

The Role of Social Media on Green Food Consumption Intention in Hanoi, Vietnam

Nguyen Van Phuong¹ , Nguyen Thi Ngoc Mai² , Marcus Mergenthaler³ , Ly Thu Cuc⁴ , Pham Ngoc Huong Quynh¹ 

¹ VNU University of Economics and Business, Vietnam National University, Hanoi, Vietnam

² National Academy of Public Administration, Hanoi, Vietnam

³ South Westphalia University of Applied Sciences, Soest, Germany

⁴ Hanoi University of Industry, Hanoi, Vietnam

Abstract

This study aims to discuss the role of social media in shaping consumer attitudes in the Vietnamese context. The research examines the impact of green attitude, green customer value, and social media on environmental concerns, subjective norms, and perceived green value concerning green consumers' food purchase intention. The study utilizes data from a survey conducted among 483 consumers in Hanoi, Vietnam, and adopts the Theory of Planned Behavior (TPB) as the initial framework for studying green food purchase intention. We modify and extend the TPB model by incorporating cultural, social, and personal psychological factors relevant to green food consumption. The findings of this study contribute to the understanding of the factors influencing consumer purchase intention in Hanoi, Vietnam. The results demonstrated the influence of social media on subjective norms, environmental concerns, and perceived green value, which in turn affect green food purchase intention among Vietnamese consumers. These results imply that to increase green food preferences among consumers, governments should also consider social media-based education programs to build an understanding of green food and sustainable consumption and emphasize the outstanding benefits of green products for the environment and society. In addition, marketers should pay attention to providing complete information and advertisements about green food products on social media.

Keywords

Green consumption, green food, green food purchase intention, social media, TPB.

Phuong, N. V., Mai, N. T. N., Mergenthaler, M., Cuc, L. T. and Quynh, P. N. H. (2024) "The Role of Social Media on Green Food Consumption Intention in Hanoi, Vietnam", *AGRIS on-line Papers in Economics and Informatics*, Vol. 16, No. 2, pp. 107-120. ISSN 1804-1930. DOI 10.7160/aol.2024.160208.

Introduction

In recent decades, due to global warming and climate change, governments, enterprises, researchers, and consumers have paid great attention to reducing environmental pollution and obtaining sustainable development (ElHaffar, Durif and Dubé, 2020). To achieve sustainable development, efforts should link cleaner production with sustainable consumption (Ali et al., 2023). "Green foods refer to foods that are safe for consumption, fine in quality, and nutritious in meeting the principle of sustainable development" (Rezai, Kit Teng, Mohamed and Nasir Shamsudin, 2012, Golnaz, 2012). Therefore, green food consumption has been recognized as an environmentally significant behavior contributing to preventing non-environmental practices of manufacturers

(Mohd Suki and Mohd Suki, 2015). Many studies concentrate on green food consumption in worldwide countries to emphasize that consumers can contribute to sustainable development through their sustainable consumption (Yang, Tang, Cheung and Zhang, 2021, Bryant et al., 2019, Suhartanto et al., 2022).

In the recent literature, various studies have determined factors and mechanisms that motivate consumers to change their behavior toward green food consumption. Some studies have paid attention to analyzing the relationship between psychological, sociodemographic, and socioeconomic factors with green food purchase behavior (Wang and Wang, 2016, Witek and Kuźniar, 2021). For example, Rustam, Wang and Zameer (2020) investigated the influence

of consumers' perceptions and relational quality on their environmentally responsible behaviors, consumers' attitude towards green purchases, social trust and consumers' subjective norms can also affect their purchase intention (Nguyen et al., 2019, Nuttavuthisit and Thøgersen, 2017). Besides, Allen and Spialek (2017) determined gender inequality that affects a household's decision to adopt green consumption. Several studies suggest that environmental knowledge has a significant effect on consumer's intention to purchase green products (Dong, Jiang, Zeng and Kassoh, 2022, Wang, Nguyen and Bu, 2020). Previous studies also have provided substantial evidence on the factors influence of media including print media, electronic media, and social media on green purchases and green food consumption. Especially, social media has transformed the way of customers and businesses in selling green products, communicate, engaging shopping experiences (Chen and Lin, 2019). The impact of social media on consumer behavior and purchase intentions including the green food market has been extensively studied in several countries (Sun and Xing, 2022, Zorell, 2022).

In emerging countries such as Vietnam, the concept of green food is relatively novel, and a significant portion of consumers remains hesitant to embrace it (Nguyen and Dekhili, 2019, Anh et al., 2022). The primary factors contributing to this reluctance are economic challenges and a lack of established green purchasing habits, so manufacturers often prioritize price considerations over quality and food safety (de Koning et al., 2016, My, Rutsaert, Van Loo and Verbeke, 2017). Consequently, a shift in consumer attitudes towards green food could potentially prompt producers to modify their production methods to align with changing consumer preferences (Anh et al., 2022, Quynh et al., 2023). Given this context, the identification of factors influencing green food purchase intentions in Vietnam becomes imperative, assisting green food producers in understanding and adapting their practices to meet consumer needs and gradually fostering greater acceptance of green food. While a substantial body of research on Vietnamese consumers' purchase intentions of green food has utilized theoretical frameworks from Western developed countries, the Theory of Planned Behaviour (TPB) emerges as one of the most widely employed psychological theories (Boobalan, Nawaz, Harindranath and Gajenderan, 2021, Xie and Rasool, 2023, Nekmahmud, Naz, Ramkissoon and Fekete-Farkas, 2022).

However, there exists a noteworthy research gap, with limited studies specifically measuring consumers' purchase intentions in Vietnam with a focused emphasis on social media influences, utilizing the TPB framework. Specifically, the mediation role of social media in influencing green food consumption intentions through variables such as green product knowledge, subjective norms, environmental concerns, and perceived green value remains insufficiently explored. Addressing this gap in the literature is crucial for obtaining a nuanced understanding of the socio-cultural dynamics in Vietnam and offers valuable insights for both academic and practical applications in the realm of green food adoption

This research aims to address an existing research void by investigating the role of social media in shaping consumer perceptions within the Vietnamese context. To achieve this aim, we use data from a survey including 483 consumers in Hanoi – the capital of Vietnam. Findings from this study can help understand consumer behavior to propose the government's policy and enterprise's marketing strategies to encourage green food purchases in Vietnam. The Theory of Planned Behavior (TPB) has been chosen as the initial framework to study green food purchase intention. We modify and extend the TPB model by introducing cultural, social, and personal psychological factors toward green food consumption. Consequently, this study try to answer the questions of how social media influences green product knowledge, subjective norms, environmental concerns, and perceived green value toward green food purchase intention. This led to the outline of the antecedents of green food purchase intentions among Hanoi consumers.

Firstly, green product knowledge can have a significant impact on consumer purchasing intentions. The positive impact occurs when consumers know that a product is good for them, they will buy more. Conversely, if a product is not good for consumers, they will buy less (Dong, Jiang, Zeng and Kassoh, 2022). With knowledge about the product, consumers will have more confidence in it, thereby promoting them to make a purchase (Lam, Heales and Hartley, 2020). According to Ghali (2020), Tunisian consumers purchase organic food because they believe that using organic products is good for their health. From the findings above, the Hypothesis 1 is developed: *Green product knowledge has a positive impact on green food purchase intention.*

Secondly, the environmental concerns of consumers

have become increasingly important in sustainable development. When consumers are concerned about the environment, they will have a better understanding of it, and therefore take actions that cause less harm to the environment (Suhartanto et al., 2022). A previous study sampled consumers in Hong Kong, China and showed that environmental concerns strongly influence consumer attitudes (Sh. Ahmad, Rosli and Quoquab, 2022). It is also recognized that environmental concern has a positive impact on the intention to buy organic food among young Chinese consumers (Joo, Seok and Nam, 2020). Environmental concern is the main motivation for the intention to purchase organic food (Santhoshkumar and Kousalyadevi, 2022). Therefore, the Hypothesis 2 is: *Environmental concerns have a positive impact on green food purchase intention.*

Thirdly, subjective norms can have a positive influence on customers' eco-product purchase intention. Subjective norms not only reflect the individual's concern but also the societal acceptance or rejection of certain behaviors and attitudes (Ali et al., 2023). In general, it can be understood that consumers often purchase products not only to satisfy their own needs but also to impact social needs, establish and maintain social relationships, as well as achieve other social functions such as social status (Zorell, 2022). From the perspective of buying green products, subjective norms may be considered as a suggestion for individuals to act and contribute to pro-environmental intentions towards sustainable products. Subjective norms have a significant impact on consumers' intention to purchase green food products (Qi and Ploeger, 2019). In other words, subjective norms had a positive influence on customers' eco-product purchase intention. Thus, the Hypothesis 3 is developed: *Subjective norms are positively related to green food purchase intention.*

Fourthly, perceived green value can be reflected as one of the important contributors to assessing the effectiveness of pro-environmental behavior. Perceived green value can be understood as the overall evaluation of consumers about what they give and receive from a product or service, based on their desire for environmental friendliness, expectations of sustainability, and green needs (Kennedy and Adhikari, 2022). Perceived green value is an attribute related to the perceived value of a product, so it can establish positive word-of-mouth effects and increase green purchase intention. When consumers perceive the green value for themselves and the environment from buying

a green product, they will be more willing to purchase it (Zinoubi, 2020). Perceived green value has a significantly positive impact on green purchasing intention. The higher the perceived green value of green products, the stronger the purchase intention of consumers (Zhuang, Luo and Riaz, 2021). From the findings above, the Hypothesis 4 is developed: *Perceived green value has a positive impact on green food purchase intention.*

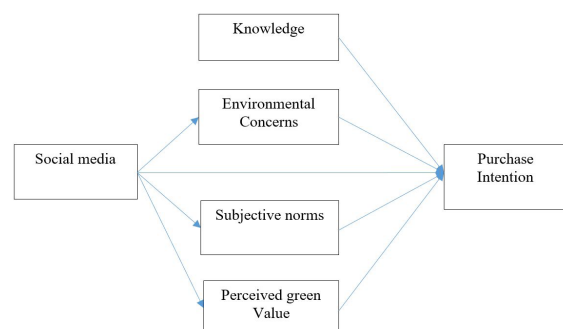
Furthermore, we analyzed the influence of social media on perceived green value and green purchase intention. The social media environment is popular and allows users to be influenced by interactions on social media and shared information content during their browsing and they can interact to take sustainable development actions (Joo, Seok and Nam, 2020). For example, people sharing photos of their use of green products and their experiences with them on social media will encourage others to be more practical and promote awareness of sustainable consumption through tangible actions and promote awareness of sustainable consumption among others (Van Boven, Kane, McGraw and Dale, 2010). At the same time, many retailers of green products post positive messages about the environment and related green product information on social media platforms, thereby stimulating readers' green value perception and positively influencing individuals' purchasing behavior towards green products (Zorell, 2022). It can be seen that social media messages information about the environment also stimulate the perceived green value of consumers, and the higher the perceived green value, the stronger the intention to purchase green products (Sun and Xing, 2022). Hence, the following hypotheses are developed. Hypothesis 5: *Social media has a positive impact on green food purchase intention.* Hypothesis 6: *Social media has a positive impact on perceived green value.* Hypothesis 7: *Perceived green value mediates between social media and green food purchase intention.*

Moreover, the influence of social media on environmental concerns and green purchase intention is analyzed in this research. Social media sharing channels play an important role in environmental communication (Severo et al., 2019). Social media outlets share environmental information, including messages promoting green environmental protection, which is a positive message that benefits people (Tlebere, Scholtz and Calitz, 2016). Some companies share information on social media to encourage green consumer behavior to address environmental

protection issues (Idowu, Capaldi, Zu and Gupta, 2013). For example, Starbucks focuses on green marketing, promoting green ideas about the environment to develop green consumption habits among consumers (Tsai et al., 2020). Exactly, when consumers pay attention to information on social media, they increase their awareness of using environmentally friendly products, which will increase their intention to buy green products (Kang and Kim, 2017). Hence, the following hypotheses are developed: Hypothesis 8: Social media has a positive impact on environmental concerns. Hypothesis 9: *Environmental concerns mediate between social media and green food purchase intention.*

In addition, the influence of social media on subject norms and green purchase intention is described. The interaction and sharing of information on social media allow consumers to feel social pressure, which can influence or be influenced by subjective norms. In a comparative study of Chinese and Korean consumers, it is evident that Chinese consumers' green consumption behavior is positively influenced by external social factors such as collective values and the behavior of their community, family, and friends (Lee, 2017). Moreover, well-known people in sharing information on social media can transmit messages about green lifestyles on social media platforms, e.g., sharing information about green products on social media can increase their fans' environmental awareness (Chwialkowska, 2019). In this way, social factors are important to trigger the Chinese consumer's intention to purchase green products (Podoshen, Li and Zhang, 2011). Hence, the following hypotheses are developed. Hypothesis 10: Social media has a positive impact on subject norms. Hypothesis 11: *Subject norms mediate between social media and green food purchase intention.*

Based on the above hypotheses, a theoretical model (Figure 1) was developed:



Source: Author's proposed model

Figure 1: Conceptual model

Materials and methods

To test the hypotheses depicted in Figure 1, a questionnaire-based survey with face-to-face interviews was implemented among consumers in Hanoi, Vietnam.

Questionnaire development

The data was used in this study collected from the consumer survey through a questionnaire. All items have been widely used and have been validated in previous studies. The questions in the questionnaire were discussed and tested within one group discussion with 7 researchers and lecturers from universities and two groups of consumers in Hanoi with 7-8 people for each group to clarify the meaning of the questions in Vietnamese. However, to avoid misunderstanding, the authors conducted a primary survey with face-to-face interviews 20 consumers and revised the questionnaire before distributing officially the questionnaires to a large number of respondents. The items are measured by five-point-Likert's scales that ranged from 1 (strongly disagree) to 5 (strongly agree). The items and sources used in the questionnaire are described in Table 1.

Data collection method

In this study, the total study population was covered the total number of customers working and living in Hanoi, the capital of Vietnam. In these populations, the samples were selected through convenience sampling technique. The research team has taken a sample size of 501 respondents by interviewing "face to face" in 3 local markets, 5 convenience stores and 2 supermarkets around Hanoi city. The survey was conducted by a group of students from Dec. 2022 to Mar. 2023. The students have been trained to understand the concepts of the items in the questionnaire. The interview time was around 30 minutes on average. Concepts used the questionnaire were explained directly to the respondents such as green food, environmental benefits.

Data analysis method

The data collected from 501 respondents was entered into the Excel template. However, some observations contain missing information or have not been completed. So, the authors have dropped 18 observations. The data set with 483 respondents was used for this study's purposes. Descriptive statistics were used to describe the demographic characteristics of the survey samples. An exploratory factor analysis was conducted, and Cronbach's alpha was used to check

Variables	Items	Explanation	Reference
Knowledge	KNO1	I know the relationship of green consumption and the environment.	Cheah and Aigbogun (2022); (Ghali, 2020); Zameer and Yasmeen (2022)
	KNO2	Human usage of equipment and transportation causes pollution.	
	KNO3	Use of non-recyclable material causes severe effects for the environment.	
	KNO4	Energy usage in production process is also the cause of environmental problem.	
Subjective norms	SNO1	My acquaintances are very responsible for the environment.	Qi and Ploeger (2019); Sun and Xing (2022); Kumar, Manrai and Manrai (2017)
	SNO2	My acquaintances think green purchase behavior is essential for the environment.	
	SNO3	My acquaintances advised me to implement green purchase behavior.	
	SNO4	My acquaintances introduce me to green food.	
	SNO5	My acquaintances support my green food purchase behavior.	
	SNO6	My acquaintances' viewpoints influenced my decision to purchase green food.	
Perceived green Value	PGV1	I buy green food because of the better environmental benefits.	Sun and Xing (2022); (Zinoubi, 2020)
	PGV2	The eco-friendly features of the green food are value for the money for me.	
	PGV3	The environmental performance of the green food meets my expectations.	
Purchase intention	INT1	I will consider purchasing green food.	Zafar, Shen, Shahzad and Islam (2021); (Zameer and Yasmeen, 2022)
	INT2	I want to purchase green food.	
	INT3	I will purchase green food in my next shopping.	
	INT4	I would recommend other people to purchase green food.	
Environmental Concerns	ENC1	I am really worried about the current environmental situation of the world.	Cheung and Services (2019); Zameer and Yasmeen (2022); Ghali (2020)
	ENC2	People at planet should live in harmony to protect nature	
	ENC3	I think humans are creating disastrous consequences for the environment.	
Social media	SOM1	I can use social media information sharing to interact with others about green consumption.	Sun and Xing (2022); Severo et al. (2019)
	SOM2	My engagement with environmental topics on social media sharing has influenced my green food purchases.	
	SOM3	The eco-friendly information shared in social media messages was able to give me easier access to information or feedback on green food.	
	SOM4	On social media, information sharing content about green food is worthwhile and trusted.	

Source: Own, 2023

Table 1: Variables, items, and explanations used in the PLS-SEM.

the internal consistency of the variables.

This study used Microsoft Excel (2010) for descriptive statistical analysis of the sample. Smart PLS (version 3.2.8) software was used for factor analysis. The partial least squares structural equation modeling (PLS-SEM) was used to examine the proposed hypotheses. The PLS-SEM is widely used in green consumer behavior research for several reasons. It handles complex models with multiple independent and dependent variables and does not require normally distributed data. PLS-SEM allows simultaneous analysis of measurement and structural models, providing insights into the latent factors influencing behavior. It also facilitates multi-group comparisons and evaluates the validity and reliability of measurement scales. This method is crucial for examining nonlinear relationships and interactions, making it a powerful tool for understanding the drivers

of green consumer behavior and developing effective marketing strategies. To test hypotheses using PLS-SEM, the total sample must be more than 5 times items (Hair, Risher, Sarstedt and Ringle, 2019). In this study, we have 33 items; the total sample must be more than 165 observations, so 483 respondents used for analysis is enough. In addition, this study used a multiple regression method and a Bootstrap method to test hypotheses.

Results and discussion

Profiles of the respondents: The Table 2 shows the characteristics of the respondents. The sample covers all age groups. Around 60% of them are female. Regarding the educational level, almost all respondents have a college and vocational education level or higher. The highest percentages

Variable	Category	Frequency	Percent (%)
Age (years)	< 24	95	19.67
	25 to 34	94	19.46
	35 to 44	95	19.67
	45 to 54	73	15.11
	55 to 64	62	12.84
	> 64	64	13.25
Gender	Male	190	39.34
	Female	293	60.66
Education	Under high school	34	7.04
	High school	48	9.94
	College and vocational	184	38.1
	University & higher	217	44.92
Occupation	Worker	68	14.08
	Farmer	13	2.69
	Officer and staff	202	41.82
	Businessman/woman	91	18.84
	Others	109	22.57
Family annual income (million VN Dong)	< 100	62	12.84
	100 to 199	128	26.5
	200 to 299	152	31.47
	300 to 399	93	19.25
	400	48	9.94
Total		483	100

Source: survey, 2023

Table 2: Demographic characteristics of the respondents (N = 483).

of jobs are officer and staff (40.7%). Most family incomes were 200 to 299 million Vietnam Dong per year.

To assess the reliability of the factors and items, the study used indices such as outer loading, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) (Table 3). Specifically, the single-factor loading coefficient of all items was greater than 0.7 (Hair, Risher, Sarstedt and Ringle, 2019). The outer loading factor value less than 0.7 will be removed from the model and the loading factor value greater than 0.7 means that it has good validity. So, some Items INT4, SNO3, and SNO4 have been removed from the model. The analysis results show that all other factors have an outer loading coefficient greater than 0.7.

All factors have Cronbach's alpha greater than 0.7, indicating that the measurement scales are reliable and can be used in the model (Hair, Risher, Sarstedt and Ringle, 2019, Sarstedt, Ringle and Hair, 2021). AVE and CR are measures of the quality of the items, with AVE being an indicator of convergent validity. The values of AVE and CR range from 0 to 1,

with higher values indicating higher reliability. An AVE greater than or equal to 0.5 confirms convergent validity (Hair et al., 2019). Thus, the test results of AVE and CR indicate that the construct is reliable.

The results in Table 4 shows that the diagonal elements of the matrix, which correspond to the square root of the AVE, consistently exceed the diagonal elements of their corresponding rows and columns. This finding provides evidence for the discriminant validity of the scales used in the study (Fornell and Larcker, 1981). Additionally, the items exhibit a stronger correlation with their respective constructs than with other constructs, as most entries in the matrix load above or close to the threshold of 0.50. These results suggest that all constructs can be considered reliable and warrant further investigation into the relationship between the dependent and independent variables (Hair, Risher, Sarstedt and Ringle, 2019).

To find out whether hypotheses can be accepted or rejected based on the value of the path coefficients, t-statistics and p-values were

Items	Outer loading	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Environmental Concerns		0.85	0.907	0.766
ENC1	0.881			
ENC2	0.873			
ENC3	0.872			
Purchase Intention		0.856	0.912	0.776
INT1	0.886			
INT2	0.888			
INT3	0.868			
Knowledge		0.776	0.856	0.599
KNO 1	0.785			
KNO 2	0.771			
KNO 3	0.808			
KNO 4	0.729			
Perceived green Value		0.758	0.859	0.671
PGV1	0.769			
PGV2	0.889			
PGV3	0.795			
Subjective norms		0.842	0.894	0.678
SNO1	0.82			
SNO2	0.807			
SNO5	0.793			
SNO6	0.871			
Social media		0.862	0.906	0.707
SOM2	0.842			
SOM3	0.807			
SOM4	0.824			
SOM1	0.888			

Source: survey, 2023

Table 3: Evaluation of measurement model.

	Environmental concerns	Knowledge	Perceived green Value	Purchase Intention	Social Media	Subjective Norm
Environmental concerns	0.875					
Knowledge	0.345	0.774				
Perceived green Value	0.118	0.214	0.819			
Purchase Intention	0.528	0.463	0.357	0.881		
Social Media	0.350	0.541	0.201	0.401	0.841	
Subjective Norm	0.312	0.417	0.357	0.659	0.331	0.823

Source: survey, 2023

Table 4: Discriminant validity test results.

considered. The research hypothesis testing ledge was carried out using the SmartPLS 3.2.8 software. Based on bootstrapping analysis which the results are interpreted based on the criteria for the t-statistics > 1.96 with a significance size

of p-value 0.05 (5%) and the beta coefficient is positive.

From the t-test results, almost all variables are found to influence directly and indirectly

and have significance values. Only Social media does not directly influence green food purchase intention (Table 5). Thus, from the results, we can make decisions for the hypotheses as presented in Table 6.

In combination, the role of social media affected green food intention is shown in Figure 2.

One major finding in our study is the significant influence of four factors (green product knowledge, environmental concerns, and perceived green value and subjective norm) on consumers' intention to purchase green foods. That is, if consumers know that a product is good for them, has less impact on the environment, and can create value

for society, they intend to purchase more. This result is consistent with the work of Zameer and Yasmeen (2022), and the study of Sun and Xing (2022), which apply the TPB for green purchase intention. Several other studies suggest that consumers in developing and emerging markets such as Vietnam, pay little attention to environmental quality when making purchasing decisions (Barbarossa and De Pelsmacker, 2016). However, the findings of this study may suggest that Vietnamese consumers increasingly express environmental concerns and perceived green values through their intended purchasing decisions regarding environmentally friendly products. This may be because the respondents

Path Coefficient	Original Sample (Beta)	Sample Mean (M)	Standard Deviation (STDEV)	t Statistics (O/STDEV)	p Values
Direct effects					
Environmental concerns -> Purchase Intention	0.315	0.313	0.044	7.167	0
Knowledge -> Purchase Intention	0.108	0.11	0.036	2.989	0.003
Perceived green Value -> Purchase Intention	0.124	0.122	0.032	3.843	0
Social Media -> Environmental concerns	0.35	0.355	0.045	7.757	0
Social Media -> Perceived green Value	0.201	0.204	0.044	4.517	0
Social Media -> Purchase Intention	0.058	0.06	0.044	1.321	0.187
Social Media -> Subjective Norm	0.331	0.334	0.052	6.403	0
Subjective Norm -> Purchase Intention	0.452	0.451	0.043	10.564	0
Specific Indirect effects					
Social Media -> Environmental concerns -> Purchase Intention	0.11	0.111	0.019	5.719	0
Social Media -> Perceived green Value -> Purchase Intention	0.025	0.025	0.009	2.712	0.007
Social Media -> Subjective Norm -> Purchase Intention	0.15	0.15	0.021	7.254	0

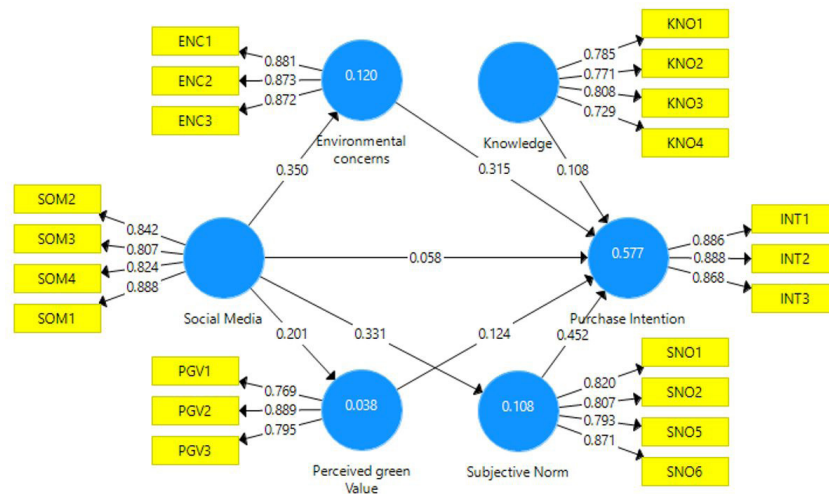
Source: survey, 2023

Table 5: Path coefficient and total indirect effect of the structural model.

	Hypotheses	Decision
H1	Green product knowledge has a positive impact on green food purchase intention	Accepted
H2	Environmental concerns have a positive impact on green food purchase intention.	Accepted
H3	Subjective norms are positively related to green food purchase intention	Accepted
H4	Perceived green value has a positive impact on green food purchase intention.	Accepted
H5	Social media has a positive impact on green food purchase intention.	Rejected
H6	Social media has a positive impact on perceived green value	Accepted
H7	Perceived green value mediates between Social media and green food purchase intention.	Accepted
H8	Social media has a positive impact on environmental concerns.	Accepted
H9	Environmental concerns mediate between Social media and green food purchase intention.	Accepted
H10	Social media has a positive impact on subject norms.	Accepted
H11	Subject norms mediate between Social media and green food purchase intention.	Accepted

Source: survey, 2023

Table 6. Decision for t-test Hypotheses.



Source: survey, 2023

Figure 2. Structural Model.

in this study were urban consumers, and a large number of them were middle and high-income earners. These consumers are likely to care more about the environment and social values. The result shows that subjective norms also significantly impact green food purchase intention and is consistent with the results of Ali et al. (2023) and Rathnayaka and Gunawardana (2021). Consumers in Vietnam are quite influenced by social relationships such as their families, friends, professionals, or others around them to purchase green food products. This is partly because of Vietnamese culture, consumers are often concerned with other people's opinions and consider their interests when making purchase decisions (Van Tran and Nguyen, 2021).

Most importantly, the findings in this study indicate a crucial role of social media in changing consumers' environmental concerns, subjective norms, and perceived green value over the consumption of green food and these results are consistent with the results of Kang and Kim (2017) and Elahi, Khalid and Zhang (2022). Furthermore, the finding of this study is that social media does not positively impact green food purchase intention. This appraisal stands in contrast to the results of de Lenne and Vandenbosch (2017) and Zorell (2022), which show the importance of social media in changing green purchase behavior. The finding of this study provides new insights into the relationship between social media and green food purchase intention in Vietnam. Vietnamese consumers seem quite less influenced by social media when purchasing green food. However, the result indicates that social media indirectly impacts green food purchase intention through

consumers' environmental concerns, subjective norms, and perceived green value. This shows the role of social media in changing consumer behavior in Vietnam.

Conclusion

Overall, this study provides insights into Hanoi consumers' perception on social media and other factors and how these factors influence their purchase intention. The results of structural equation analysis confirm the role of social media to green food consumption. The study aimed to investigate the mediating role of environmental concerns, subjective norms, and perceived green value from social media on green consumers' food purchase intention. The findings of this study contribute to understanding the determinants of consumer purchase intention in Hanoi / Vietnam and help policymakers and food enterprise managers use social media in their marketing strategies to encourage green food consumption in Vietnam. These results imply that in order to increase green food preferences among consumers, governments also should consider social media-based education programs to build an understanding of green food and sustainable consumption and emphasize the remarkable advantages of green products for both the environment and society. In addition, marketers should pay attention to providing complete information and advertisements about green food products on social media. These may help consumers to evaluate products' safety and their good effect on the environment and society to promote their consumption.

Furthermore, to increase the intention to buy green food products from individual consumers, businesses should focus on affecting the people around them. For instance, creating consumer groups and improving communication within the group, or leveraging social influence, such as utilizing celebrities, can be an effective approach to promote and provide advice on green product consumption.

The result also implies that government authorities should facilitate stronger media and improve social media quality to strengthen their influence on customers. At the same time, the government should issue regulations on information transparency and sanction manufacturers who falsely advertise their products on social media to protect the interests of consumers. Besides, businesses can use a combination of other communication channels instead of just focusing on social networks. For example, improving print and electronic media, and increasing in-store communication using brochures, fliers, signage, and staff consultation.

By extending the TPB, this study contributes novel evidence regarding the mediation effect of social media through environmental concerns, subjective norms, and perceived green value on green consumers' food purchase intention. This helps green marketers develop their marketing strategies through social media channels to target increasing green food consumption. Firstly, to influence consumers' environmental concerns and perceived green value, government agencies should make more effort to popularize the green concept on social media and convince consumers to change their consumption behavior toward green food products. Policymakers can use advertising to persuade consumers that they will greatly contribute to protecting the environment and improving

society when they consume more environmentally friendly food products. Food enterprises should also engage consumers through advertisements that emphasize the long-term benefits of green food products for the environment and society. Secondly, in order to impact consumers' subjective norms, the important strategy is using social media to review and share experiences and lessons from experts, and scientists who may give advice on the benefit of eco-friendly products. The results contribute to enhancing environmental awareness and social trust to engage Vietnamese consumers in positive activities that benefit the environment and society.

However, our study is not without limitations. As our dependent variable is intention to purchase and not real purchase decisions, we can only speculate about the reasons for this obvious gap. There is extensive literature on the intention-behavior-gap related to sustainable food purchases. Future research should specifically look at this aspect concerning green food purchases in Vietnam. Also, our sampling procedure as a convenience sample does not allow us to define any specific inference population. Our recruitment strategy might have led to systematic sample selection biases. It should be the objective of future studies to generate more representative samples. This research was conducted in Hanoi, Vietnam and it would be interesting for future research to include other areas.

Acknowledgments

Thank VNU University of Economics and Business, Hanoi for financing the Research Project number: BBQT.01.2023.

Corresponding author:

Dr. Pham Ngoc Huong Quynh

VNU University of Economics and Business, Vietnam National University

144 Xuan Thuy, Cau Giay, Hanoi, Vietnam

Phone: +84979104786, E-mail: quynhphamnh@vnu.edu.vn

References

- [1] Ali, M., Ullah, S., Ahmad, M. S., Cheok, M. Y. and Alenezi, H. (2023) "Assessing the impact of green consumption behavior and green purchase intention among millennials toward sustainable environment", *Environmental Science and Pollution Research*, Vol. 30, No. 9, pp. 23335-23347. E-ISSN 1614-7499. DOI 10.1007/s11356-022-23811-1.
- [2] Allen, M. W. and Spialek, M. L. (2017) "Young millennials, environmental orientation, food company sustainability, and green word-of-mouth recommendations", *Journal of Food Products Marketing*, Vol. 24, No. 4, pp. 1-27. ISSN 1045-4446. DOI 10.1080/10454446.2017.1415827.

- [3] Severo, E. A., Guimarães, J. C. F., Dellarmelin, M. L. and Ribeiro, R. P. (2019) "The Influence of Social Networks on Environmental Awareness and the Social Responsibility of Generations", *Brazilian Business Review*, Vol. 16, No. 5, pp. 500-518. E-ISSN 1807-734X. DOI 10.15728/bbr.2019.16.5.5.
- [4] Anh, N.-T.-P., Son, L.-K., Nguyen, T.-T., Nguyen-Thu, H. and Nguyen-Anh, T. (2022) "The Influences of Cultural Values on Consumers' Green Purchase Intention in Emerging Markets: An Evidence from South Korea and Vietnam", *Current Psychology*, Vol. 42. E-ISSN 1936-4733. DOI 10.1007/s12144-022-04064-0.
- [5] Barbarossa, C. and De Pelsmacker, P. (2016) "Positive and Negative Antecedents of Purchasing Eco-friendly Products: A Comparison Between Green and Non-green Consumers", *Journal of Business Ethics*, Vol. 134, No. 2, pp. 229-247. E-ISSN 1573-0697. DOI 10.1007/s10551-014-2425-z.
- [6] Boobalan, K., Nawaz, N., Harindranath, R. M. and Gajenderan, V. (2021) "Influence of Altruistic Motives on Organic Food Purchase: Theory of Planned Behavior", *Sustainability* (Switzerland), Vol. 13, No. 11. ISSN 2071-1050. DOI 10.3390/su13116023.
- [7] Bryant, C., Szejda, K., Parekh, N., Desphande, V. and Tse, B. (2019) "A Survey of Consumer Perceptions of Plant-Based and Clean Meat in the USA, India, and China", *Frontiers in Sustainable Food Systems*, Vol. 3, No. 11. ISSN 2571-581X. DOI 10.3389/fsufs.2019.00011.
- [8] Cheah, W. K. A. and Aigbogun, O. (2022) "Exploring attitude-behaviour inconsistencies in organic food consumption during the COVID-19 pandemic in the Klang Valley, Malaysia", *Cleaner and Responsible Consumption*, Vol. 7. ISSN 2666-7843. DOI 10.1016/j.clrc.2022.100077.
- [9] Chen, S. C. and Lin, C. P. (2019) "Understanding the effect of social media marketing activities: The mediation of social identification, perceived value, and satisfaction", *Technological Forecasting and Social Change*, Vol. 140, pp. 22-32. ISSN 0040-1625. DOI 10.1016/j.techfore.2018.11.025.
- [10] Cheung, M. F. Y. and Services, W. M. (2019) "An extended model of value-attitude-behavior to explain Chinese consumers' green purchase behavior", *Journal of Retailing and Consumer Services*, Vol. 50, pp. 145-153. ISSN 0969-6989. DOI 10.1016/j.jretconser.2019.04.006.
- [11] Chwialkowska, A. (2019) "How sustainability influencers drive green lifestyle adoption on social media: The process of green lifestyle adoption explained through the lenses of the minority influence model and social learning theory", *Management of Sustainable Development*, Vol. 11, No. 1, pp. 33-42. E-ISSN 2247-0220. ISSN 2066-9380. DOI 10.2478/msd-2019-0019.
- [12] de Koning, J. I. J. C., Ta, T. H., Crul, M. R. M., Wever, R. and Brezet, J. C. (2016) "GetGreen Vietnam: towards more sustainable behaviour among the urban middle class", *Journal of Cleaner Production*, Vol. 134, Part A., pp. 178-90. ISSN 0959-6526. DOI 10.1016/j.jclepro.2016.01.063.
- [13] de Lenne, O. and Vandenbosch, L. (2017) "Media and sustainable apparel buying intention", *Journal of Fashion Marketing and Management*, Vol. 21, No. 4, pp. 483-498. ISSN 1361-2026. DOI 10.1108/JFMM-11-2016-0101.
- [14] Dong, X., Jiang, B., Zeng, H. and Kassoh, F. S. (2022) "Impact of trust and knowledge in the food chain on motivation-behavior gap in green consumption", *Journal of Retailing and Consumer Services*, Vol. 66. ISSN 0969-6989. DOI 10.1016/j.jretconser.2022.102955.
- [15] Elahi, E., Khalid, Z. and Zhang, Z. (2022) "Understanding farmers' intention and willingness to install renewable energy technology: A solution to reduce the environmental emissions of agriculture", *Applied Energy*, Vol. 309. ISSN 0306-2619. DOI 10.1016/j.apenergy.2021.118459.
- [16] ElHaffar, G., Durif, F. and Dubé, L. (2020) "Towards closing the attitude-intention-behavior gap in green consumption: A narrative review of the literature and an overview of future research directions", *Journal of Cleaner Production*, Vol. 275. ISSN 0959-6526. DOI 10.1016/j.jclepro.2020.122556.
- [17] Fornell, C. and Larcker, D. F. (1981) "Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics", *Journal of Marketing Research*, Vol. 18, No. 3., pp. 382-388. ISSN 0022-2437. DOI 10.2307/3150980.

- [18] Ghali, Z. (2020) "Motives of Willingness to Buy Organic Food under the Moderating Role of Consumer Awareness", *Journal of Scientific Research and Reports*, Vol. 25, No. 6, pp. 1-11. ISSN 2320-0227. DOI 10.9734/jsrr/2019/v25i630200.
- [19] Golnaz, R. (2012) "Consumers' awareness and consumption intention towards green foods", *African Journal of Business Management*, Vol. 6, No. 12. ISSN 1993-8233. DOI 10.5897/AJBM11.1414.
- [20] Hair, J. F., Risher, J. J., Sarstedt, M. and Ringle, C. M. (2019) "When to use and how to report the results of PLS-SEM", *European Business Review*, Vol. 31, No. 1, pp. 2-24. ISSN 0955-534X. DOI 10.1108/EBR-11-2018-0203.
- [21] Idowu, S. O., Capaldi, N., Zu, L. and Gupta, A. D. (Eds.) (2013) "*Encyclopedia of Corporate Social Responsibility*", 2772 p. E-ISBN 978-3-642-28036-8, ISBN 978-3-642-28035-1. DOI 10.1007/978-3-642-28036-8.
- [22] Joo, Y., Seok, H. and Nam, Y. (2020) "The Moderating Effect of Social Media Use on Sustainable Rural Tourism: A Theory of Planned Behavior Model", *Sustainability*, Vol. 12, No. 10, p. 4095. ISSN 2071-1050. DOI 10.3390/su12104095.
- [23] Kang, J. Y. M. and Kim, J. (2017) "Online customer relationship marketing tactics through social media and perceived customer retention orientation of the green retailer", *Journal of Fashion Marketing and Management*, Vol. 21, No. 3, pp. 298-316. ISSN 1361-2026. DOI 10.1108/JFMM-08-2016-0071.
- [24] Kennedy, F. B. and Adhikari, A. M. S. S. (2022) "Antecedents Affecting Consumers' Green Purchase Intention Towards Green Products", *American Journal of Interdisciplinary Research and Innovation*, Vol. 1, No. 3, pp. 47-52. E-ISSN 2642-7478, ISSN 2642-7478. DOI 10.54536/ajiri.v1i3.1044.
- [25] Kumar, B., Manrai, A. K. and Manrai, L. A. (2017) "Purchasing behaviour for environmentally sustainable products: A conceptual framework and empirical study", *Journal of Retailing and Consumer Services*, Vol. 34, pp. 1-9. ISSN 0969-6989. DOI 10.1016/j.jretconser.2016.09.004.
- [26] Lam, T. K., Heales, J. and Hartley, N. (2020) "Consumer Trust in Food Safety Requires Information Transparency", *Australasian Journal of Information Systems*, Vol. 24. DOI 10.3127/ajis.v24i0.2219.
- [27] Lee, Y. K. (2017) "A Comparative Study of Green Purchase Intention between Korean and Chinese Consumers: The Moderating Role of Collectivism", *Sustainability*, Vol. 9, No. 10, p. 1930. ISSN 2071-1050. DOI 10.3127/ajis.v24i0.2219.
- [28] Mohd Suki, N. and Mohd Suki, N. (2015) "Consumption values and consumer environmental concern regarding green products", *International Journal of Sustainable Development and World Ecology*, Vol. 22, No. 3, pp. 1-10. E-ISSN 1350-4509, ISSN 1745-2627. DOI 10.1080/13504509.2015.1013074.
- [29] My, N. H. D., Rutsaert, P., Van Loo, E. J. and Verbeke, W. (2017) "Consumers' familiarity with and attitudes towards food quality certifications for rice and vegetables in Vietnam", *Food Control*, Vol. 82, pp. 74-82. ISSN 0956-7135. DOI 10.1016/j.foodcont.2017.06.011.
- [30] Nekmahmud, M., Naz, F., Ramkissoon, H. and Fekete-Farkas, M. (2022) "Transforming consumers' intention to purchase green products: Role of social media", *Technological Forecasting and Social Change*, Vol. 185, p. 122067. ISSN 0040-1625. DOI 10.1016/j.techfore.2022.122067.
- [31] Nguyen, H. V., Nguyen, N., Nguyen, B. K., Lobo, A. and Vu, P. A. (2019) "Organic Food Purchases in an Emerging Market: The Influence of Consumers' Personal Factors and Green Marketing Practices of Food Stores", *International Journal of Environmental Research and Public Health*, Vol. 16, No. 6, p. 1037. E-ISSN 1660-4601. DOI 10.3390/ijerph16061037.
- [32] Nguyen, T.-P. and Dekhili, S. (2019) "Sustainable development in Vietnam: An examination of consumers' perceptions of green products", *Business Strategy & Development*, Vol. 2, No. 2, pp. 127-136. ISSN 2572-3170. DOI 10.1002/bsd2.48.
- [33] Nuttavuthisit, K. and Thøgersen, J. (2017) "The Importance of Consumer Trust for the Emergence of a Market for Green Products: The Case of Organic Food", *Journal of Business Ethics*, Vol. 140, No. 2, pp. 323-337. ISSN 1573-0697. DOI 10.1007/s10551-015-2690-5.

- [34] Podoshen, J. S., Li, L. and Zhang, J. (2011) "Materialism and conspicuous consumption in China: a cross-cultural examination", *International Journal of Consumer Studies*, Vol. 35, No. 1, pp. 17-25. ISSN 1470-6431. DOI 10.1111/j.1470-6431.2010.00930.x.
- [35] Qi, X. and Ploeger, A. (2019) "Explaining consumers' intentions towards purchasing green food in Qingdao, China: The amendment and extension of the theory of planned behavior", *Appetite*, Vol. 133, pp. 414-422. ISSN 1095-8304. DOI 10.1016/j.appet.2018.12.004.
- [36] Quynh, P. N. H., My, D. T. T., Nguyen, T. T., Hoai, P. T. T. and Phuong, N. V. (2023) "The influence of cultural values on consumers' green purchase intention in South Korea", *Journal of the International Society for Southeast Asian Agricultural Sciences*, Vol 29, No. 1, pp. 75-89. ISSN 0859-3132.
- [37] Rathnayaka, R. M. P. D. and Gunawardana, T. S. L. W. (2021) "The Impact of Consumers' Attitudes on Green Purchase Intention", *Wayamba Journal of Management*, Vol. 12, No. 1, ISSN 2012-6182. DOI 10.1016/j.jbusres.2020.10.053.
- [38] Rezai, G., Teng, P. K., Mohamed, Z. and Shamsudin, M. N. (2012) "Consumers' awareness and consumption intention towards green foods", *African Journal of Business Management*, Vol. 6, No. 12, pp. 4496-4503. ISSN 1993-8233. DOI 10.5897/AJBM11.1414.
- [39] Rustam, A., Wang, Y. and Zameer, H. (2020) "Environmental awareness, firm sustainability exposure and green consumption behaviors", *Journal of Cleaner Production*, Vol. 268. p. 122016. ISSN 0959-6526. DOI 10.1016/j.jclepro.2020.122016.
- [40] Santhoshkumar, B. and Kousalyadevi, M. (2022) "Impact of premium price mediates the consumer awareness and green purchase intention about organic food in coimbatore", *International Journal of Creative Research Thoughts*, Vol.10, No. 1. ISSN 2320-2882.
- [41] Sarstedt, M., Ringle, C. M. and Hair, J. F. (2021) "Partial Least Squares Structural Equation Modeling", In *"Handbook of Market Research"*, pp. 1-47. ISBN 978-3-319-57411-0. DOI 10.1007/978-3-319-05542-8_15-2.
- [42] Ahmad, F. S., Rosli, N. T. and Quoquab, F. (2022) "Environmental quality awareness, green trust, green self-efficacy and environmental attitude in influencing green purchase behaviour", *International Journal of Ethics and Systems*, Vol. 38, No. 1, pp. 68-90. ISSN 2514-9369. DOI 10.1108/IJOES-05-2020-0072.
- [43] Suhartanto, D., Kartikasari, A., Arsawan, I. W. E., Suhaeni, T. and Anggraeni, T. (2022) "Driving youngsters to be green: The case of plant-based food consumption in Indonesia", *Journal of Cleaner Production*, Vol. 380, Part 2, p. 135061. ISSN 0959-6526. DOI 10.1016/j.jclepro.2022.135061.
- [44] Sun, Y. and Xing, J. (2022) "The Impact of Social Media Information Sharing on the Green Purchase Intention among Generation Z", *Sustainability* (Switzerland), Vol. 14, No. 11, p. 6879. ISSN 2071-1050. DOI 10.3390/su14116879.
- [45] Tlebere, T., Scholtz, B. and Calitz, A. P. (2016) "Using Social Media to Improve Environmental Awareness in Higher Education Institutions", In: *Information Technology in Environmental Engineering*, pp. 101-111. ISBN 978-3-319-25152-3. DOI 10.1007/978-3-319-25153-0_9.
- [46] Tsai, P. H., Lin, G. Y., Zheng, Y. L., Chen, Y. C., Chen, P. Z. and Su, Z. C. (2020) "Exploring the effect of Starbucks' green marketing on consumers' purchase decisions from consumers' perspective", *Journal of Retailing and Consumer Services*, Vol. 56, p. 102162. ISSN 0969-6989. DOI 10.1016/j.jretconser.2020.102162.
- [47] Van Boven, L., Kane, J., McGraw, A. P. and Dale, J. (2010) "Feeling Close: Emotional Intensity Reduces Perceived Psychological Distance", *SSRN Electronic Journal*, ISSN 1556-5068. DOI 10.2139/ssrn.1531661.
- [48] Van Tran, A. T. and Nguyen, N. T. (2021) "Organic food consumption among households in Hanoi: Importance of situational factors", *Sustainability* (Switzerland), Vol. 13, No. 22. ISSN 2071-1050. DOI 10.3390/su132212496.

- [49] Wang, J., Nguyen, N. and Bu, X. (2020) "Exploring the Roles of Green Food Consumption and Social Trust in the Relationship between Perceived Consumer Effectiveness and Psychological Wellbeing", *International Journal of Environmental Research and Public Health*, Vol. 17, p. 13, p. 4676. ISSN 1660-4601. DOI 10.3390/ijerph17134676.
- [50] Wang, Y. F. and Wang, C. J. (2016) "Do psychological factors affect green food and beverage behaviour? An application of the theory of planned behaviour", *British Food Journal*, Vol. 118, No. 9, pp. 2171-2199. ISSN 0007-070X. DOI 10.1108/BFJ-12-2015-0469.
- [51] Witek, L. and Kuźniar, W. (2021) "Green purchase behavior: The effectiveness of sociodemographic variables for explaining green purchases in emerging market", *Sustainability* (Switzerland), Vol. 13, No. 1, pp. 1-18, p. 209. ISSN 2071-1050. DOI 10.3390/su13010209.
- [52] Xie, S. and Rasool, G. (2023) "Impact of Social Media on Young Generation's Green Consumption Behavior through Subjective Norms and Perceived Green Value", *Sustainability*, Vol. 15, p. 3739. ISSN 2071-1050. DOI 10.3390/su15043739.
- [53] Yang, M. X., Tang, X., Cheung, M. L. and Zhang, Y. (2021) "An institutional perspective on consumers' environmental awareness and pro-environmental behavioral intention: Evidence from 39 countries", *Business Strategy and the Environment*, Vol. 30, No. 1, pp. 566-575. ISSN 0964-4733.
- [54] Zafar, A.U., Shen, J., Shahzad, M. and Islam, T. (2021) "Relation of impulsive urges and sustainable purchase decisions in the personalized environment of social media", *Sustainable Production and Consumption*, Vol. 25, pp. 591-603. E-ISSN 2352-5509. DOI 10.1016/j.spc.2020.11.020.
- [55] Zameer, H. and Yasmeen, H. (2022) "Green innovation and environmental awareness driven green purchase intentions", *Marketing Intelligence and Planning*, Vol. 40, No. 6, pp. 624-638. ISSN 0263-4503. DOI 10.1108/MIP-12-2021-0457.
- [56] Zhuang, W., Luo, X. and Riaz, M. U. (2021) "On the Factors Influencing Green Purchase Intention: A Meta-Analysis Approach", *Frontiers in Psychology*, Vol. 12. E-ISSN 1664-1078. DOI 10.3389/fpsyg.2021.644020.
- [57] Zinoubi, Z. G. (2020) "Motives of Green Consumption: The Moderating Roles of Perceived Consumer Effectiveness and Price Sensitivity", *Archives of Business Research*, Vol. 8, No. 1, pp. 261-677. ISSN 2054-7404. DOI 10.14738/abr.81.7429.
- [58] Zorell, C. V. (2022) "Central Persons in Sustainable (Food) Consumption", *International Journal of Environmental Research and Public Health*, Vol. 19, No. 5. p. 3139. E-ISSN 1660-4601. DOI 10.3390/ijerph19053139.