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Factors Affecting the Willingness to Pay for Organic Food Among Generation Z Students in Hanoi, Vietnam: The Mediating Role of Awareness*

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Abstract

Despite the ongoing low demand for organic food in Vietnam, consumption of organic products is gradually increasing. There is a positive correlation between awareness of organic food benefits and the willingness to pay among Vietnamese youth. The growing interest in organic products among Generation Z students contributes to more sustainable consumer behavior, as well as to the promotion of overall health and environmental sustainability in Vietnam. The study aims to analyze the factors affecting the willingness to pay for organic food among Generation Z students in Hanoi, with a particular focus on the mediating role of awareness. The PLS-SEM technique was used to analyze data collected through direct interviews with 534 students from five universities in Hanoi using a structured questionnaire. The research results indicate that awareness of organic food has the greatest influence on willingness to pay for organic food, followed by knowledge of organic products, and health concerns. The findings also reveal that the direct relationship between environmental concerns and willingness to pay for organic food is not statistically significant. Based on these insights, the authors propose several recommendations for policymakers and businesses promoting

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organic food consumption in the Vietnamese market. This study contributes to the existing literature by highlighting the mediating role of awareness in the relationship between various factors and willingness to pay for organic food. The relevance and value of this research are underscored by its potential impact on promoting organic food consumption among Generation Z in emerging markets.

Keywords: *awareness, consumer behavior, health consciousness, organic food, willingness to pay*

JEL classification: *D12, I12, M31, Q13*

1. Introduction

The increasing awareness of environmental issues and the growing consumer interest in organic food, along with a willigness to invest in organic attributes, have prompted corporations to concentrate on organic marketing, driving significant transformations and advancements (Lavuri, 2022; Parashar et al., 2023). The rise of organic product development is essential to an emerging contemporary marketing paradigm, in which consumers prioritize comprehending the benefits of organic products before making purchasing decisions (Nguyen & Dekhili, 2019; Thøgersen et al., 2016).

Generation Z is the demographic cohort succeeding Millennials and preceding Generation Alpha. Individuals belonging to Generation Z were born in the mid-to-late 1990s to early 2010s, more specifically, from 1997 to 2012. The characteristics associated with this generation shape their product preferences and purchasing behaviors. According to Jílková and Králová (2020), Generation Z allocates a larger share of their spending to non-alcoholic food and beverages compared to Generations X and Y, with these items ranking third among the most frequently purchased products. Moreover, Gen Z individuals who actively engage in eco-friendly practices are more inclined to consume organic food (Lockie et al., 2002). Additionally, Lavuri et al. (2021) argue that factors such as knowledge, environmental consciousness, attitudes, and purchase intentions exert varying degrees of influence on the green buying behavior of Generation Z compared with Generation Y. In Vietnam, the Gen Z population reached around 15 million in 2020, accounting for approximately 19% of the working-age population (Nguyen & Nguyen, 2020), and is projected to approach nearly one-third by 2025 (Nguyen & Vo, 2023). Students represent a distinct subgroup within Generation Z and are characterized by higher levels of education and, consequently, potentially greater knowledge and awareness than other members of their cohort.

Although actual demand remains relatively low, the potential for organic products in Vietnam is increasing. (Hoang et al., 2022; Lavuri, 2022). Previous research has emphasized the importance of comprehending the underlying motivations for purchasing organic products among Vietnamese consumers (Ngan & Khoi, 2022;

Nguyen et al., 2019; Nguyen & Vo, 2023). While numerous studies explore factors influencing willingness to pay (WTP) for organic food, including health concerns, knowledge, and environmental concerns, there is a dearth of research focusing on the mediating role of awareness, particularly among Generation Z students in an emerging market context like Vietnam (Firoozzare et al., 2024; Nguyen et al., 2025; Pham et al., 2023). Understanding how initial concerns translate into actual WTP through awareness is essential for bridging the gap between positive attitudes and actual purchase behavior.

Accordingly, the primary objective of this study is to identify the key factors that influence WTP for organic food among Generation Z students in Hanoi, with a specific focus on the mediating role of awareness of organic food. Based on these insights, the study aims to provide recommendations for policymakers and businesses seeking to strengthen organic food consumption strategies.

This research paper is structured as follows: the first section comprises an introduction into the topic of the paper. The second section presents the literature review and hypothesis development. The third section describes the research methodology. The fourth section reports the findings, which is followed by the discussion in the fifth section. The final, sixth section concludes with policy implications.

2. Literature review

This section reviews the existing literature relevant to the study and outlines the theoretical foundations that underpin the research. It synthesizes key concepts and prior findings related to the topic and establishes the framework guiding the analysis in this study.

2.1. Theoretical framework

The Stimulus-Organism-Response (S-O-R) paradigm provides the theoretical foundation for understanding the decision-making process of Generation Z consumers in this study. The S-O-R framework is a core component of the Theory of Consumer Behavior. It proposes that environmental stimuli (S) affect the internal state of the organism (O), which subsequently shapes behavioral responses (R) (Talwar et al., 2021). In the context of this study, health concerns, environmental concerns, and knowledge act as external and internal stimuli (S) that activate consumers' cognitive processing. Awareness of organic food represents the organism (O) – the internal cognitive evaluation and recognition of value. Finally, WTP represents the behavioral response (R). This theoretical lens provides the necessary justification for the mediating role of awareness: stimuli alone are

often insufficient to trigger a purchase decision (WTP) unless they are processed through consumers' awareness, transforming latent concerns into active purchase motivations.

2.2. Willingness to pay for organic food

WTP is defined as the maximum price a consumer is prepared to pay for a given quantity of goods or services (Katt & Meixner, 2020). Unlike conventional products, organic food often carries a price premium due to its specific production standards. However, WTP is not uniform; it varies significantly depending on the country, product category, and supply chain characteristics. In developed markets, WTP is often driven by established lifestyle preferences and strong consumer trust in certification labels (Gundala & Singh, 2021). Conversely, in emerging markets such as Vietnam, consumers are highly price-sensitive, and their WTP is often constrained by skepticism regarding the authenticity of organic claims (Nguyen & Dekhili, 2019). In addition, WTP differs depending on product category: consumers are generally willing to pay more for organic fresh produce (vegetables, milk) due to direct health implications compared to processed dry goods. Therefore, understanding WTP in the Vietnamese context requires examining localized drivers, including specific health concerns and the level of product awareness among young consumers (Minh Ngo et al., 2013).

2.3. Factors influencing willingness to pay for organic food

This section discusses the key factors that influence consumers' willingness to pay for organic food. It focuses on individual-level determinants identified in prior studies, with particular attention to their roles in shaping purchasing decisions in the context of organic food consumption.

2.3.1. Awareness of organic food

Awareness of organic food refers to consumers' recognition and understanding of the distinct attributes (e.g. safety, nutritional value, labels) that differentiate organic products from conventional ones (Yang et al., 2014). Within the S-O-R framework, awareness acts as a cognitive filter. Previous studies in emerging markets such as Pakistan and Turkey have demonstrated a positive correlation between consumer perception/awareness and their WTP (Asif et al., 2018). When consumers possess a high level of awareness, they perceive the value of the product to outweigh the cost, thereby increasing their WTP. Based on this theoretical reasoning, the following hypothesis is developed:

> H1: *Awareness of organic food positively influences willingness to pay for organic food among Generation Z students in Hanoi.*

2.3.2. Environmental concerns

Environmental concern reflects consumers' awareness of and emotional detachment from environmental degradation, food safety, and sustainable consumption (Ghvanidze et al., 2017; Stern, 2002). Consumers with higher levels of environmental concern are more likely to seek information about organic food, understand its benefits, and recognize its role in promoting health and environmental sustainability, thereby enhancing their overall awareness of organic food products (Barrera-Verdugo & Durán-Sandoval, 2024). While some studies report a direct link between environmental concern and WTP (Bhattarai, 2019; Liang et al., 2024), others indicate that this relationship is complex. Consumers may care about the environment, but may not be willing to pay a premium unless they explicitly understand how a specific product contributes to sustainability (Ramalingam & Anuradha, 2021; Nguyen et al., 2025). Based on this reasoning, the following hypotheses are developed:

H2: *Environmental concern positively influences awareness of organic food among Generation Z students in Hanoi.*

H3: *Environmental concern positively influences willingness to pay for organic food among Generation Z students in Hanoi.*

2.3.3. Health consciousness

Health consciousness is widely regarded as one of the primary drivers of organic food consumption (Parashar et al., 2023). Consumers with higher levels of health consciousness tend to pay closer attention to food quality, nutritional value, and potential health risks associated with conventional food products (Parashar et al., 2023). As a result, they are more motivated to seek information about organic food, understand its health-related benefits, and distinguish it from non-organic alternatives, thereby increasing their overall awareness of organic food products. Moreover, consumers often view organic food as an investment in personal well-being (Ramalingam & Anuradha, 2021). According to the Theory of Consumer Behavior, individuals seek to maximize utility; thus, those with higher levels of health consciousness perceive greater utility in organic food, which justifies paying a higher price (Effendi et al., 2015; Jahangir et al., 2009). Based on these insights, the following hypotheses are proposed:

H4: *Health consciousness positively influences awareness of organic food among Generation Z students in Hanoi.*

H5: *Health consciousness positively influences willingness to pay for organic food among Generation Z students in Hanoi.*

2.3.4. Knowledge of organic food

Knowledge refers to the information consumers possess regarding organic farming processes and standards. Consumers who possess greater knowledge about organic food are more capable of evaluating its quality, safety, and environmental advantages (Nautiyal & Lal, 2025). This understanding reduces uncertainty and perceived risk related to higher prices. As a result, informed consumers are more likely to appreciate the added value of organic food and demonstrate a stronger willingness to pay a price premium compared to those with limited knowledge. (Mahmud, 2024; Singh & Verma, 2017). Aryal et al. (2009) argue that informed consumers are more likely to appreciate the complexity of organic farming, making them more accepting of higher prices. In the context of Generation Z students, who have access to higher education, this knowledge acts as a critical stimulus that shapes purchasing behavior (Gundala & Singh, 2021). This disparity in knowledge and consumption patterns underscores the need for targeted educational and marketing strategies to promote organic food in regions with lower levels of consumer awareness. Based on this reasoning, the following hypotheses are developed:

> H6: *Knowledge of organic food positively influences awareness of organic food among Generation Z students in Hanoi.*
>
> H7: *Knowledge of organic food positively influences willingness to pay for organic food among Generation Z students in Hanoi.*

2.4. Mediating role of awareness

A critical gap in the existing literature concerns the explanation of how consumer concerns translate into action. Using the S-O-R model, we argue that awareness plays a mediating role.

Firstly, health consciousness (S) motivates consumers to seek information, thereby increasing their awareness (O). This heightened awareness enables them to verify whether a product meets their health expectations, ultimately increasing their WTP (R) (Talwar et al., 2021; Rana & Paul, 2017).

Secondly, product knowledge and awareness of their benefits play a role in determining consumers' WTP for these products (Mahmud, 2024; Singh & Verma, 2017). Knowledge serves as a foundation, but awareness is the active application of that knowledge in a specific purchasing context. Knowledgeable consumers are more likely to be aware of specific product attributes, which justifies paying a premium (Effendi et al., 2015; Mahmud, 2024; Singh & Verma, 2017).

Thirdly, environmental concern is often abstract. For this concern to influence WTP, it must be translated into concrete understanding through awareness. Consumers

must first be aware that organic farming is eco-friendly before their environmental values can shape their WTP (Sesini et al., 2023; Newton et al., 2015; Ramalingam & Anuradha, 2021). Without awareness, environmental concern remains a latent attitude without behavioral consequences (Sesini et al., 2023). Based on this reasoning, the following hypotheses are proposed:

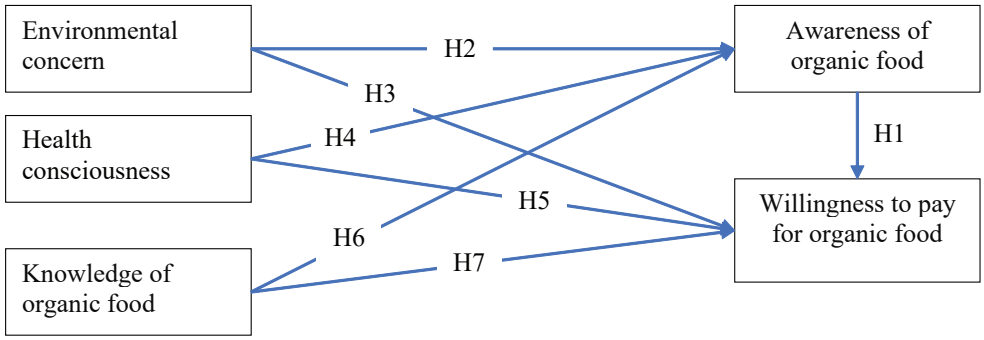
H8: *Awareness of organic food positively mediates the relationship between health concerns and willingness to pay.*

H9: *Awareness of organic food positively mediates the relationship between knowledge and willingness to pay.*

H10: *Awareness of organic food positively mediates the relationship between environmental concerns and willingness to pay.*

Finally, the research model is proposed as follows.

Figure 1: The proposed conceptual model



Source: Authors' illustration

3. Methodology

This section presents the methodology adopted in this study. It describes the research design and the procedures used to collect and analyze data, with a particular focus on the measurement instruments employed to ensure the reliability and validity of the research findings.

3.1. Measurement instrument

To ensure content validity of the research instrument, all measurement items for the constructs were adapted from established scales in previous studies and subsequently modified to fit the context of organic food consumption in Vietnam.

Each item was assessed using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Before administering the official survey, a rigorous translation and validation procedure was implemented. The original English items were translated into Vietnamese and reviewed by a panel of six lecturers from the Vietnam National University to ensure terminological accuracy and cultural appropriateness. A pre-test with five students was then conducted to verify the clarity, readability and overall comprehensibility of the questionnaire. The final measurement scales and their corresponding sources are presented in detail in Table 1.

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

Item	Explanation	Reference
Willingness to pay		
WTP 1	I am considering to pay for organic food.	Aryal et al., 2009; Krystallis & Chryssohoidis, 2005; Jahangir et al., 2009
WTP 2	I intend to pay for organic food.	
WTP 3	There is a strong probability that I will pay more for organic food.	
Awareness of organic food		
AWE 1	I can recognize organic food.	Rana & Paul, 2017; Kapuge, 2016; Sesini et al., 2023
AWE 2	I comprehend the concept of organic food.	
AWE 3	I am acquainted with the term "*organic food*".	
Health consciousness		
HEC 1	Organic food consumption contributes to health benefits.	Magnusson et al., 2003; Gan et al., 2014; Ghvanidze et al., 2017
HEC 2	I carefully select food to ensure good health.	
HEC 3	I perceive myself as a health-conscious consumer.	
HEC 4	I frequently think about health-related issues.	
Knowledge of organic food		
KNO 1	I can distinguish between organic food and non-organic food.	Aryal et al., 2009; Singh & Verma, 2017
KNO 2	I am knowledgeable about the production process of organic food.	
KNO 3	I understand that organic food is safer to consume.	
Environmental concerns		
ENC 1	The environmental balance is delicate and can be easily disrupted.	Magnusson et al., 2003; Ramalingam & Anuradha, 2021; Asif et al., 2018
ENC 2	Humans are severely abusing the environment.	
ENC 3	Humans must maintain equilibrium with the environment to ensure survival.	
ENC 4	Human intervention in the environment often leads to serious consequences.	

Source: Authors' constructions

3.2. Sampling design and data collection

To ensure sample representativeness while maintaining logistical feasibility, this study employed a multi-stage random sampling technique rather than simple random sampling.

Stage 1 (Cluster Selection): From a list of 21 major universities in Hanoi, five universities were randomly selected to serve as primary sampling units (clusters) using the randomization tool on random.org. These selected universities were: Vietnam National University of Agriculture, Banking Academy, Posts and Telecommunications Institute of Technology, Electric Power University, and National Economics University.

Stage 2 (Participant Selection): Within each selected university, the research team collaborated with administrative offices to access student lists. Based on these lists, classes and individual students were randomly selected. Data were then collected through direct, face-to-face distribution of structured questionnaires to students, where the research team met participants in person and administered the survey.

Data collection was conducted from December 2023 to March 2024 via a face-to-face questionnaire approach. This direct interaction ensured a high response rate and data quality. Ultimately, a total of 534 valid questionnaires were collected and used for the final analysis.

3.3. Data analysis method

The collected data were first processed using Microsoft Excel 2013 and subsequently analyzed using SmartPLS 3.5 software. The study employed Partial Least Squares Structural Equation Modeling (PLS-SEM), a method suitable for exploratory research and complex models with non-normal data distributions. Following the two-step procedure recommended by Hair et al. (2019), the analysis proceeded as follows. Firstly, the measurement model was assessed. The reliability and validity of the constructs were examined using outer loadings, Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). Discriminant validity was assessed using the Fornell-Larcker criterion. Secondly, the structural model was assessed. The hypothesized relationships and the mediating role of awareness were tested using the bootstrapping method with 5000 subsamples to determine the significance of the path coefficients.

Data collection took place from December 2023 to March 2024 through a structured questionnaire. A total of 534 valid responses were obtained and included in the final analysis. The sample size is described in Table 2.

Table 2: Sample collected in different universities

No.	University	Frequency (individuals)	Percentage (%)
1	Electric Power University	93	17.41
2	National Economics University, Hanoi	110	20.60
3	Vietnam National University of Agriculture	118	22.10
4	Banking Academy	98	18.35
5	Posts and Telecommunications Institute of Technology	115	21.54
Total		534	100.00

Source: Authors' calculations

4. Results

This section presents the empirical findings of the study. It begins with a description of the respondents' demographic and general profiles, followed by the key results derived from the data analysis.

4.1. Profiles of the respondents

The demographic profiles of the 534 respondents indicate a balanced distribution across gender, income levels, and fields of study, as presented in Table 3.

Table 3: The demographic profiles of the respondents

Criterion		Frequency (people)	Percentage (%)
Gender	Female	268	50.19
	Male	266	49.81
Income (million VND/ month, including family remittances and extra income)	Below 5	195	36.52
	From 5 to 10	210	39.33
	Above 10	129	24.16
Field of study	Social Sciences and Humanities	132	24.72
	Technology and Engineering	124	23.22
	Economics and Business Administration	162	30.34
	Other, such as Education, Arts, Foreign Languages...	116	21.72

Criterion		Frequency (people)	Percentage (%)
Student	Year 1	125	23.41
	Year 2	141	26.40
	Year 3	129	24.16
	Year 4 and above	139	26.03
Total		534	100.00

Note: 1 USD = 24,470 VND according to Vietcombank on 8th March 2024.
Source: Authors' calculations

Regarding the descriptive statistics of the measurement items, Table 4 shows that the mean values range from 3.225 to 4.395, with standard deviations between 0.702 and 0.959, reflecting consistent responses. Importantly, the skewness and kurtosis values fall within the recommended range of -2 to +2, confirming that the data distribution is sufficiently normal for PLS-SEM analysis without significant outliers.

Table 4: Descriptive statistics for variables

No.	Items	Explanation	Mean	Median	Standard deviation	Excess kurtosis	Skewness	Cramér-von Mises p value
1	AWE1	I can recognize organic food.	4.049	4	0.853	0.081	-0.619	0
2	AWE2	I comprehend the concept of organic food.	3.875	4	0.915	-0.208	-0.456	0
3	AWE3	I am acquainted with the term "*organic food*".	4.395	5	0.729	1.587	-1.175	0
4	KNO1	I can distinguish between organic food and non-organic food.	3.395	3	0.95	-0.005	-0.243	0
5	KNO2	I am knowledgeable about the production process of organic food.	3.225	3	0.959	-0.485	0.036	0
6	KNO3	I understand that organic food is safer to consume.	3.633	4	0.863	-0.095	-0.214	0

No.	Items	Explanation	Mean	Median	Standard deviation	Excess kurtosis	Skewness	Cramér-von Mises p value
7	WTP1	I am considering to pay for organic food.	4.058	4	0.751	1.052	-0.761	0
8	WTP2	I intend to pay for organic food.	4.037	4	0.822	0.374	-0.677	0
9	WTP3	There is a strong probability that I will pay more for organic food.	3.936	4	0.834	-0.011	-0.481	0
10	HEC1	Organic food Consumption contributes to health benefits.	3.908	4	0.801	0.702	-0.601	0
11	HEC2	I carefully select food to ensure good health.	3.856	4	0.883	0.14	-0.501	0
12	HEC3	I perceive myself as a health-conscious consumer.	3.918	4	0.889	0.603	-0.799	0
13	HEC4	I frequently think about health-related issues.	3.757	4	0.912	0.446	-0.568	0
14	ENC1	The environmental balance is delicate and can be easily disrupted.	4.296	4	0.702	1.602	-0.909	0
15	ENC2	Humans are severely abusing the environment.	4.169	4	0.794	1.198	-0.895	0
16	ENC3	Humans must maintain equilibrium with the environment to ensure survival.	3.856	4	0.889	0.449	-0.628	0
17	ENC4	Human intervention in the environment often leads to serious consequences.	4.066	4	0.792	0.958	-0.776	0

Source: Authors' calculations

4.2. Assessment of the measurement model

The measurement model was evaluated based on internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2019). First, indicator reliability was assessed using outer loadings. As shown in Table 5, items AWE3 and HEC1 were removed because their outer loadings fell below the recommended threshold of 0.70. All remaining items demonstrated loadings above 0.708. Second, internal consistency reliability was confirmed as all Cronbach's alpha and Composite Reliability (CR) values exceeded the 0.70 threshold. Third, convergent validity was established, with Average Variance Extracted (AVE) values surpassing 0.50 for all constructs, ranging from 0.625 to 0.784, which can be seen in Table 5.

Table 5: Assessment of the measurement model

Items	Outer loading	Cronbach's alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Awareness of organic food		0.726	0.879	0.784
AWE1	0.901			
AWE2	0.870			
Environmental concerns		0.801	0.870	0.625
ENC1	0.762			
ENC2	0.813			
ENC3	0.810			
ENC4	0.778			
Health consciousness		0.778	0.872	0.694
HEC2	0.838			
HEC3	0.793			
HEC4	0.866			
Knowledge of organic food		0.724	0.845	0.646
KNO1	0.807			
KNO2	0.853			
KNO3	0.748			
Willingness to pay		0.858	0.915	0.782
WTP1	0.800			
WTP2	0.929			
WTP3	0.918			

Source: Authors' calculations

Discriminant validity was assessed using the Fornell-Larcker criterion, as can be seen in Table 6. The results show that the square root of the AVE for each construct (diagonal values) exceeds its highest correlation with any other construct in the model. This confirms that the constructs are empirically distinct (Hair et al., 2019).

Table 6: Discriminant validity test results

Items	Knowledge of organic food	Awareness of organic food	Environmental concerns	Health consciousness	Willingness to pay
Knowledge of organic food	0.804				
Awareness of organic food	0.433	0.885			
Environmental concerns	0.452	0.459	0.791		
Health consciousness	0.440	0.497	0.450	0.833	
Willingness to pay	0.519	0.533	0.372	0.444	0.884

Source: Authors' calculations

The results of the hypothesis testing are presented in Table 7, and the corresponding path diagram illustrating both direct and indirect effects among the constructs is presented in Figure 2. The findings highlight the significant mediating role of awareness of organic food in shaping consumers' WTP. Although the direct effect of environmental concerns on WTP is not significant ($\beta = 0.023$, $p = 0.650$), its indirect effect through awareness is significant ($\beta = 0.075$, $p < 0.001$), indicating that heightened awareness can effectively translate environmental concerns into a stronger willingness to pay. Similarly, health consciousness and knowledge of organic food exert both direct and indirect effects on WTP. The significant indirect effects through awareness ($\beta = 0.098$, $p < 0.001$ and $\beta = 0.061$, $p = 0.005$, respectively) further emphasize the importance of consumer awareness as a bridge between these factors and payment behavior. These results suggest that awareness serves as a key mechanism that amplifies the impact of consumers' environmental and health motivations, as well as their knowledge, on their willingness to pay for organic products.

Table 7: Path coefficient and total indirect effect of the structural model

Path Coefficient	Original sample (Beta)	Sample mean (M)	Standard deviation (STDEV)	t-statistics (O/STDEV)	p-values
Direct effects					
Awareness of organic food → Willingness to pay	0.319	0.318	0.057	5.613	0.000
Environmental concerns → Awareness of organic food	0.234	0.238	0.051	4.567	0.000
Environmental concerns → Willingness to pay	0.023	0.025	0.051	0.454	0.650
Health consciousness → Awareness of organic food	0.307	0.306	0.043	7.135	0.000
Health consciousness → Willingness to pay	0.139	0.141	0.050	2.750	0.006
Knowledge of organic food → Awareness of organic food	0.192	0.190	0.053	3.637	0.000
Knowledge of organic food → Willingness to pay	0.310	0.309	0.058	5.331	0.000
Indirect effects					
Environmental concerns → Awareness of organic food → Willingness to pay	0.075	0.075	0.020	3.827	0.000
Health consciousness → Awareness of organic food → Willingness to pay	0.098	0.097	0.021	4.691	0.000
Knowledge of organic food → Awareness of organic food → Willingness to pay	0.061	0.061	0.022	2.843	0.005

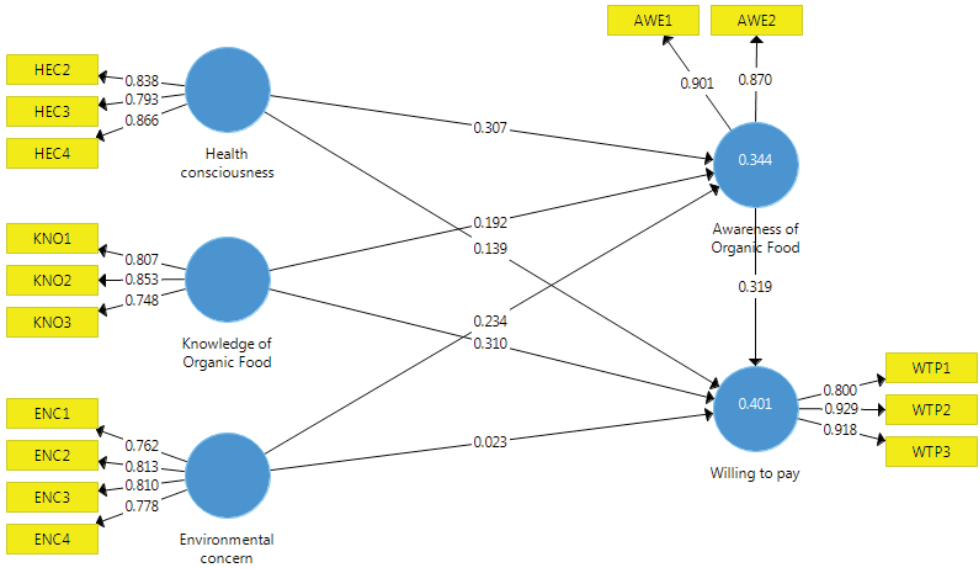
Source: Authors' calculations

4.3. Assessment of the structural model

The structural model was assessed to test the hypothesized relationships. The model's explanatory power is reflected in the R^2 values (Figure 2): it accounts for 34.4% of the variance in awareness of organic food (R^2 =0.344) and 40.1% of the variance in WTP (R^2=0.401), indicating moderate predictive accuracy.

Hypothesis testing (direct effects): The bootstrapping results (5000 subsamples) presented in Table 7 indicate that awareness (β=0.319, p<0.001), knowledge (β=0.310, p<0.001), and health consciousness (β=0.139, p=0.006) exert significant positive direct effects on WTP. Thus, hypotheses H1, H2, and H3 are supported. In contrast, environmental concerns do not have a significant direct impact on WTP (β=0.023, p=0.650), leading to the rejection of the hypothesis H4.

Figure 2: Structural model



Source: Authors' illustration

Mediation analysis (indirect effects): The study specifically examines the mediating role of awareness. The results confirm significant indirect effects:

- Health consciousness → Awareness → WTP (β=0.098, p<0.001).
- Knowledge → Awareness → WTP (β=0.061, p=0.005).
- Environmental concerns → Awareness → WTP (β=0.075, p<0.001).

These findings support hypotheses H5, H6, and H7. Notably, although environmental concerns have no direct effect on WTP, it exerts a significant positive indirect effect through awareness, highlighting a full mediating role of awareness in this specific relationship.

5. Discussion

The primary objective of this study was to decode the mechanism driving the WTP for organic food among Generation Z students in Hanoi. Interpreted through the lens of the S-O-R framework, the findings confirm that awareness of organic food functions as the critical *Organism* that processes external *Stimuli* (health, knowledge, environmental concerns) to generate the behavioral *Response* (WTP).

The empirical results identify awareness of organic food as the most influential determinant of WTP. This aligns with the findings of Yang et al. (2014) and Asif et al.

(2018), who argue that in emerging markets, consumer confidence depends heavily on their ability to recognize and comprehend product attributes. For Generation Z, an information-rich cohort, mere exposure to organic products is insufficient. They require a deeper, internalized awareness of certification standards, labeling cues, and specific benefits to justify the price premium. This supports the hypothesis H1 and reinforces the S-O-R premise: without the cognitive processing represented by the *Organism* (awareness), the purchase response is unlikely to occur.

One of the most intriguing findings of this study is the insignificance of the direct relationship between environmental concerns and WTP (H4 not supported), contrasted with a significant indirect effect through awareness (H7 supported). This pattern reflects a common gap in green consumerism in developing nations: students may possess high environmental concerns (as shown in the high descriptive mean), but this abstract concern does not automatically translate into financial commitment. This contradicts simpler models described by Bhattarai (2019), but resonates with the complex decision-making processes explained by Ramalingam and Anuradha (2021). The results suggest that environmental concerns influence WTP only when activated through specific product awareness. In other words, Gen Z consumers need to be aware of how a particular organic product benefits the environment before they are willing to pay for it. Awareness thus acts as a bridge that converts abstract environmental values into concrete purchasing actions.

Consistent with the Theory of Consumer Behavior, both knowledge of organic food and health consciousness exert strong positive effects on WTP, directly and indirectly. The substantial impact of knowledge corroborates the findings of Singh and Verma (2017), suggesting that as students gain more factual information about organic farming processes, their skepticism decreases, and their valuation of the product increases. Similarly, the results reaffirm that egoistic motives (personal health) often outweigh altruistic motives (environment) in driving WTP. As noted by Parashar et al. (2023), health is perceived as a direct personal investment. However, this study adds an important nuance: even health-conscious students rely on awareness to verify that an organic product genuinely delivers the promised health benefits, which supports the hypothesis H5.

In summary, the findings provide empirical evidence that for Vietnamese Gen Z, awareness is the gatekeeper. Knowledge and concerns provide the fuel, but awareness is the engine that drives the WTP.

6. Conclusions, implications, and research limitations

This section summarizes the main findings of the study and presents the conclusions drawn from the analysis. It also discusses the theoretical and practical implications of the results, as well as the limitations of the research and suggestions for future studies.

6.1. Conclusion

This study set out to examine the factors influencing the WTP for organic food among Generation Z students in Hanoi through the S-O-R framework. Analysis of data from 534 students using PLS-SEM yields two central conclusions. First, awareness of organic food emerges as the most powerful determinant of WTP, exerting the strongest impact both directly and as a mediator. This underscores that for young consumers in an emerging market, the cognitive process of understanding product attributes is a prerequisite for monetary commitment. Second, the study reveals a critical nuance in green consumerism: environmental concerns alone are insufficient to drive WTP. While environmental concerns do not directly trigger WTP, they significantly drive WTP when mediated through awareness. This indicates that Generation Z's broad concern for environmental issues only translates into purchasing behavior when they are specifically aware of how organic products contribute to environmental sustainability. By validating the full mediating role of awareness, this research fills a significant gap in the literature regarding consumer behavior in transition economies like Vietnam.

6.2. Practical implications

Drawing from the research findings, several practical implications are proposed, emphasizing the pivotal role of awareness in shaping consumer behavior towards organic food.

The first implication is for policymakers, given that health consciousness and knowledge are strong predictors of WTP. Public health initiatives should therefore extend beyond general encouragement and instead incorporate educational programs in universities that explicitly connect organic food consumption to long-term health benefits and (national) food safety standards. Policymakers should also consider establishing a transparent and easily accessible national database of certified organic producers to enhance the knowledge aspect and reduce skepticism among young consumers.

The second implication concerns business managers and marketers. The finding that environmental concerns have no direct impact on WTP serves as a wake-up call for marketing strategies. Simply labeling a product as eco-friendly is ineffective for this demographic. Instead, businesses and marketing strategies should focus on tangible awareness. Marketing messages should bridge the gap between abstract environmental concerns and concrete product benefits. Rather than relying on vague slogans, brands should use storytelling or QR codes to demonstrate exactly how their organic farming practices protect the soil or reduce emissions. This builds the awareness necessary to trigger the indirect path to WTP. Since awareness is the strongest driver of WTP, businesses must also justify the price premium by highlighting certification labels and nutritional facts on packaging. This approach

aligns with Gen Z's high information-seeking tendencies and helps transform them from passive observers into active buyers.

6.3. Research limitations and future directions

While this study offers valuable insights, several limitations exist. The first limitation concerns the sample, which was restricted to university students in Hanoi. While students represent an important segment of Generation Z, their purchasing power differs from that of working young adults. Future research should therefore broaden the demographic scope to include older Gen Z individuals with independent incomes and extend data collection to other major cities, such as Ho Chi Minh City, or rural areas to enhance the generalizability of the findings. The seecond limitation refers to the model specification. The current model focused exclusively on psychometric constructs (health, environment, knowledge). It did not incorporate moderating demographic variables such as gender, monthly income, or academic background. Future studies should integrate these moderators to investigate whether the mediating role of awareness varies across different income groups, gender categories, or educational levels, providing a more nuanced and granular understanding of organic consumption behavior.

References

Aryal, K. P., Chaudhary, P., Pandit, S., & Sharma, G. (2009). Consumers' willingness to pay for organic products: A case from Kathmandu valley. *Journal of Agriculture and Environment*, *10*, 15–26. https://doi.org/10.3126/aej.v10i0.2126

Asif, M., Xuhui, W., Nasiri, A., & Ayyub, S. (2018). Determinant factors influencing organic food purchase intention and the moderating role of awareness: A comparative analysis. *Food Quality and Preference*, *63*, 144–150. https://doi.org/10.1016/j.foodqual.2017.08.006

Barrera-Verdugo, G., & Durán-Sandoval, D. (2024). Influence of moral reasoning and environmental concern on sustainable food consumption behaviors: A gender comparison among university students. *Cleaner Waste Systems*, *9*, Article 100164. https://doi.org/10.1016/j.clwas.2024.100164

Bhattarai, K. (2019). Consumers' willingness to pay for organic vegetables: Empirical evidence from Nepal. *Economics and Sociology, 12*(3), 132–146. https://doi.org/10.14254/2071-789X.2019/12-3/9

Effendi, I., Ginting, P., Lubis, A., & Fachruddin, K. (2015). Analysis of consumer behavior of organic food in North Sumatra province, Indonesia. *Journal of Business and Management, 4*(1), 44–58.

Firoozzare, A., Boccia, F., Yousefian, N., Ghazanfari, S., & Pakook, S. (2024). Understanding the role of awareness and trust in consumer purchase decisions

for healthy food and products. *Food Quality and Preference, 121,* Article 105275. https://doi.org/10.1016/j.foodqual.2024.105275

Gan, C., Zhiyou, C., Tran, M. C., Cohen, D. A., & Xiangxiang, W. (2014). Consumer attitudes towards the purchase of organic products in China. *International Journal of Business and Economics, 15*, 117–144.

Ghvanidze, S., Velikova, N., Dodd, T., & Oldewage-Theron, W., (2017). A discrete choice experiment of the impact of consumers' environmental values, ethical concerns, and health consciousness on food choices – A cross-cultural analysis. *British Food Journal, 119,* 863–881. https://doi.org/10.1108/BFJ-07-2016-0342

Gundala, R. R., & Singh, A. (2021). What motivates consumers to buy organic foods? Results of an empirical study in the United States. *PLoS One, 16*(9), Article e0257288. https://doi.org/10.1371/journal.pone.0257288

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European *Business Review, 31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hoang, H. C., Chovancová, M., & Hoang, T. Q. H. (2022). The theory of planned behavior and food choice questionnaire toward organic food of millennials in Vietnam. *Global Business and Finance Review*, *27*(4), 83–98. https://doi.org/10.17549/gbfr.2022.27.4.81

Jahangir, N., Parvez, N., & Bhattacharjee, D. (2009). Determinants of customers' willingness to buy: An empirical investigation. *ABAC Journal*, *29*(3), 29–37.

Jílková, P., & Králová, P. (2020). Customer insights and online shopping attitude of Gen Z. In *The 14th International Days of Statistics and Economics* (pp. 408–417). Prague. https://msed.vse.cz/msed_2020/article/340-Jilkova-Petra-paper.pdf

Kapuge, K. D. L. R. (2016). Determinants of organic food buying behavior: Special reference to organic food purchase intention of Sri Lankan customers. *Procedia Food Science, 6*, 303–308. https://doi.org/10.1016/j.profoo.2016.02.060

Katt, F., & Meixner, O. (2020). A systematic review of drivers influencing consumer willingness to pay for organic food. *Trends in Food Science & Technology, 100*, 374–388. https://doi.org/10.1016/j.tifs.2020.04.029

Krystallis, A., & Chryssohoidis, G. (2005). Consumers' willingness to pay for organic food. *British Food Journal, 107*(5), 320–343. https://doi.org/10.1108/00070700510596901

Lavuri, R. (2022). Organic green purchasing: Moderation of environmental protection emotion and price sensitivity. *Journal of Cleaner Production, 368*, Article 133113. https://doi.org/10.1016/j.jclepro.2022.133113

Lavuri, R., Jusuf, E., & Gunardi, A. (2021). Green sustainability: Factors fostering and behavioral difference between Millennial and Gen Z: mediating role of green purchase intention. *Ekonomia i Środowisko, 76(*1), 8–38.

Liang, H., Wu, Z., & Du, S. (2024). Study on the impact of environmental awareness, health consciousness, and individual basic conditions on the consumption

intention of green furniture. *Sustainable Futures, 8*, Article 100245. https://doi.org/10.1016/j.sftr.2024.100245

Lockie, S., Lyons, K., Lawrence, G., & Mummery, K. (2002). Eating 'green': Motivations behind organic food consumption in Australia. *Sociologia Ruralis*, *42*(1), 23–40. https://doi.org/10.1111/1467-9523.00200

Magnusson, M., Arvola, A., Hursti, U.-K., Åberg, L., & Sjödén, P.-O. (2003). Choice of Organic Food Is Related to Perceived Consequences for Human Health and to Environmentally Friendly Behaviour. *Appetite, 40*, 109–117. https://doi.org/10.1016/S0195-6663(03)00002-3

Mahmud, A. (2024). How and when consumer corporate social responsibility knowledge influences green purchase behavior: A moderated-mediated model. *Heliyon, 10*(3), Article e24680. https://doi.org/10.1016/j.heliyon.2024.e24680

Minh Ngo, H., Moritaka, M., & Fukuda, S. (2013). Willingness to Pay for Organic Vegetables in Vietnam: An Empirical Analysis in Hanoi Capital. *Journal of the Faculty of Agriculture, Kyushu University*, *58*, 449–458. https://doi.org/10.5109/27378

Nautiyal, S., & Lal, C. (2025). Eager or passive? Decoding potential consumer profiles based on knowledge and perceptions regarding organic food products. *Food Quality and Preference, 123*, Article 105345. https://doi.org/10.1016/j.foodqual.2024.105345

Newton, J. D., Tsarenko, Y., Ferraro, C., & Sands, S. (2015). Environmental concern and environmental purchase intentions: The mediating role of learning strategy. *Journal of Business Research, 68*(9), 1974–1981. https://doi.org/10.1016/j.jbusres.2015.01.007

Ngan, N. T., & Khoi, B. H. (2022). Consumer's organic food buying intention in COVID-19 pandemic: Evidence from Vietnam. In Y. Maleh, M. Alazab, N. Gherabi, L. Tawalbeh, & A. A. Abd El-Latif (Eds.), *Advances in information, communication and cybersecurity: Proceedings of ICI2C'21*, pp. 345–353. Springer. https://doi.org/10.1007/978-3-030-91738-8_32

Nguyen, H. V., Nguyen, N., Nguyen, B. K., Lobo, A., & 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*, *16*(6), Article 1037. https://doi.org/10.3390/ijerph16061037

Nguyen, L. H., & Nguyen, H. P. (2020). Generation Z in Vietnam: The quest for authenticity. In E. Gentina & E. Parry (Eds.), *The new generation Z in Asia: Dynamics, differences, digitalisation*, pp. 135–148. Emerald Publishing. https://doi.org/10.1108/978-1-80043-220-820201014

Nguyen, P. M., & Vo, N. D. (2023). Exploring organic food purchase behaviors of Gen Z: an application of TPB and MOA model in a transition country. *Foundations of Management*, *15*(1), 35–50. https://doi.org/10.2478/fman-2023-0003

Nguyen, T.-P., & Dekhili, S. (2019). Sustainable development in Vietnam: An examination of consumers' perceptions of green products. *Business Strategy & Development, 2*. https://doi.org/10.1002/bsd2.48

Nguyen, V. P., Mergenthaler, M., & Pham, N. H. Q. (2025). Consumer transition: Analyzing the impact of environmental and health consciousness on green food choices in Vietnam. *Discover Sustainability*, *6*(1), Article 415. https://doi.org/10.1007/s43621-025-01275-w

Parashar, S., Singh, S., & Sood, G. (2023). Examining the role of health consciousness, environmental awareness and intention on purchase of organic food: A moderated model of attitude. *Journal of Cleaner Production, 386*, Article 135553. https://doi.org/10.1016/j.jclepro.2022.135553

Pham, N. H. Q., Nguyen, T. T. M., To, T. N., Nguyen, T. T. H., & Nguyen, V. P. (2023). The influence of cultural values on consumers' green purchase intention in South Korea. *Journal of the International Society for Southeast Asian Agricultural Sciences, 29*(1), 75–89.

Ramalingam, S., & Anuradha, R. N. (2021). Consumers' willingness to pay more for organic food products-A study with reference to the Chennai city. *Turkish Journal of Computer and Mathematics Education 12*(11), 5796-5800.

Rana, J., & Paul, J. (2017). Consumer behavior and purchase intention for organic food: A review and research agenda. *Journal of Retailing and Consumer Services, 38*, 157–165. https://doi.org/10.1016/j.jretconser.2017.06.004

Sesini, G., Castellini, G., Iannello, P., Lombi, L., Lozza, E., Lucini, L., & Graffigna, G. (2023). Determinants of the willingness to buy products certified by omics technology: differences between regular and occasional consumers of organic food. *Food Research International, 164*, Article 112324. https://doi.org/10.1016/j.foodres.2022.112324

Singh, A., & Verma, P. (2017). Factors influencing Indian consumers' actual buying behaviour towards organic food products. *Journal of Cleaner Production, 167*, 473–483. https://doi.org/10.1016/j.jclepro.2017.08.106

Stern, P. (2002). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues, 56*, 407–424. https://doi.org/10.1111/0022-4537.00175

Talwar, S., Jabeen, F., Luukela-Tandon, A., Sakashita, M., & Dhir, A. (2021). What drives willingness to purchase and stated buying behavior toward organic food? A Stimulus–Organism–Behavior–Consequence (SOBC) perspective. *Journal of Cleaner Production, 293*, Article 125882. https://doi.org/10.1016/j.jclepro.2021.125882

Thøgersen, J., Zhou, Y., & Huang, G. (2016). How stable is the value basis for organic food consumption in China?. *Journal of Cleaner Production*, *134*, 214–224. https://doi.org/10.1016/j.jclepro.2015.06.036

Yang, M., Al-Shaaban, S., & Nguyen, T. T. B. (2014). *Consumer attitude and purchase intention towards organic food: A quantitative study of China* [Master's thesis, Linnaeus University]. DiVA. http://urn.kb.se/resolve?urn=urn:nbn:se:lnu:diva-34233

Čimbenici koji utječu na spremnost na plaćanje organske hrane među studentima generacije Z u Hanoiju, Vijetnamu: Medijacijska uloga osviještenosti

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Sažetak

Unatoč niskoj potražnji za organskom hranom u Vijetnamu, potrošnja organskih proizvoda postupno raste. Postoji pozitivna korelacija između osviještenosti o prednostima organske hrane i spremnosti na plaćanje među vijetnamskom mladeži. Rastući interes studenata Generacije Z za organske proizvode doprinosi održivijem potrošačkom ponašanju te promicanju općeg zdravlja i ekološke održivosti u Vijetnamu. Cilj ovog istraživanja bio je analizirati čimbenike koji utječu na spremnost na plaćanje organske hrane među studentima Generacije Z u Hanoiju, s posebnim naglaskom na medijacijsku ulogu osviještenosti. Tehnika PLS-SEM korištena je za analizu podataka prikupljenih putem izravnih intervjua s 534 studenta s pet sveučilišta u Hanoiju, koristeći strukturirani upitnik. Rezultati istraživanja pokazuju da osviještenost o organskoj hrani ima najveći utjecaj na spremnost na plaćanje, nakon čega slijede znanje o organskim proizvodima i briga o zdravlju. Rezultati također otkrivaju da izravna veza između ekološke zabrinutosti i spremnosti na plaćanje nije statistički značajna. Na temelju ovih uvida, autori predlažu nekoliko preporuka za donositelje politika i poduzeća koja promiču potrošnju organske hrane na vijetnamskom tržištu. Ovo istraživanje doprinosi postojećoj literaturi isticanjem medijacijske uloge osviještenosti u odnosu između različitih čimbenika i spremnosti na plaćanje organske hrane. Relevantnost i vrijednost istraživanja dodatno su naglašene njegovim potencijalnim utjecajem na promicanje potrošnje organske hrane među pripradnicima Generacije Z na tržištima u razvoju.

Ključne riječi*: osviještenost, potrošačko ponašanje, briga o zdravlju, organska hrana, spremnost na plaćanje*

JEL klasifikacija*: D12, I12, M31, Q13*

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