (EQL) and their green food buying behavior (GFB).

H3c: The green product attitude (GPA) mediates the relationship between the GCO – interaction (INT) and their green food buying behavior (GFB).

Finding the relationships between the variables in our conceptual model is challenging due to the dearth of research on consumer orientation, particularly concerning green consumer orientation and green product attitude toward green consumer behavior. Deductive analysis is the foundation of this study, as we have made clear throughout

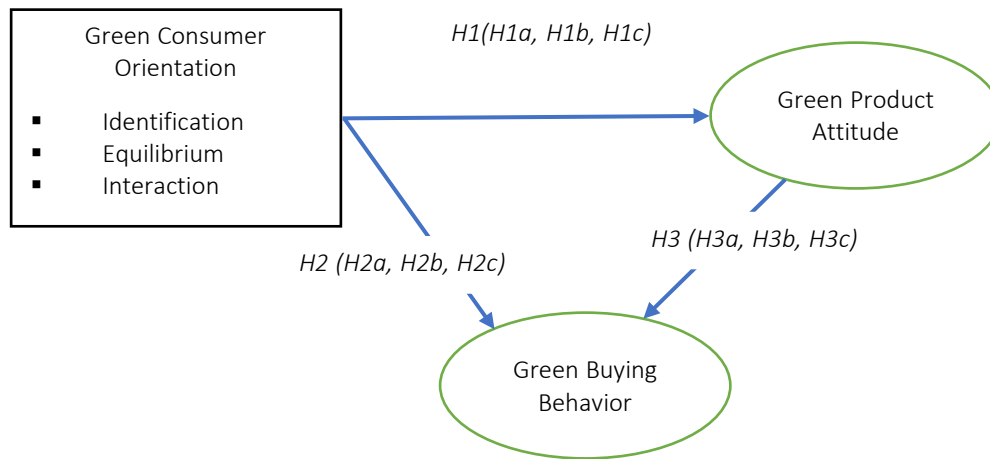


Figure 1. Conceptual model

this research report. This is what we use in this study to support the connections between the variables and the conceptual model’s presumptions. The novelty in this study is the use of the independent factor green consumer orientation of Ayoun and Schmitz (2024), with three dimensions: identification, equilibrium, and interaction, in the quantitative study of the causal relationship with the factors green product attitude and green food buying behavior.

2. METHODOLOGY

The green consumer orientation measurements were developed based on the scale of Ayoun and Schmitz (2024) with 21 variables, with three dimensions: identification, equilibrium, and interaction. The attitude towards green food scale, with 4 variables, was developed based on the research of Van Phuong et al. (2025). The green buying behavior scale, with 8 variables divided into two dimensions: intention to buy green food and action to buy green food, was developed based on the research of Cong Doanh et al. (2021) and Boccia and Tohidi (2024). The scale used is a 5-point Likert scale. The specific content of these variables is presented in Appendix A.

The study data were collected through personal online questionnaires. The questionnaire was designed on Google Form and sent to research subjects via the social networking application Zalo. The overall research population was determined to be Vietnamese consumers who had purchased

green food products. The sampling frame used was the database of customers who had purchased green food from three supermarket chains selling food in Vietnam, with about 38,000 customers, namely Bach Hoa Xanh, Winmart, and Bactom. The survey period took place in March and April 2025. The number of questionnaires sent was 1450, and the number of valid questionnaires collected for analysis was 871. The sampling method used was random selection on the defined sampling frame. The research subjects were introduced to the purpose of the research, the anonymity of the questionnaire, and the confidentiality of the information provided, and participants expressed their understanding and willingness to participate freely. These contents are presented on the first page of the questionnaire. They have read and agreed to provide information on the following pages.

First written in English, the questionnaire was later translated into Vietnamese. To confirm its authenticity, a second independent translator then translated the questionnaire from Vietnamese into English. To make sure the average Vietnamese consumer could understand the final Vietnamese version of the questionnaire, a small sample of Vietnamese customers was presented with it.

Exploratory Factor Analysis (EFA) was employed in this work in accordance with Hatcher (1994) recommendations, which state that the number of samples should be five times more than the number of observed variables. Since the study’s

model has 10 factors and 33 variables, at least $33 \times 5 = 165$ samples are needed. In quantitative factor analysis, Guilford (1954) recommended that the sample size be larger than 200. As a result, the 871 completed surveys satisfied the quantitative analysis's sample size requirements. Data analysis, test validity and reliability, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM), and the influence of mediating variables were all conducted using SPSS 22 and AMOS 25 software.

When analyzing a model, Exploratory Factor Analysis (EFA) is required to identify factors in the model, eliminate extraneous variables that do not meet the requirements of Cronbach's α testing, and evaluate the quality of the model according to KMO and the Bartlett test. This is why the EFA analysis method was chosen for this study, because multiple authors developed the scale used. Because AMOS software is excellent at confirmatory component analysis and hypothesis testing with a strong focus on model fit within a covariance-based framework – basically, AMOS prioritizes theoretical validation – we used it in this study to do SEM structural analysis utilizing the CFA and SEM techniques.

3. RESULTS

3.1. Descriptive analysis

This study did not analyze the differences between customer groups according to demographic criteria, so the results are only descriptive of the main demographic characteristics of the research subjects. The sample's respondents' demographic and socioeconomic characteristics are as follows: 81% are women and 19% are men. The following are their age groups: The percentages are as follows: 10.2% under 26, 42.9% between 26 and 45, 35.7% between 46 and 60, and 11.3% beyond 60. Of their educational background, 8.2% have only completed primary school, followed by secondary school (25.6%), college (53.7%), and a post-graduate degree (12.5%). Lastly, 25.6% of monthly income was below \$400, 44.2% was between \$400 and \$1,000, 18.2% was between \$1,000 and \$2,000, and 12% was over \$2,000 per month.

3.2. Assessing the reliability and validity of measures

Exploratory Factor Analysis (EFA) was used to evaluate the observed variables for convergent and discriminant validity. The Promax rotation method was used to perform an exploratory factor analysis on the data. The author performed a general EFA analysis for the independent, intermediate, and dependent variables because of the model's complexity and large number of intermediate variables. The author first used official study data to assess the Cronbach's α coefficient in order to test the reliability of the research model. According to the findings, all of the research variables' Cronbach's α coefficients were greater than 0.7, demonstrating a high degree of consistency and dependability (Nunnally, 1978). The KMO index was 0.845 (>0.5), the Bartlett test's significance level was less than 0.05, and the lowest Cronbach's α coefficient was 0.779.

The results of the Rotated Component Analysis in Table 1 show that the 23 observed variables are divided into 6 factors, respectively: GFA, INT, ID, EQLH (EQL1, EQL2, EQL3, ID6), EQLE (EQL4, EQL5, EQL6), and EQLA (EQL7, EQL8, EQL9). In this result, variable ID7 was removed from the model (communal extraction < 0.5), and variable ID6 was in the factor EQH (green consumer orientation – equilibrium – health). Factor ID (green consumer orientation – identification) has only 5 variables and is not divided into cognitive and perceptual relationship. Similarly, in factor INT (green consumer orientation – interaction), variable INT5 was removed from the model (communal extraction < 0.5); the remaining 4 variables are not divided into social aspiration and external influence as proposed. The remaining factors are divided exactly as proposed in the model. All of the factor loading coefficients are more than 0.5, according to the rotated matrix table data. The variables never load onto the factor concurrently with a difference of less than 0.3. Consequently, the first phase demonstrates that the EFA model is suitable and that all of the factor scale values are acceptable. EFA analysis of 8 dependent variables GBB1 – GBB8, the results create 2 dimensions (purchase intention and action to buy), the test coefficients all meet the requirements with Extraction Sums of Squared Loadings reaching 71.56%.

Table 1. EFA rotation matrix

	Component					
	1	2	3	4	5	6
GFA1			.780			
GFA2			.808			
GFA3			.869			
GFA4			.828			
INT1				.790		
INT2				.817		
INT3				.822		
INT4				.801		
ID1	.808					
ID2	.839					
ID3	.847					
ID4	.904					
ID5	.792					
EQL1		.848				
EQL2		.852				
EQL3		.866				
ID6		.814				
EQL4						.944
EQL5						.814
EQL6						.784
EQL7					.839	
EQL8					.866	
EQL9					.832	

3.3. Confirmatory Factor Analysis (CFA)

According to Anderson and Gerbing’s (1988) recommendations, the factor convergent and discriminant validity were evaluated using Confirmatory Factor Analysis (CFA) before looking at the structural models. The analysis’s findings are displayed in Figure 2.

The model with Chi-square/df = 2.810 is good because it falls between 1 and 3, according to the CFA results after looking at the correlation between the observed variable errors; RMSEA = 0.046 is good (RMSEA < 0.08), and PCLOSE = 0.952 is good; significant fit indices like GFI = 0.944, TLI = 0.951, CFI = 0.959, and IFI = 0.959 are also good (Figure

2). As a result, every index satisfies the criteria. As a result, the model works well with market data.

Additionally, the author looked at Table 3’s Composite Reliability (CR) and Average Variance Extracted (AVE) in order to thoroughly evaluate the scale’s quality and reliability. The observed variable is related to other variables in the same factor, indicating convergent validity, if C.R. is larger than 0.7 and AVE surpasses 0.5, according to Hair et al. (2022). On the other hand, discriminant validity is demonstrated if the square root of AVE is higher than the correlations between the two concepts, indicating that the observed variable is uncorrelated with other variables in other factors. Discriminant validity satisfies the necessary requirements since the results in Table 2 demonstrate that there is no validity issue.

3.4. Structural Equation Modeling (SEM)

The scale utilized in the formal quantitative study is appropriate for assessing the model and research hypotheses, according to the results of the scale testing. Using the same standards as in the previously discussed CFA analysis, the research model was tested using the Structural Equation Modeling (SEM) analytic approach. Figure 3 displays the SEM analysis’s findings. Chi-square/df = 2.978, RMSEA = 0.050, PCLOSE = 0.461, GFI = 0.938, TLI = 0.939, CFI = 0.950, and IFI = 0.950 are the primary test results for the SEM model. As a result, every index satisfies the criteria, and the model works well with market data.

The results of Table 3 show that hypotheses *H1a*, *H1b*, *H1c*, *H2a*, *H2c* are accepted, only *H2a* is rejected. The regression weights of the impacts between the three independent factors ID (green consumer orientation – identification), EQL (green consumer orientation – equilibrium), INT

Table 2. Test of discriminant validity between research concepts

	CR	AVE	MSV	MaxR(H)	EQLA	GFA	INT	ID	EQLH	EQLE
EQLA	0.771	0.628	0.011	0.787	0.792					
GFA	0.838	0.565	0.187	0.844	0.016	0.752				
INT	0.822	0.538	0.274	0.828	0.060	0.262	0.733			
ID	0.901	0.646	0.187	0.910	0.079	0.432	0.110	0.804		
EQLH	0.869	0.625	0.120	0.879	-0.019	0.103	0.042	0.100	0.791	
EQLE	0.821	0.606	0.274	0.840	0.104	0.166	0.523	0.094	0.346	0.778

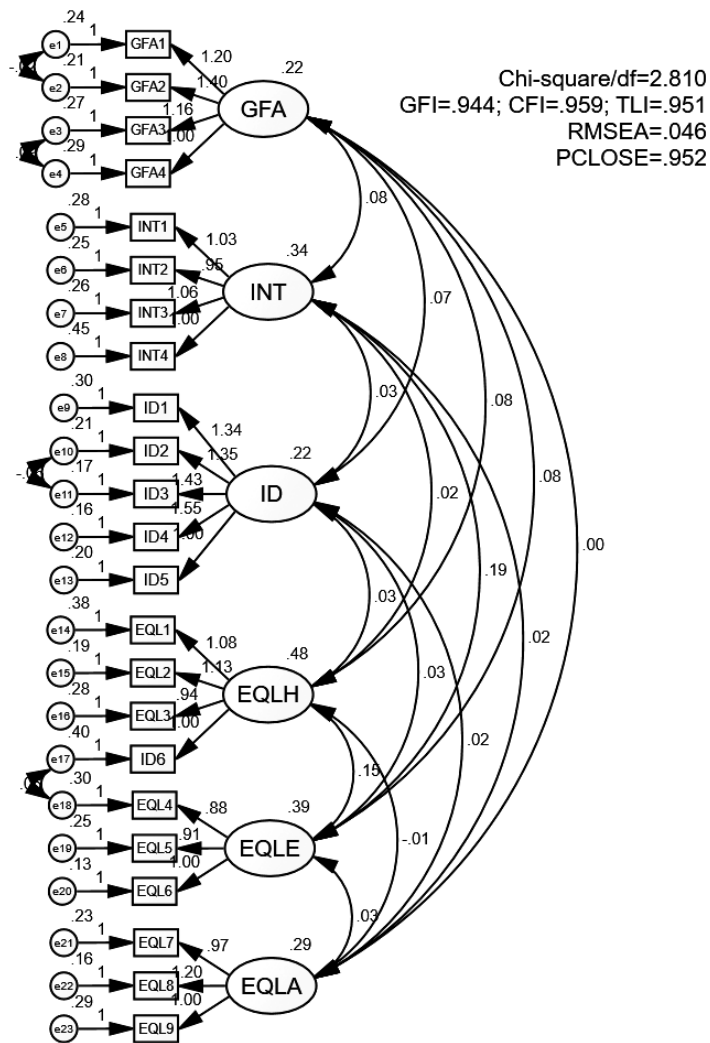


Figure 2. CFA analysis results

Table 3. Hypothesis testing results

Hypothesis	Linkage	Estimate	p-value	Result
H1a	ID→GFA	.36	***	Supported
H1b	EQL→GFA	.14	.027	Supported
H1c	INT→GFA	.27	***	Supported
H2a	ID→GGB	.01	.825	Rejected
H2b	EQL→GGB	.19	.004	Supported
H2c	INT→GGB	.40	***	Supported

(green consumer orientation – interaction) on the two dependent variables GFA (green product attitude) and GBB (green buying behavior) are in the range of 0.14 to 0.4, all lower than 0.5. Thus, it can be concluded that the impact of the independent factors is not high. Among the independent factors above, the INT factor has the strongest impact on the GBB factor, at 0.4, and on the GFA factor at 0.27. The independent factor ID has the strongest

impact on the GFA factor at 0.36, but ID has no impact on GBB. The EQL factor has an impact on both dependent factors, GFA and GBB, with lower weights of 0.14 and 0.19, respectively.

The results of Table 4 show that all three hypotheses H3a, H3b, H3c are accepted. In the impact relationship of the ID factor on the GBB factor through the intermediate factor GFA, it can be seen that ID

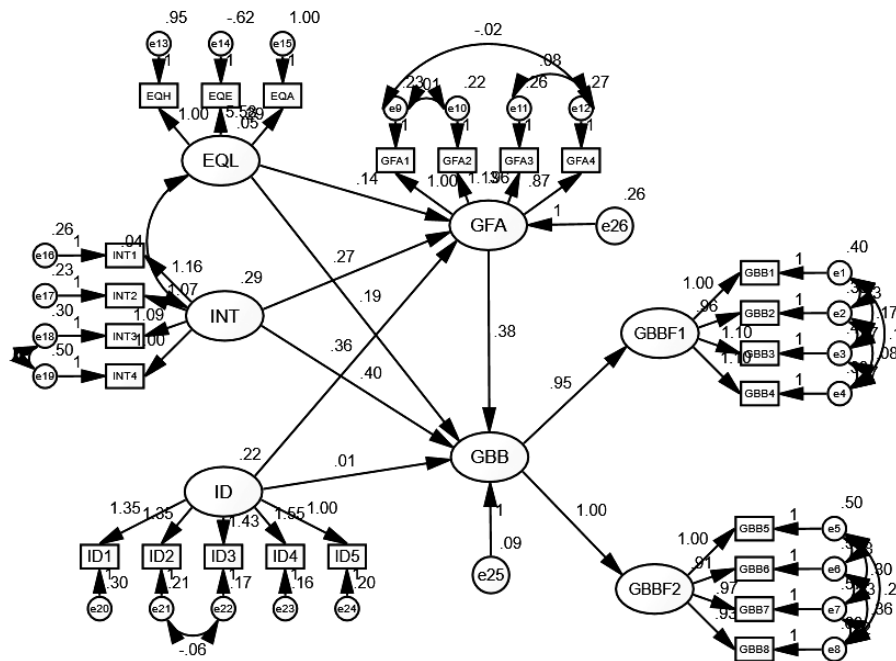


Figure 3. Structural model analysis test result

Table 4. Direct – indirect – total effect is testing results

Hypothesis	Linkage	Direct effect	Indirect effect	Total effect	Result
H3a	ID→GFA→GBB	–	0.15	0.15	Supported
H3b	EQL→GFA→GBB	0.19	0.05	0.24	Supported
H3c	INT→GFA→GBB	0.40	0.10	0.50	Supported

does not directly affect GBB but has an indirect impact through GFA with a small weight of 0.15. In the impact relationship of the EQL factor on the GBB factor through the intermediate factor GFA, it can be seen that the direct impact weight is 0.19, the indirect impact is 0.05, and the total impact is 0.24. In the impact relationship of the INT factor on the GBB factor through the intermediate factor GFA, it can be seen that the direct impact weight is 0.40, the indirect impact is 0.10, and the total impact is 0.50, which is the highest impact on GBB.

4. DISCUSSION

The causal relationship between green consumer orientation (three dimensions: identification, equilibrium, and interaction dimensions) and green product attitude and green buying behavior in the food sector is a new study. When evaluating the individual impact of the three dimensions on green

product attitude, the results showed that these three dimensions have a statistically significant positive impact, with the corresponding regression weights of 0.36, 0.14, and 0.27. This result shows that to have a positive attitude towards green products, it is important to create a cognitive and perceptual relationship in the identification dimension and social aspiration and external influence in the interaction dimension; the health, environment, and accessibility variables in the equilibrium dimension have a lower role. When evaluating the individual impact of the three dimensions on green buying behavior, the results showed that only two dimensions (equilibrium and interaction dimensions) had a statistically significant positive impact, with regression weights of 0.19 and 0.40, respectively. The regression weight of the identification dimension was not statistically significant. This result showed that to promote green buying behavior, it is important to create the social aspiration and external influence in the interaction dimension; then the health, envi-

ronment, and accessibility variables in the equilibrium dimension have a lower role.

When considering green product attitude as a mediating factor in the relationship between consumer orientation (three dimensions: identification, equilibrium, and interaction dimensions) and green buying behavior factor in food sector, the results show that equilibrium, and interaction dimensions have both direct and indirect impacts on green buying behavior factor with the total regression weight of 0.5 for interaction dimension (direct is 0.4 indirect is 0.1). The total regression weight of 0.24 for equilibrium dimension (direct is 0.19 indirect is 0.05), identification, the dimension has only an indirect impact with the regression weight of 0.15. This result shows that the interaction dimension is the most important factor to promote if we want to promote green buying behavior, specifically the social aspiration and external influence in the interaction dimension; then the health, environment, and accessibility variables in the equilibrium dimension; and finally the cognitive and perceptual relationship in the identification dimension.

Numerous intricate influencing aspects frequently undermine the green buying behavior. That has always been established by the fact that attitude affects both purchase intention and buying action, as we showed in the literature study. Many authors (Van Phuong et al., 2025; Shehawy & Ali Khan, 2024; Tuu & Khoi, 2024; Zhao et al., 2025) also conclude this view. During this research, we validated the scale. We demonstrated that green purchasing behavior and attitudes toward green products are influenced by consumer orientation using quantitative research. This concept has not been explored in the field of green food products. Thus, this study has helped to confirm theoretically the influence of three dimensions of consumer orientation (identification, equilibrium, and interaction dimensions) on attitudes and behavior of purchasing green foods. Furthermore, the attitude factor towards green foods is also analyzed as a mediating variable in the rela-

tionship between consumer orientation (identification, equilibrium, and interaction dimensions) and the behavior of purchasing green foods.

The validation and use of the green consumer orientation scale, which, unlike the majority of the previously mentioned studies, does not measure real behavior, but instead measures consumers' mental states related to their green product behavior, highlights the distinction between it and earlier research. This is also the novelty of this study. In more depth, with its three-dimensional structure, this scale is a concise, accurate, and inclusive instrument that specializes in measuring consumers' tendency to use green products. Thanks to its comprehensiveness, this scale carries new factors that have never been reflected earlier in green behavior, for example relationship of consumer and product, and accessibility. It also emphasizes how important external factors and health considerations are. This study demonstrates that green consumer orientation, which explains green attitudes and behavioral intentions, is a driving factor for green consumer behavior. Some of the gaps in green consumer behavior are intended to be filled by this tool.

Consumers in emerging nations are growing more dubious about the products on the market as they pursue green consumption. The Vietnamese government encourages businesses to incorporate green production as part of its sustainable development strategy in order to maximize the welfare of the populace. Businesses must take into account the factors that influence consumers' intentions to buy green products in light of their growing level of awareness. This study can be viewed as a model that businesses will use to grow Vietnam's green market. Green food marketers can influence the determinants of consumers' orientation to influence their green purchasing attitudes and behaviors, and aim to influence consumers' orientation (identification, equilibrium, and interaction dimensions), thus bringing a new perspective and a sustainable approach to the food market.

CONCLUSION

This study tested and used a new consumer orientation scale developed by Ayoun and Schmitz (2024) with 21 variables (three dimensions: identification, equilibrium, and interaction) to measure consumers' mental states related to their behavior toward green attitude and green buying behavior in the

Vietnamese food sector. The proposed research model has the independent factor as consumer orientation, the dependent factor as green consumer behavior, and the mediating factor as green product attitude. The significance of consumer orientation as a key and crucial stage of the behavioral consumption process has been illustrated by the study's findings. Furthermore, the consumers' mental states related to their behavior toward green foods are, based on the findings of this investigation, a significant factor in the impact of attitudes and consequently of green buying behavior.

The results demonstrated that the three elements of green consumer orientation—identification, equilibrium, and interaction—have a favorable effect on green product attitudes and green purchasing practices in the food industry. More precisely, interaction has the greatest influence on green buying behavior, followed by equilibrium; identification has the greatest influence on green attitude, followed by interaction and equilibrium; green attitude positively affects green buying behavior directly and acts as an indirect mediator in the relationship between identification, equilibrium, and interaction and green buying behavior. In order to alter consumers' attitudes and green purchasing habits in the food industry, green food marketers can identify the aspects of green consumer orientation.

This research highlights the interrelationships between health, social, environmental, economic, and cultural dimensions. These factors cause ambiguity in some predictors, which limits the scope of the study. Specifically, the green label and fair trade factors, other items representing social aspirations such as contagion, altruism, and perceived relevance, depend on the level of sustainable practices in a population. To overcome this limitation, it is proposed to add and re-examine these factors in future research.

The next limitation is related to the specific determinants and the research model built for developing countries, such as the last item expressing admiration for developed countries, which cannot be applied to all population groups. However, future researchers can adjust this scale to highlight specific cultural differences, for example, between rich and poor countries, countries on different continents, and countries with cultural and religious differences.

AUTHOR CONTRIBUTIONS

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APPENDIX A

Table A1. Measurement scales

Source: Primary research.

GCO – identification	
Cognitive relationship	
ID1	I am well informed about green food when buying
ID2	I always read the composition of green food when buying
ID3	I find information on green food whenever I look for it because it is available
Perceptual relationship	
ID4	Green foods are environmentally friendly
ID5	Green foods are derived from natural products
ID6	Green foods are good for health
ID7	Green food packaging is recyclable
GCO – equilibrium	
Health	
EQL1	Green foods contribute to my well-being
EQL2	Consumption of green foods preserves health
EQL3	Green foods have helped maintain my beauty over the years
Environment	
EQL4	The environmental impact is essential in my choice of foods
EQL5	Adopting green foods reduces our impact on the environment
EQL6	I feel that green foods should be environmentally friendly
Accessibility	
EQL7	Green foods are more expensive
EQL8	My income does not allow me to start consuming green foods
EQL9	It is not conceivable to supply the whole population with green foods
GCO – interaction	
Social aspiration	
INT1	I would like it to be known that I use green foods
INT2	It makes me proud when others know I use green foods
External influence	
INT3	Information campaigns on green foods attract my interest
INT4	Recommendations of doctors would lead me to turn to green foods
INT5	I appreciate the efforts of developed countries in terms of green foods
Green food attitude	
GFA1	I have a positive attitude towards buying green food
GFA 2	I believe purchasing green food is a good idea
GFA 3	I think buying green food is beneficial for the environment
GFA4	I feel good about purchasing green food products
Green buying behavior	
Purchase intention	
GBB1	I intend to buy green food shortly
GBB2	I will make an effort to purchase green food
GBB3	I plan to buy green food regularly
GBB4	I am likely to buy green food products
Action to buy	
GBB5	I frequently buy green food
GBB6	I have bought green foods in the past month
GBB7	Green food is what I like better than traditional food
GBB8	I advise green food to others