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A sequential mediation model for the effect of food safety consciousness on the intention to purchase organic food

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This research aims to clarify consumer purchase intentions (PIs) for organic food (OF) in China by investigating factors, including consumers' food safety consciousness (FSC), health consciousness (HC), and attitude (AT) toward OF. To collect data for this study, online surveys were carried out sequentially among 350 respondents, and partial least squares structural equation modeling (PLS-SEM) was employed to test the proposed hypotheses regarding the direct and indirect effect of FSC on PI and the sequential mediating effect of HC and AT. The findings indicate that consumers' FSC strongly influences their intention to purchase OF and is sequentially mediated by HC and AT. PI is also significantly impacted by HC and is mediated by AT, and AT directly significantly influences PI. Through multiple group analyses, the path from HC to AT is found to be moderated by education. Accordingly, suggestions for OF businesses and future research are provided to improve public health.

KEYWORDS

organic food, food safety consciousness, health consciousness, attitude, purchase intention, PLS-SEM, multigroup analysis

1 Introduction

The organic food (OF) industry has flourished in China in recent years, driven by growing health consciousness. Since the COVID-19 epidemic, Chinese consumers have been adopting healthier habits, and OF sales are increasing dramatically as a result. For example, China's OF consumption and production expanded rapidly over the years, making China the fourth-largest organic market in the world and the first in Asia (Ministry of Agriculture and Rural Affairs of People's Republic of China, 2023). By 2028, China's OF market will reach US$30.88 billion, up from US$14.57 billion in 2022. The OF industry in China is predicted to increase at a compound annual growth rate (CAGR) of 13.34% (Research and Markets, 2023).

The theory of planned behavior (TPB) is the most frequently employed theoretical framework for studying consumers' attitudes and behavior intentions toward OF consumption in different countries or regions (Akter et al., 2023; Carrión Bósquez et al., 2023; Chetioui et al., 2023; Ferreira and Pereira, 2023; Hoyos-Vallejo et al., 2023; Khan et al., 2023; Mai et al., 2023; Nguyen and Vo, 2023; Prakash et al., 2023). In a nutshell, the TPB postulates that a specific behavior is influenced by the intention to perform it. Intention encompasses both motivation and cognitive planning and serves as an immediate antecedent to the behavior itself. Intention is determined by three interrelated factors: attitude toward the behavior,

subjective norms (SNs), and perceived behavioral control (PBC). In the context of the TPB, purchase intention (PI) toward OF is not significantly determined by PBC and SN (Yazdanpanah and Forouzani, 2015; Yadav and Pathak, 2016; Asif et al., 2018; Chekima et al., 2019). In contrast, attitudes toward OF are considered the main factor influencing OF PI, as OF consumption represents a highly individualistic behavior (Yazdanpanah and Forouzani, 2015; Iqbal et al., 2021).

The motivations for OF consumption have been thoroughly investigated in earlier publications. Previous research has identified that consumers' purchasing motivations for OF involve economic reasons (e.g., price, Zheng et al., 2021), social and cultural factors (Molinillo et al., 2020), pandemic factors (Sohn et al., 2022; Qi et al., 2023), supply-side factors (such as product, price, place, and promotion; Jiang et al., 2023), communication (Septianto and Kemper, 2021), consumer intrapersonal factors (such as trust, Kamboj et al., 2023; Prakash et al., 2023; Yang et al., 2023), consumer interpersonal factors (Sadiq et al., 2021; Taghikhah et al., 2021), health consciousness (Ali et al., 2021; Ferreira and Pereira, 2023; Kamboj et al., 2023), and food safety consciousness (Nagaraj, 2021; Zheng et al., 2021). In particular, the main motivations for buying OF were identified as health consciousness (HC), food safety consciousness (FSC), and attitude (Iqbal et al., 2021; Zheng et al., 2021; Alam et al., 2022; Su et al., 2022). There may be a relationship between FSC and HC, but this association has not been tested in the aforementioned model.

In light of the rising awareness and consumption of organic food in China, it is vital to examine the associations among FSC, HC, AT toward OF, and consumers' PI. Furthermore, an investigation is required to determine the mediating role of HC and AT on PI. Previous studies confirm the association of the above three selected variables with consumers' PI toward OF (Michaelidou and Hassan, 2008; Wang et al., 2019). Furthermore, Su et al. (2022) observe that consumers' primary concern regarding the food safety of the products they purchase is HC. A limited number of studies suggest that AT has a mediating effect on the impact of FSC on PI; however, there is a lack of comprehensive research that considers the above four factors in the Chinese context.

Guided by the TPB, a study (Nagaraj, 2021) focusing on OF consumers in India and the factors affecting their PI, including consumers' FSC, HC, AT, and PI, also explores the sequential mediating role of FSC and AT. Simply put, their study examined the effect of HC on FSC, and AT and FSC as mediators of the effects of HC on PI and HC on AT, respectively. Drawing on the modified TPB, Alam et al. (2022) explores Malaysian consumers' PI for healthy foods, considering similar factors. This is in line with Nagaraj (2021) and Su et al. (2022).

Generation Z (Gen-Z) are individuals born in 1995 or later and are considered to be the "green generation" with more environmental consciousness (Wang et al., 2022). Academic literature also indicates that Gen-Z has purchasing behaviors consistent with green consumption (Ndofirepy and Matema, 2019; Carrión Bósquez et al., 2023) and is health-conscious, paying increased attention to food and its nutritional value (Roh et al., 2022). In addition, Gen-Z in China is estimated to contribute over five trillion yuan toward consumption, even though many of them are still students. This shifts Chinese Gen-Z consumers' spending patterns into the focus of many businesses (Ma, 2023). This study selected university students as they are more susceptible and responsive to environmental concerns (Carrión Bósquez et al., 2023). Prior researchers (Hoyos-Vallejo et al., 2023; Yang et al., 2023) argue that university students are a suitable group to study as they are part of the customer segment that typically makes purchasing decisions that align with OF benefits.

This study aims to contribute to the existing literature on Chinese Gen-Z's consumer behavior toward OF. It examines the direct influence of FSC on PI and the indirect influence via the sequential mediating effect of HC and AT. Additionally, this research analyses the effect of FSC on HC and AT, with HC mediating the effect of FSC on AT and FSC mediating the effect on PI. This study provides insights for OF producers and marketing agencies in China to develop strategies to expand their consumer base by examining the effect of FSC on PI toward OF and the mediating impact of HC and AT. The four parameters are interrelated rather than complementary.

2 Literature review and research hypotheses

TPB has gained significant interest from researchers investigating OF consumption, with the tool being utilized in a range of studies (Carrión Bósquez et al., 2023; Ferreira and Pereira, 2023; Hoyos-Vallejo et al., 2023; Khan et al., 2023; Nguyen and Vo, 2023; Prakash et al., 2023). According to the TPB, AT (favorable or unfavorable) is the most significant predictor of PI (Iqbal et al., 2021). Recent research demonstrates the importance of examining the variables associated with OF purchasing. Existing research examines the factors contributing to consumers' PI toward OF, such as FSC, HC, and AT, through the theoretical lens of the TPB.

2.1 Relationship among FSC, HC, AT, and PI

FSC refers to "*the values, attitudes, and beliefs that underlie the awareness of food safety issues and hazards*" (Yu et al., 2021). It is suggested that consumers choose OF primarily out of concern for food safety (Paul and Rana, 2012). Eating OF can reduce the potential harm caused by chemically processed foods (Padel and Foster, 2005). FSC is linked to an individual's HC as consumers with food safety concerns are vigilant in their food choices and avoid consuming chemical substances that may harm their health. Drawing from the TPB, Su et al. (2022) investigate the factors influencing the PI of young OF consumers in Pakistan and found that FSC has a positive influence on HC. Additionally, FSC has a significant influence on consumers' AT toward OF (Yin et al., 2010; Shafie and Rennie, 2012). Nagaraj (2021) proposes that the FSC of consumers in emerging markets has a positive but not significant impact on AT toward OF; however, Alam et al.'s study (2022) evidence that FSC has a positive influence on Malaysian consumers' AT toward OF.

FSC is identified as a key driver of PI due to the health benefits of organic food (Pino et al., 2012; Hsu et al., 2016; Prentice et al., 2019). Researchers also identify FSC as an approach that considerably influences consumers' OF PI (Shafie and Rennie, 2012). Although Nagaraj (2021) proposes that the FSC of consumers in emerging markets has a positive but not significant influence on PI toward OF, Zheng et al.'s (2021) study proves that FSC has a favorable impact on

Bangladesh's Generation Y's PI toward OF. Accordingly, the research hypotheses are proposed.

> *H1:* FSC has a direct positive impact on HC toward OF.
>
> *H2:* FSC has a direct positive impact on AT toward OF.
>
> *H3:* FSC has a direct positive impact on PI toward OF.

2.2 Relationship between HC, AT, and PI

HC refers to "*people's perceptions of health problems and their willingness to take measures to preserve their health*" (Yang et al., 2022). Health-conscious individuals generally prefer OF as it is perceived to be safe, nutritious, free of harmful chemicals, and environmentally friendly (Molinillo et al., 2020). As a result, OF is considered less likely to cause health problems. HC is a crucial factor in determining OF consumption, which reinforces the concept of a healthy diet (Rana and Paul, 2020). In the context of purchasing OF, HC is a key determinant of consumer AT (Pacho, 2020). Recent studies show that HC positively influences AT toward purchasing OF (Alam et al., 2022; Chetioui et al., 2023; Ferreira and Pereira, 2023).

Previous research on the determining factors of buying OF underscores the significance of health-related incentives. HC is recognized as one of the primary drivers for consumers purchasing OF (Yadav and Pathak, 2016; Asif et al., 2018; Prakash et al., 2018). Nagaraj (2021) investigates the impact of HC, FSC, and AT on OF purchases in emerging markets and provides evidence that consumers' HC positively impacts PI toward OF. Gomes et al.'s study (2023) on the purchase of organic food in Portugal found that the HC of Gen-Z consumers significantly influences PI toward OF. Dimitrova and Ilieva (2023) investigate the consumption behavior toward functional beverage brands of Gen-Z in Bulgaria, with the results confirming that HC toward functional beverage brands significantly affects PI. Similarly, Ferreira and Pereira's study (2023) evidence that HC significantly affects PI in the Portuguese context. Kamboj et al. (2023) investigate the Indian consumers' PI toward OF and discover that HC has a significant and positive influence on PI. Accordingly, the research hypotheses are proposed.

> *H4:* HC has a direct positive impact on AT toward OF.
>
> *H5:* HC has a direct positive impact on PI toward OF.

2.3 Relationship between AT and PI

In consumer psychology research, AT is widely regarded as the primary determinant of behavior intention and subsequent behavior, which can help explain consumers' psychological evaluations of products (Xu et al., 2020). Behavioral intention refers to the willingness of an individual to engage in a particular behavior, and it is considered a primary antecedent to actual purchasing behavior (Ajzen, 1991). In accordance with the findings of Pham et al. (2019), customers with a positive attitude toward OF are more likely to purchase OF. Recent studies show that consumers' AT toward OF positively affects their PI for such products (Nagaraj, 2021; Nafees et al., 2022; Su et al., 2022; Chetioui et al., 2023; Ferreira and Pereira, 2023; Khan et al., 2023; Prakash et al., 2023). In light of these arguments, the research hypothesis is proposed:H6. AT has a direct positive impact on PI toward OF.

The arguments presented in this section serve as the foundation for developing a conceptual model that identifies the key drivers of consumer purchase intention to buy OF in China. These drivers include food safety consciousness, health consciousness, and attitude. This study also draws on theories related to purchasing intention and former studies on OF purchase intent as the theoretical foundation for conducting the study (Figure 1).

3 Methodology

3.1 Measurement instrument

As shown in Supplementary Appendix A, all constructs are adopted from previous literature with some adjustments. All measurements use a five-point Likert scale (1 = 'strongly disagree' and 5 = 'agree'). The questionnaire includes demographic questions, such as gender, age, and education.

Before the survey was distributed, 36 students from the author's institution were selected to evaluate its reliability. The pilot tests showed that each item had acceptable reliability, as all items surpassed the threshold value of 0.7 (Nunnally, 1978). Thus, the questionnaire was utilized to gather data without the removal of any questions from the established constructs.

3.2 Procedures for sampling and data collection

This study focuses on Gen-Z (i.e., born between 1995 and 2005) in China. Gen-Z belongs to the group of customers who frequently make purchasing decisions and are familiar with the benefits of organic food (Yang et al., 2023). To account for the difficulty in obtaining a complete sampling frame, a convenience sampling technique, commonly used in consumer research, was employed (Jani and Han, 2015). Additionally, convenience sampling was selected to accommodate time and resource constraints and to obtain a readily available population at a specific time (Dörnyei, 2007; Etikan et al., 2015).

The data were collected from two public universities in Jiaxing City, Zhejiang Province, China. Jiaxing, a prefecture-level city in Zhejiang Province, is one of the city groups in the Yangtze River Delta and is ranked among the top 100 Chinese cities in terms of GDP. The universities were selected because they had agreed to participate in the research, and the study received ethical clearance and complied with all university research ethics policies.

The data collection was carried out from November 2022 to March 2023. Additionally, researchers collected data by conducting online surveys via WeChat using a Google Forms link. To ensure ethical standards were met, respondent confidentiality and anonymity were maintained throughout the survey, participants were informed of the study's purpose and their right to withdraw at any time, and informed consent was obtained from all participants.

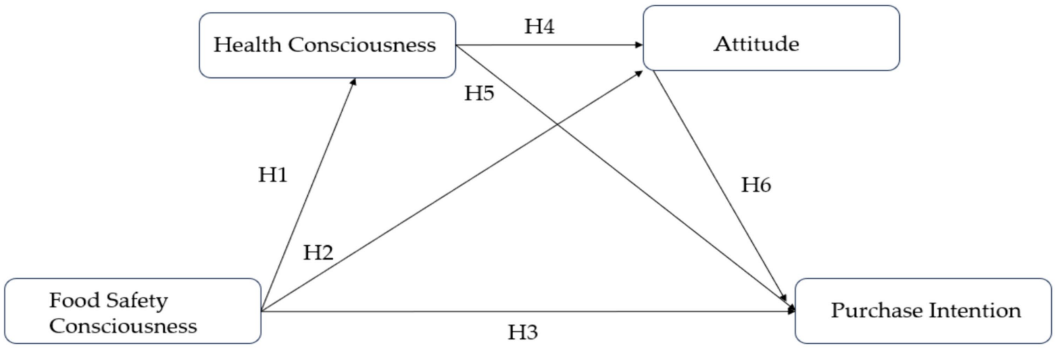

FIGURE 1
Conceptual model.

TABLE 1 Respondent profile.

Aspects	Classification	Frequency	Percentage (%)
Gender	Male	169	48.3
	Female	181	51.7
Education	Associate degree	116	33.2
	Bachelor	194	55.4
	Graduate and above	40	11.4
Monthly disposable income (CNY)	3,000 and below	59	16.9
	3,001–5,000	140	40.0
	5,001–8,000	118	33.7
	8,001 and above	33	9.4

A total of 350 valid responses were collected. The final sample includes 169 (48.3%) male respondents and 181 (51.7%) female respondents. Most respondents have a bachelor's degree (55.4%) and are unmarried (78.9%). Finally, 140 (40%) participants report having a monthly disposable income ranging from 3,001 to 5,000 CNY, while 118 (33.7%) participants report an income between 5,001 and 8,000 CNY (Table 1).

3.3 Data analysis

Partial least squares structural equation modeling (PLS-SEM) was used to evaluate the proposed model. As proposed by Hair et al. (2011), PLS-SEM is a technique that is highly effective in analyzing data with fewer restrictive assumptions, smaller sample sizes, greater model complexity, and a greater emphasis on exploration rather than confirmation. Consequently, the SmartPLS 4.0 software was employed to perform estimations. Additionally, the significance level of the path coefficient was determined using the bootstrapping procedure with 5,000 resamples, as recommended by Henseler et al. (2015). The proposed model was subjected to two distinct stages of assessment. Initially, the reliability and validity of the measurement model were evaluated, followed by an examination of the structural model.

TABLE 2 FL, Cronbach's α, CR, and AVE.

Constructs/ items	FL	VIF	Cronbach's α	CR	AVE
Food safety consciousness (FC)			0.743	0.852	0.658
FSC1	0.832	1.437			
FSC2	0.770	1.460			
FSC3	0.831	1.558			
Health consciousness (HC)			0.737	0.850	0.654
HC1	0.823	1.401			
HC2	0.823	1.604			
HC3	0.779	1.446			
Attitude (AT)			0.856	0.933	0.874
AT1	0.932	2.268			
AT2	0.938	2.268			
Purchase intention (PI)			0.872	0.921	0.796
PI1	0.885	2.232			
PI2	0.883	2.266			
PI3	0.908	2.505			

4 Results

4.1 Reliability and validity

Cronbach's alpha (CA) and composite reliability (CR) are used to measure reliability in this study. The CA value is between 0.737 and 0.872, which indicates acceptable reliability. Similarly, the Cronbach's alpha value is above the required threshold of 0.70 (Table 2), indicating that the data collected have good reliability (Loh et al., 2021).

Validity is measured through convergent validity (CV) and discriminant validity (DV). Factor loading (FL) and average variance extracted (AVE) are used to evaluate CV. All FL values exceed the threshold value of 0.7 (Loh et al., 2022) (Table 2). Additionally, the AVE for each construct ranges from 0.654 to 0.874, surpassing the minimum threshold of 0.50 (Fornell and Larcker, 1981). Hence, both criteria suggest that the measurement model has an acceptable CV.

With regard to the assessment of DV, the Fornell–Larcker criterion was employed. Table 3 reveals that a facet's square root of AVE is higher than the correlation coefficient between the selected facet and the other facets (Hew and Kadir, 2017). This indicates that the model is valid. In short, the measurement model is considered to have adequate reliability along with DV and CV.

Similarly, the hypothesized model attained a root mean squared residual (RMSR) of 0.071, thereby meeting the global criterion of 0.08 (Hu and Bentler, 1999). Thus far, the results indicate that the measurement scale used in this investigation possesses adequate psychometric quality to be applied in the subsequent analysis phase.

To confirm whether there is a threat of common method variance (CMV), this research applies two methods. Initially, this study ran Harman's single-factor test in SPSS 26 by entering all the items of the variables and found the first factor with a variance of 38.75%, which is less than the cutoff of 50% (Podsakoff et al., 2003). Then, potential CMV was evaluated through a collinearity evaluation test, as recommended by Kock (2013) and Kock and Lynn (2012). If the inter-construct variance inflation factor (VIF) value exceeds 3.3, CMV could be a significant concern; however, all reported values are beneath the 3.3 threshold, indicating no CMV (Table 2). The results of the two testing methods indicate that the CMV does not present a significant threat in this study.

4.2 Examination of The structural model

Before assessing the structural model, it is essential to evaluate the multicollinearity using the SmartPLS 4.0 software to calculate the VIF. All VIF values are below the threshold of 3.3 (Table 2) (Hair et al., 2006), thus showing no significant multicollinearity issue.

The importance of the path coefficients is examined using the bias-corrected and accelerated bootstrap method with 5,000 sub-samples (Hair et al., 2016). Table 4 presents the results of the analysis and the anticipated impacts. As demonstrated in Table 4, FSC has a significant influence on HC (beta = 0.542, $p < 0.01$), AT (beta = 0.293, $p < 0.01$), and PI (beta = 0.118, $p < 0.01$). In addition, HC exerts a significant influence on both AT (beta = 0.363, $p < 0.01$) and PI (beta = 0.363, $p < 0.01$). Moreover, AT positively affects PI (beta = 0.680, $p < 0.01$). Consequently, all of the hypotheses tested were supported. Furthermore, the model effectively explains 68.5% of the PI variance, 33.8% of the changes in AT, and 24.8% of the changes in HC.

TABLE 3 Discriminant validity.

	AT	FSC	HC	PI
AT	**0.935**			
FSC	0.489	**0.811**		
HC	0.522	0.542	**0.809**	
PI	0.82	0.536	0.576	**0.892**

Fornell–Larcker criterion (below the main diagonal); the main diagonal in bold is the square root of AVE.

4.3 Mediating effect analysis

SmartPLS 4.0 was used to examine the sequential mediation models. A sample size of b = 5,000 was selected for random samplings to calculate indirect effects using a bias-corrected bootstrapping procedure. The mediation effect is considered significant if the 95% bias-corrected confidence interval (BCCI) does not include 0.

Table 4 also presents the bootstrap results for the indirect effect. The findings indicate that the indirect effect path (FSC → AT → PI) is significant (beta = 0.199, 95% BCCI = [0.136, 0.265]). Therefore, AT partially mediates the nexus between FSC and PI (Table 4). Additionally, the indirect effect path (FSC → HC → PI) is significant (beta = 0.086, 95% BCCI = [0.048, 0.131]), indicating HC also partially mediates the nexus between FSC and PI. Moreover, the analysis of the sequential mediation effect reveals that the indirect effect path (FSC → HC → AT → PI) of the sequential mediation model is significant [beta = 0.134, 95% BCCI = (0.098, 0.173)]. This suggests that HC and AT play a sequential co-mediating role in the relationship between FSC and PI. As FSC increases, the level of HC also increases, which in turn increases the level of AT, resulting in an increase in PI.

4.4 Effect size and predictive relevance

The analysis reveals that AT has a large effect size on PI, surpassing the moderate size threshold value of 0.35. Meanwhile, FSC and HC have a medium effect size on PI, exceeding the size cutoff value of 0.02 (Cohen, 2013). The Q^2 prediction for the PI construct is greater than zero, indicating that PLS-SEM-based predictions are superior to the most basic benchmark (Evermann and Tate, 2016). Additionally, the prediction errors for PI are symmetrically distributed. Therefore, the assessment of predictive power should be based on the root mean square error (RMSE) instead of the mean absolute error (MAE). As illustrated in Table 5, all indicators in the PLS-SEM analysis exhibit lower RMSE values in comparison to the naïve LM benchmark. Consequently, the model can be classified as exhibiting high predictive power in accordance with the criterion proposed by Shmueli et al. (2019).

4.5 Importance-performance map analysis (IPMA)

The purpose of the IPMA is to detect constructs that are highly significant but underperform in the target variable (Ringle and Sarstedt, 2016). As per Table 6, FSC (68.945%) has a significant importance on PI, followed by HC (66.006%) and AT (64.015%).

4.6 Multiple group analysis (MGA)

The MGA technique is used to examine how the control variables impact the relationships between the independent and dependent variables. Differences between the two selected groups are analyzed using the non-parametric Henseler–MGA technique (Ravand and Baghaei, 2016). Table 7 displays the MGA findings.

With regard to the variations between lower (associate degree) and higher (bachelor and above) education level students in terms of

TABLE 4 Structural model examination outcome.

				Bias-corrected confidence intervals			
		Beta	*t*-value	5%	95%	Remarks	Effect f^2
H1	FSC → HC	0.542***	13.451	0.466	0.601	Supported	0.416
H2	FSC → AT	0.293***	5.255	0.198	0.383	Supported	0.091
H3	FSC → PI	0.118***	2.975	0.049	0.180	Supported	0.031
H4	HC → AT	0.363***	6.410	0.264	0.451	Supported	0.139
H5	HC → PI	0.158***	3.637	0.090	0.233	Supported	0.054
H6	AT → PI	0.680***	19.202	0.616	0.734	Supported	1.071
Indirect effect							
FSC → AT → PI		0.199***	5.023	0.136	0.265		
FSC → HC → PI		0.086***	3.391	0.048	0.131		
FSC → HC → AT → PI		0.134***	5.946	0.098	0.173		
HC → AT → PI		0.247***	6.225	0.179	0.310		
FSC → HC → AT		0.197***	6.111	0.146	0.252		

*** $p < 0.001$.

TABLE 5 Result of PLS-predict for dependent variables.

Items	Q^2 prediction	PLS-SEM RMSE	LM RMSE	PLS-SEM-LM RMSE
PI1	0.168	0.771	0.771	0.000
PI2	0.253	0.692	0.693	−0.001
PI3	0.250	0.751	0.752	−0.001

TABLE 6 Results of IPMA.

Latent variables	Importance (Total effect)	Performance index value (%)
FSC	0.536	68.945
HC	0.405	66.006
AT	0.680	64.015

the hypotheses, only the difference in the effect of HC on AT was found to be partially significant (p-value =0.077 < 0.1). Just as the differences in path coefficients reveal, HC has a stronger effect on AT among students with lower (associate degree) than higher (bachelor and above) education levels. The samples for all hypotheses show no significant difference between male and female respondents. Similarly, the samples for all hypotheses are also not significant between different monthly disposable incomes.

5 Discussion and conclusion

Following 3 years of the global pandemic, we are increasingly aware of the importance of health and food safety. The outbreak has altered consumers' food buying and consumption habits, compelling them to prioritize health and driving the demand for OF (Li et al., 2021; Ruggiero et al., 2021). In particular, the advent of the Internet has led to a shift in consumer purchasing habits and health consciousness. This study examines the direct and indirect effects of FSC on PI, taking into account the sequential mediation of HC and AT. This is a novel approach, as no similar understanding has been put forward in studies based in China. This context will help to illustrate the significance of these findings. The main findings of this study are as follows.

First, the findings confirm that FSC positively influences HC. The study's findings are consistent with the arguments presented by Molinillo et al. (2020) and Su et al. (2022) in the case of Brazil, Spain, and Pakistan. These studies suggest that health-conscious consumers who are concerned about safety tend to avoid foods containing chemical substances that may affect their health and instead choose OF. In addition, the findings also highlight the significance of FSC as an antecedent factor influencing consumers' AT and PI toward OF, which concurs with the results of Liu et al. (2021) in the case of China, Zheng et al. (2021) in the case of Bangladesh, and Alam et al. (2022) in the case of Malaysia. In other words, Gen-Z university students in China intend to purchase OF due to FSC, as they consider OF to be safer than other food products. It is therefore necessary to assess the FSC of consumers in the post-pandemic era and to improve the level of food safety knowledge. The establishment and development of a food safety traceability system will provide customers with clear and accurate information.

Second, the study discovered that consumers' HC significantly influences (both directly and indirectly) their organic food purchase intention. The study's findings are consistent with previous studies, such as Ali et al. (2021) in the case of China. The outcomes were also in line with the existing OF research, which indicated that HC plays a pivotal role in influencing consumers' PI toward OF (Nagaraj, 2021; Dimitrova and Ilieva, 2023; Gomes et al., 2023; Kamboj et al., 2023; Raj et al., 2024). Gen-Z university students in China prefer to purchase OF due to their HC. This is also supported by the recent changes in food consumption habits, with increasing numbers of Chinese customers choosing healthier meals (Qi et al., 2020). Moreover, HC also has a direct impact on AT, which supports the researchers'

TABLE 7 MGA results.

Relationship	Path coefficients diff (Male - Female)	*p*-value	Path coefficients diff (Low - High education)	*p*-value	Path coefficients diff (Low - High monthly income)	*p*-value
H1: FSC → HC	0.092	0.224	0.001	0.984	0.077	0.340
H2: FSC → AT	0.100	0.362	−0.068	0.540	0.056	0.603
H3: FSC → PI	0.033	0.670	−0.051	0.520	0.031	0.716
H4: HC → AT	0.005	0.967	0.185	0.077	−0.073	0.502
H5: HC → PI	−0.061	0.507	0.098	0.249	0.002	0.959
H6: AT→PI	−0.004	0.990	−0.008	0.916	0.004	0.998

observation that HC significantly influences AT (Chetioui et al., 2023; Ferreira and Pereira, 2023). Consequently, to foster a positive consumer perception and attitude toward OF, OF producers need to emphasize the health benefits of organic food in their advertising and promotional activities.

Third, the findings validate the TPB through the significant role of AT. This study's findings further evidence that AT is a key factor in influencing Gen-Z's intention to purchase OF, which is consistent with other studies (Nagaraj, 2021; Nafees et al., 2022; Su et al., 2022; Chetioui et al., 2023; Ferreira and Pereira, 2023; Khan et al., 2023; Prakash et al., 2023). Additionally, AT indirectly mediates the impact of FSC on PI, along with HC. That is, as the FSC and HC individually increased, the attitude toward OF and the intention to purchase OF also increased positively, demonstrating that the attitude toward OF and intention to purchase OF were predicted by these motivating factors. It is therefore recommended that these two motivating factors be employed in the promotion activities with the objective of persuading non-organic buyers to consider OF and reinforcing the purchasing behavior of current organic buyers. It is also beneficial to address consumer concerns regarding the perceived health and safety benefits of organic foods.

Finally, this study's most significant finding, which sets it apart from similar research conducted worldwide, is the sequential mediating role of HC and AT in the indirect effect of FSC on consumer PI (Pacho, 2020; Nagaraj, 2021). This observation reveals that consumers with FSC are influenced by their HC and AT, thereby being motivated to purchase OF. By raising HC, FSC consumers can be encouraged to develop favorable attitudes and become willing to purchase OF. The results presented here align with the transtheoretical model of behavior change (Prochaska and Diclemente, 1983; Norcross et al., 2011), which emphasizes the role of consciousness in influencing attitudes and behavior change. In addition, the findings provide a foundation for extending this theory to the context of organic food consumption. Our study contributes to the body of research on the impact of consumer consciousness on behavior, as recommended by Williams and Poehlman (2017). Furthermore, both HC and AT are significant as single mediating factors. Additionally, they significantly impact the effect of FSC on PI as sequential mediating factors. The sequential mediation results regarding the four factors also demonstrate the significant mediating effect of HC between FSC and AT and AT between HC and PI.

6 Theoretical and managerial implications

Regarding theoretical contributions, this study adopts a conceptual approach to examine the direct influence of FSC on PI of organic food, and the indirect influence through the sequential mediating role of HC and AT. This research also carries important managerial implications for organizations and managers in the OF industry.

The current study has a few managerial implications. First, "Contextualization of Key Changes": combined with the identification of key changes in consumer behavior, the findings can assist strategic marketers in the OF industry in identifying the key determinants of consumers' PI toward OF in the current post-pandemic era. Second, "Segmentation Strategies": Those with a higher FSC, HC, and a positive attitude toward OF can be considered a loyal market segment for the OF market. Therefore, effective segmentation strategies can be formulated and targeted to the right segment to develop positive promotional strategies.

Third, "Be open and honest about organic food procedures": the results of this study indicate that consumer FSC positively influences the likelihood of purchasing OF. Consumers pay more attention to food safety and quality information and are more willing to buy OF (Chen and Jaenicke, 2022; Wang et al., 2024). Consequently, it is imperative that organic producers, retailers, and governments devise effective strategies to instill confidence and assurance in consumers when purchasing OF. For instance, they could collaborate to construct a comprehensive OF safety traceability system, providing customers with comprehensive data on the entire production process. Furthermore, the system must be meticulously monitored by government departments, and the regulatory message must be effectively communicated to consumers through authoritative media channels. This will enhance consumers' trust in the traceability system and address their FSC.

Fourth, "Application of Technology**":** Investing in Internet of Things (IoT) technology enables companies to collect and analyze information, increase productivity, and create value for the company and its customers (Di Vaio et al., 2024). The company employs IoT technology to enhance food safety traceability and generate substantial data and industry information resources covering the entire supply chain.

It is of the utmost importance to communicate the traceability of products, as this is a crucial tool for industry operators to

guide consumer choices and protect consumers and their health (Arcese et al., 2024). The advent of blockchain technology has facilitated the development of more responsible and sustainable procurement systems. This is due to blockchain technology increasing transparency and certainty about the origin, provenance, and quality of products along the supply chain. This would facilitate the accessibility and sharing of information via the Internet or mobile devices with consumers (Arcese et al., 2024).

Fifth, "Education and Awareness Campaigns": Despite the growing demand for organic products, consumers often lack knowledge of the real benefits and impacts of organic farming. One strategy to address this is to conduct comprehensive education and publicity programs to raise consumer awareness of the health benefits of consuming OF. These campaigns can highlight the differences between organic and conventional food production methods and emphasize the potential positive impacts of choosing OF on one's health. Consequently, consumers can be educated through advertisements that organic certification is a reliable indicator of the authenticity of organic foods, thus gradually building their trust in OF.

To conclude, the factors identified in this study as influences on consumers' intention to purchase healthy OF are of great value to organizations and managers in modifying their marketing campaigns and increasing sales.

6.1 Limitations and future works

This study has potential limitations. Initially, the research focuses on consumers' intention to purchase OF, not their buying behavior. Nevertheless, an earlier article confirms intention correlates positively with actual behavior (Akbar et al., 2019). In future studies, it is recommended to include actual purchasing behavior to understand spending on OF and examine the relationship between income and spending on OF. Second, it should be noted that the survey was conducted solely within one province of China. Consequently, the results may not be extrapolated to other provinces' consumers. To provide a more comprehensive understanding of this issue and the differences between provinces or regions, future studies should integrate data from different provinces or regions to make the results more generalizable. Third, this research is limited to Gen-Z university students. To conduct a comparative study, it would be helpful to extend the model to include other generations. Fourth, the research results are generated using a non-probability sampling method, which may affect their generalizability. To improve the sample's representativeness, random sampling should be employed. Fifth, cross-sectional data may impact the analysis findings. As longitudinal data are better suited for this purpose, to determine the causal relationship between variables, it is recommended to gather long-term data in subsequent studies.

Finally, scholars are encouraged to examine the impact of cultural norms and social values on consumers' attitudes and behaviors toward OF. It is recommended that scholars analyze how cultural diversity and differences in FSC and HC affect the OF purchasing options in order to provide relevant insights into customized marketing strategies in different cultural backgrounds.

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found at: the original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

Written informed consent was obtained from the individual(s), and minor(s)' legal guardian/next of kin, for the publication of any potentially identifiable images or data included in this article.

Author contributions

JP: Writing – review & editing, Writing – original draft, Software, Resources, Investigation, Formal analysis, Data curation, Conceptualization. K-SW: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Conceptualization.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Publisher's note

Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fsufs.2024.1402286/full#supplementary-material

References

Ajzen, I. (1991). The theory of planned behavior. *Organ. Behav. Hum. Decis.* 50, 179–211. doi: 10.1016/0749-5978(91)90020-T

Akbar, A., Ali, S., Ahmad, M. A., Akbar, M., and Danish, M. (2019). Understanding the antecedents of organic food consumption in Pakistan: moderating role of food neophobia. *Int. J. Environ. Res. Public Health* 16:4043. doi: 10.3390/ijerph16204043

Akter, S., Ali, S., Fekete-Farkas, M., Fogarassy, C., and Lakner, Z. (2023). Why organic food? Factors influence the organic food purchase intension in an emerging country (study from northern part of Bangladesh). *Resources* 12:5. doi: 10.3390/resources12010005

Alam, S. S., Wang, C. K., Lin, C. Y., Masukujjaman, M., and Ho, Y. H. (2022). Consumers' buying intention towards healthy foods during the COVID-19 pandemic in an emerging economy. *Cogent. Bus. Manag.* 9:2135212. doi: 10.1080/23311975.2022.2135212

Ali, H., Li, M., and Hao, Y. (2021). Purchasing behavior of organic food among Chinese university students. *Sustain. For.* 13:5464. doi: 10.3390/su13105464

Arcese, G., Elmo, G. C., Fortuna, F., Pasca, M. G., and Risso, M. (2024). The role of traditional aspects, health consciousness and environmental concerns in Italian Agri-food consumption during Covid-19. *Br. Food J.* 126, 237–254. doi: 10.1108/BFJ-10-2022-0841

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

Carrión Bósquez, N. G., Arias-Bolzmann, L. G., and Martínez Quiroz, A. K. (2023). The influence of price and availability on university millennials' organic food product purchase intention. *Br. Food J.* 125, 536–550. doi: 10.1108/BFJ-12-2021-1340

Chekima, B., Chekima, K., and Chekima, K. (2019). Understanding factors underlying actual consumption of organic food: the moderating effect of future orientation. *Food Qual. Prefer.* 74, 49–58. doi: 10.1016/j.foodqual.2018.12.010

Chen, D., and Jaenicke, E. (2022). Price promotion of organic foods and consumer demand. *J. Renew. Agric. Food Syst.* 37, 618–623. doi: 10.1017/S1742170521000399

Chetioui, Y., Butt, I., Lebdaoui, H., Neville, M. G., and El Bouzidi, L. (2023). Exploring consumers' attitude and intent to purchase organic food in an emerging market context: a pre−/post COVID-19 pandemic analysis. *Br. Food J.* 125, 3979–4001. doi: 10.1108/BFJ-12-2022-1070

Cohen, J. (2013). Statistical power analysis for the behavioral sciences. New York: Academic Press.

Di Vaio, A., Latif, B., Gunarathne, N., Gupta, M., and D'Adamo, I. (2024). Digitalization and artificial knowledge for accountability in SCM: a systematic literature review. *J. Enterp. Inf. Manag.* 37, 606–672. doi: 10.1108/JEIM-08-2022-0275

Dimitrova, T., and Ilieva, I. (2023). Consumption behaviour towards branded functional beverages among gen Z in post-COVID-19 times: exploring antecedents and mediators. *Behav. Sci.* 13:670. doi: 10.3390/bs13080670

Dörnyei, Z. (2007). Research methods in applied linguistics: Oxford University Press.

Etikan, I., Musa, S. A., and Alkassim, R. S. (2015). Comparison of convenience sampling and purposive sampling American journal of theoretical and applied. *Statistics* 5, 1–4. doi: 10.11648/j.ajtas.20160501.11

Evermann, J., and Tate, M. (2016). Assessing the predictive performance of structural equation model estimators. *J. Bus. Res.* 69, 4565–4582. doi: 10.1016/j.jbusres.2016.03.050

Ferreira, S., and Pereira, O. (2023). Antecedents of consumers' intention and behavior to purchase organic food in the Portuguese context. *Sustain. For.* 15:9670. doi: 10.3390/su15129670

Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* 18, 39–50. doi: 10.1177/002224378101800104

Gomes, S., Lopes, J. M., and Nogueira, S. (2023). Willingness to pay more for green products: a critical challenge for gen Z. *J. Clean. Prod.* 390:136092. doi: 10.1016/j.jclepro.2023.136092

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., and Tatham, R. (2006). Multivariate data analysis. Bergen, New Jersey: Uppersaddle River.

Hair, J. F., Hult, G. T. M., Ringle, C., and Sarstedt, M. (2016). A primer on partial least squares structural equation modeling (PLS-SEM). London, United Kingdom: Sage Publications.

Hair, J. F., Ringle, C. M., and Sarstedt, M. (2011). PLS-SEM: indeed a silver bullet. *J. Mark. Theory Pract.* 19, 139–152. doi: 10.2753/MTP1069-6679190202

Henseler, J., Ringle, C. M., and Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. Acad. Mark. Sci.* 43, 115–135. doi: 10.1007/s11747-014-0403-8

Hew, T. S., and Kadir, S. L. S. A. (2017). Applying channel expansion and self-determination theory in predicting use behaviour of cloud-based VLE. *Behav. Inf. Technol.* 36, 875–896. doi: 10.1080/0144929X.2017.1307450

Hoyos-Vallejo, C. A., Carrión-Bósquez, N. G., and Ortiz-Regalado, O. (2023). The influence of skepticism on the university millennials' organic food product purchase intention. *Br. Food J.* 125, 3800–3816. doi: 10.1108/BFJ-02-2023-0093

Hsu, S. Y., Chang, C. C., and Lin, T. T. (2016). An analysis of purchase intentions toward organic food on health consciousness and food safety with/under structural equation modeling. *Br. Food J.* 118, 200–216. doi: 10.1108/BFJ-11-2014-0376

Hu, L., and Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct. Equ. Modeling* 6, 1–55. doi: 10.1080/10705519909540118

Iqbal, J., Yu, D., Zubair, M., Rasheed, M. I., Khizar, H. M. U., and Imran, M. (2021). Health consciousness, food safety concern, and consumer purchase intentions toward organic food: the role of consumer involvement and ecological motives. *SAGE Open* 11:215824402110157. doi: 10.1177/21582440211015727

Jani, D., and Han, H. (2015). Influence of environmental stimuli on hotel customer emotional loyalty response: testing the moderating effect of the big five personality factors. *Int. J. Hosp. Manag.* 44, 48–57. doi: 10.1016/j.ijhm.2014.10.006

Jiang, Y., Abdullah, S. I. N. W., Lim, B. H. J., Wang, R., and Phuah, K. T. (2023). The role of marketing stimuli and attitude in determining post-COVID buying decisions toward organic food products: evidence from retail consumers in Beijing. *China. Front. Sustain. Food Syst.* 7:1051696. doi: 10.3389/fsufs.2023.1051696

Kamboj, S., Matharu, M., and Gupta, M. (2023). Examining consumer purchase intention towards organic food: an empirical study. *Clean. Responsible Consum.* 9:100121. doi: 10.1016/j.clrc.2023.100121

Khan, Y., Hameed, I., and Akram, U. (2023). What drives attitude, purchase intention and consumer buying behavior toward organic food? A self-determination theory and theory of planned behavior perspective. *Br. Food J.* 125, 2572–2587. doi: 10.1108/BFJ-07-2022-0564

Kock, N. (2013). "WarpPLS 4.0 user manual" in Script warp systems (USA: Laredo Texas).

Kock, N., and Lynn, G. (2012). Lateral collinearity and misleading results in variance-based SEM: an illustration and recommendations. *J. Assoc. Inf. Syst.* 13, 546–580. doi: 10.17705/1jais.00302

Li, S., Kallas, Z., and Rahmani, D. (2021). Did the COVID-19 lockdown affect consumers sustainable behaviour in food purchasing and consumption in China? *Food Control* 132:108352. doi: 10.1016/j.foodcont.2021.108352

Liu, C., Zheng, Y., and Cao, D. (2021). An analysis of factors affecting selection of organic food: perception of consumers in China regarding weak signals. *Appetite* 161:105145. doi: 10.1016/j.appet.2021.105145

Loh, X. M., Lee, V. H., Tan, G. W. H., Hew, J. J., and Ooi, K. B. (2022). Towards a cashless society: the imminent role of wearable technology. *J. Comput. Inf. Syst.* 62, 39–49. doi: 10.1080/08874417.2019.1688733

Loh, X. M., Lee, V. H., Tan, G. W. H., Ooi, K. B., and Dwivedi, Y. K. (2021). Switching from cash to mobile payment: what's the hold-up? *Internet Res.* 31, 376–399. doi: 10.1108/INTR-04-2020-0175

Ma, Y. (2023). Generation Z consumers in China - statistics & facts. Statista. Available at: https://www.statista.com/topics/9889/gen-z-consumers-in-china/#topicOverview (Accessed September, 15 2023).

Mai, N. T., Phuong, T. T. L., Dat, T. T., and Truong, D. D. (2023). Determinants of organic food purchasing intention: an empirical study of local consumers in Da Nang city, Central Vietnam. *Front. Sustain. Food Syst.* 7:1180612. doi: 10.3389/fsufs.2023.1180612

Michaelidou, N., and Hassan, L. (2008). The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food. *Int. J. Consum. Stud.* 32, 163–170. doi: 10.1111/j.1470-6431.2007.00619.x

Ministry of Agriculture and Rural Affairs of People's Republic of China (2023). Available at: http://www.jgs.moa.gov.cn/zfjg/201904/t20190418_6186120.htm (Accessed September 5, 2023).

Molinillo, S., Vidal-Branco, M., and Japutra, A. (2020). Understanding the drivers of organic foods purchasing of millennials: evidence from Brazil and Spain. *J. Retail. Consum. Serv.* 52:101926. doi: 10.1016/j.jretconser.2019.101926

Nafees, L., Hyatt, E. M., Garber, L. L. Jr., Das, N., and Boya, U. O. (2022). Motivations to buy organic food in emerging markets: an exploratory study of urban Indian millennials. *Food Qual. Prefer.* 96:104375. doi: 10.1016/j.foodqual.2021.104375

Nagaraj, S. (2021). Role of consumer health consciousness, food safety & attitude on organic food purchase in emerging market: a serial mediation model. *J. Retail. Consum. Serv.* 59:102423. doi: 10.1016/j.jretconser.2020.102423

Ndofirepy, T. M., and Matema, S. C. (2019). Exploring green purchasing behaviour among college students in a developing economy. *South. Afr. Bus. Rev.* 23, 1–25. doi: 10.25159/1998-8125/4624

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

Norcross, J. C., Krebs, P. M., and Prochaska, J. O. (2011). Stages of change. *J. Clin. Psychol.* 67, 143–154. doi: 10.1002/jclp.20758

Nunnally, J. C. (1978). Psychometric theory. New York: Tata McGraw-Hill.

Pacho, F. (2020). What influences consumers to purchase organic food in developing countries? *Br. Food J.* 122, 3695–3709. doi: 10.1108/BFJ-01-2020-0075

Padel, S., and Foster, C. (2005). Exploring the gap between attitudes and behaviour: understanding why consumers buy or do not buy organic food. *Br. Food J.* 107, 606–625. doi: 10.1108/00070700510611002

Paul, J., and Rana, J. (2012). Consumer behavior and purchase intention for organic food. *J. Consum. Mark.* 29, 412–422. doi: 10.1108/07363761211259223

Pham, T. H., Nguyen, T. N., Phan, T. T. H., and Nguyen, N. T. (2019). Evaluating the purchase behaviour of organic food by young consumers in an emerging market economy. *J. Strateg. Mark.* 27, 540–556. doi: 10.1080/0965254X.2018.1447984

Pino, G., Peluso, A. M., and Guido, G. (2012). Determinants of regular and occasional consumers' intentions to buy organic food. *J. Consum. Aff.* 46, 157–169. doi: 10.1111/j.1745-6606.2012.01223.x

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88, 879–903. doi: 10.1037/0021-9010.88.5.879

Prakash, G., Singh, P. K., Ahmad, A., and Kumar, G. (2023). Trust, convenience and environmental concern in consumer purchase intention for organic food. *Span. J. Mark. - ESIC.* 27, 367–388. doi: 10.1108/SJME-09-2022-0201

Prakash, G., Singh, P. K., and Yadav, R. (2018). Application of consumer style inventory (CSI) to predict young Indian consumer's intention to purchase organic food products. *Food Qual. Prefer.* 68, 90–97. doi: 10.1016/j.foodqual.2018.01.015

Prentice, C., Chen, J., and Wang, X. (2019). The influence of product and personal attributes on organic food marketing. *J. Retail. Consum. Serv.* 46, 70–78. doi: 10.1016/j.jretconser.2017.10.020

Prochaska, J. O., and Diclemente, C. C. (1983). Stages and processes of self-change of smoking: toward an integrative model of change. *J. Consult. Clin. Psychol.* 51, 390–395. doi: 10.1037/0022-006X.51.3.390

Qi, X., Mou, J., Meng, C., and Ploeger, A. (2023). Factors influencing consumers' organic food continuous purchase intentions during the post-pandemic era: an empirical investigation in China. *Food Secur.* 12:1636. doi: 10.3390/foods12081636

Qi, X., Yu, H., and Ploeger, A. (2020). Exploring influential factors including COVID-19 on green food purchase intentions and the intention–behaviour gap: a qualitative study among consumers in a Chinese context. *Int. J. Environ. Res. Public Health* 17:7106. doi: 10.3390/ijerph17197106

Raj, V. A., Rai, S. S., and Jasrotia, S. S. (2024). Sustainable purchase intentions towards organic food during Covid-19 pandemic: an exploratory study on Indian consumers. *Soc. Responsib. J.* 20, 243–260. doi: 10.1108/SRJ-01-2022-0022

Rana, J., and Paul, J. (2020). Health motive and the purchase of organic food: a meta-analytic review. *Int. J. Consum. Stud.* 44, 162–171. doi: 10.1111/ijcs.12556

Ravand, H., and Baghaei, P. (2016). Partial least squares structural equation modeling with R. *Pract. Assess. Res. Evaluation* 21:11. doi: 10.1007/978-3-030-80519-7

Research and Markets (2023). China organic food market, size, forecasts report 2023–2028: Systemic production practices are key for driving growth. https://www.globenewswire.com/en/news-release/2023/05/23/2674563/28124/en/China-Organic-Food-Market-Size-Forecasts-Report-2023-2028-Systemic-Production-Practices-are-Key-for-Driving-Growth.html (Accessed September 5, 2023).

Ringle, C. M., and Sarstedt, M. (2016). Gain more insight from your PLS-SEM results: the importance-performance map analysis. *Ind. Manag. Data Syst.* 116, 1865–1886. doi: 10.1108/IMDS-10-2015-0449

Roh, T., Seok, J., and Kim, Y. (2022). Unveiling ways to reach organic purchase: green perceived value, perceived knowledge, attitude, subjective norm, and trust. *J. Retail. Consum. Serv.* 67:102988. doi: 10.1016/j.jretconser.2022.102988

Ruggiero, E., Mignogna, C., Costanzo, S., Persichillo, M., Di Castelnuovo, A., Esposito, S., et al. (2021). Changes in the consumption of foods characterising the Mediterranean dietary pattern and major correlates during the COVID-19 confinement in Italy: results from two cohort studies. *Int. J. Food Sci. Nutr.* 72, 1105–1117. doi: 10.1080/09637486.2021.1895726

Sadiq, M. A., Rajeswari, B., Ansari, L., and Kirmani, M. D. (2021). The role of food eating values and exploratory behaviour traits in predicting intention to consume organic foods: an extended planned behaviour approach. *J. Retail. Consum. Serv.* 59:102352. doi: 10.1016/j.jretconser.2020.102352

Septianto, F., and Kemper, J. A. (2021). The effects of age cues on preferences for organic food: the moderating role of message claim. *J. Retail. Consum. Serv.* 62:102641. doi: 10.1016/j.jretconser.2021.102641

Shafie, F. A., and Rennie, D. (2012). Consumer perceptions towards organic food. *Procedia. Soc. Behav. Sci.* 49, 360–367. doi: 10.1016/j.sbspro.2012.07.034

Shmueli, G., Sarstedt, M., Hair, J. F., Cheah, J.-H., Ting, H., Vaithilingam, S., et al. (2019). Predictive model assessment in PLS-SEM: guidelines for using PLSpredict. *Eur. J. Mark.* 53, 2322–2347. doi: 10.1108/EJM-02-2019-0189

Sohn, S., Seegebarth, B., and Woisetschläger, D. M. (2022). The same only different? How a pandemic shapes consumer organic food purchasing. *J. Consumer Behav.* 21, 1121–1134. doi: 10.1002/cb.2060

Su, Y., Khaskheli, A., Raza, S. A., and Yousufi, S. Q. (2022). How health consciousness and social consciousness affect young consumers purchase intention towards organic foods. *Manag. Environ. Qual.* 33, 1249–1270. doi: 10.1108/MEQ-12-2021-0279

Taghikhah, F., Voinov, A., Shukla, N., and Filatova, T. (2021). Shifts in consumer behavior towards organic products: theory-driven data analytics. *J. Retail. Consum. Serv.* 61:102516. doi: 10.1016/j.jretconser.2021.102516

Wang, C., Guo, J., Huang, W., Tang, Y., Li, R. Y. M., and Yue, X. (2024). Health-driven mechanism of organic food consumption: a structural equation modelling approach. *Heliyon* 10:e27144. doi: 10.1016/j.heliyon.2024.e27144

Wang, W., Mo, T., and Wang, Y. (2022). Better self and better us: exploring the individual and collective motivations for China's generation Z consumers to reduce plastic pollution. *Resour. Conserv. Recycl.* 179:106111. doi: 10.1016/j.resconrec.2021.106111

Wang, X., Pacho, F., Liu, J., and Kajungiro, R. (2019). Factors influencing organic food purchase intention in developing countries and the moderating role of knowledge. *Sustain. For.* 11:209. doi: 10.3390/su11010209

Williams, L. E., and Poehlman, T. A. (2017). Conceptualizing consciousness in consumer research. *J. Consum. Res.* 44, 231–251. doi: 10.1093/jcr/ucw043

Xu, X., Wang, S., and Yu, Y. (2020). Consumer's intention to purchase green furniture: do health consciousness and environmental awareness matter? *Sci. Total Environ.* 704:135275. doi: 10.1016/j.scitotenv.2019.135275

Yadav, R., and Pathak, G. S. (2016). Intention to purchase organic food among young consumers: evidences from a developing nation. *Appetite* 96, 122–128. doi: 10.1016/j.appet.2015.09.017

Yang, Q., Al Mamun, A., Hayat, N., Md Salleh, M. F., Salameh, A. A., and Makhbul, Z. K. M. (2022). Predicting the mass adoption of eDoctor apps during COVID-19 in China using hybrid SEM-neural network analysis. *Front. Public Health* 10:889410. doi: 10.3389/fpubh.2022.889410

Yang, Q., Al Mamun, A., Naznen, F., Siyu, L., and Makhbul, Z. K. M. (2023). Modelling the significance of health values, beliefs and norms on the intention to consume and the consumption of organic foods. *Heliyon* 9:e17487. doi: 10.1016/j.heliyon.2023.e17487

Yazdanpanah, M., and Forouzani, M. (2015). Application of the theory of planned behaviour to predict Iranian students' intention to purchase organic food. *J. Clean. Prod.* 107, 342–352. doi: 10.1016/j.jclepro.2015.02.071

Yin, S., Wu, L., Du, L., and Chen, M. (2010). Consumers' purchase intention of organic food in China. *J. Sci. Food Agric.* 90, 1361–1367. doi: 10.1002/jsfa.3936

Yu, H., Guchait, P., Achyldurdyyeva, J., and Paşamehmetoğlu, A. (2021). A multilevel investigation of the leadership factors on food safety promotive and prohibitive voices through food safety consciousness. *J. Hosp. Tour. Manag.* 47, 343–352. doi: 10.1016/j.jhtm.2021.04.007

Zheng, G. W., Akter, N., Siddik, A. B., and Masukujjaman, M. (2021). Organic foods purchase behavior among generation Y of Bangladesh: the moderation effect of trust and price consciousness. *Food Secur.* 10:2278. doi: 10.3390/foods10102278