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Trust, price sensitivity and consumers' organic food purchasing behaviour in China

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Abstract

Trust and prices are two factors of organic food purchasing intention and behaviour, which have been received more attention. However, the research of the former failed to address the role of trust in stakeholders, and findings of the latter did not make consistent. This study incorporates trust in producers, trust in retailers, and price sensitivity into an extended theory of planned behaviour (TPB) to examine their effects on consumers' organic food purchasing behaviour (OFP). We conducted an online survey and obtained data from 640 consumers in China to empirically test the model. The results show that the two types of trust play essential roles in OFP, and the impact of trust in retailers is stronger than that of trust in producers. Moreover, price sensitivity is a negative factor of OFP. Furthermore, trust in producers and trust in retailers significantly strengthen the relationships between OFP and its antecedents from the extended TPB model. In addition, price sensitivity acts as a negative moderator on the relationships between perceived behaviour control and OFP, as well as purchase intention and OFP, while the moderating effect of price sensitivity on the relationship between personal norms and OFP has not been established.

Keywords: trust; price sensitivity; organic food purchasing behaviour (OFP); the theory of planned behaviour (TPB).

Practical Application: Provide suggestions to promote the sale of organic food.

1 Introduction

In recent decades, there has been extensive growth in the global demand for organic food due to its environmental impact, safety, high quality, and fashionability (Činjarević et al., 2018; Sultan et al., 2020). For example, organic products such as dairy products and organic milk have gained significant visibility in the market (Rabelo et al., 2021). However, the organic food market remains a niche market (Willer & Lernoud, 2019), especially in emerging countries. For instance, the market share of organic foods and consumer spending in China is relatively low (Yu et al., 2014; Yu et al., 2020), though it is Asia's largest organic food market. Specifically, in 2018, the consumption of organic food in China accounted for only 8.3% of global organic food consumption (Willer & Lernoud, 2020). The per capita consumption of organic food is only 5.8 euros, less than half of the global per capita consumption (Liu et al., 2021).

Extensive literature has focused on the drivers of and barriers to consumers' organic food purchasing intention and behaviour (Aertsens et al., 2009; Golob et al., 2018; Testa et al., 2019), including psychological, product-related, and sociodemographic variables (Hansmann et al., 2020). For example, health concerns (Kriwy & Mecking, 2012), environmental values (Hansmann et al., 2020), food safety concerns (Nguyen et al., 2019; Ducdang & Giang., 2021), trust (Teng & Wang, 2015), price (Marian et al., 2014), income (Martins et al., 2021), gender and education levels (Di Vita et al., 2019) have been demonstrated as determinants of consumers' purchase intention of or behaviour towards organic food. Among these factors, lack of trust in organic food and high prices have been demonstrated to be critical barriers to organic food purchasing intention and behaviour (Carfora et al., 2019; Prentice et al., 2019; Ladwein & Sánchez Romero, 2021; Hwang & Chung, 2019).

Trust is recognised as a critical motivation among the motivations of organic food consumption (Truong et al., 2021). Organic food is considered typical credence good, and its quality is difficult to verify even after consumption (Caswell et al., 2002). Accordingly, extant studies have explored the influence of trust on OFP from the perspectives of system trust and personal trust (Carfora et al., 2019; Truong et al., 2021). System trust is universalistic, such as trust in products, labelling, certification processes or government procedures, which is the focus of most existing related studies (Fernqvist & Ekelund, 2014; Janssen & Hamm, 2012). Conversely, personal trust refers to consumers' relationships with different actors in the food system, such as authorities, agencies, producers and retailers (Truong et al., 2021). Multiple stakeholders deliver organic food under stricter controls than conventional food, which increases the complexity and difficulty for consumers to establish trust in organic food (Zhang et al., 2016). The trust in actors within the organic food chain can help consumers reduce the complexity of food purchase decisions under uncertainty and risk (Roosen et al., 2015). Thus, trust in stakeholders is vital to mitigate consumers' concerns about opportunism caused by information asymmetry (Choe et al., 2009). However, the trust of multiple stakeholders within the organic food supply chain has not been extensively

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examined (Carfora et al., 2019; Ladwein & Sánchez Romero, 2021). Although Carfora et al. (2019) and Ladwein & Sánchez Romero (2021) focused on consumers' trust in stakeholders of organic food, they explored the role of trust in their purchase intention but not their behaviour. It is noteworthy that purchase intention does not translate into actual behaviour (Morwitz et al., 2007), which means there is a gap between intention and actual behaviour (Hai et al., 2017). Therefore, it is necessary to investigate the relationship between trust in actors of the organic food chain and consumers' purchase behaviour to determine a motive for the actual consumption of organic food.

In addition, the precise effect of price on OFP is a much-debated topic (Lee et al., 2015; Schufele & Hamm, 2018). Most studies have suggested that price is one major obstacle in OFP, and the demand for organic food is more price-sensitive than that for conventional food (Tavares et al., 2021; Kasteridis & Yen, 2012; Schröck, 2013). However, other studies have confirmed that a decline in organic food prices does not increase demand (Zhang et al., 2011; Akaichi & Revoredo-Giha, 2016). The inconsistent conclusions may be attributed to the heterogeneity of consumers, such as their different levels of price sensitivity (Schufele & Hamm, 2018). The price sensitivity of consumers to organic foods has been studied by scholars recently (Wang et al., 2020; Ishaq et al., 2021). They explored the influence of price sensitivity on organic food purchase attitudes and purchase intentions (Lee et al., 2015; Ghali-Zinoubi & Toukabri, 2019). In addition, the moderating role of price sensitivity has been demonstrated in multiple relationships, such as the relationship between health motives and purchase attitude (Lee et al., 2015), social norms and organic food purchase intention (Lee et al., 2015), and perceived food quality and organic food purchase intention (Wang et al., 2020). Nevertheless, previous studies have failed to explore the effect of price sensitivity on consumers' purchase behaviour of organic food. None of them had sufficient consideration of the potential moderating role of price sensitivity on the relationships between other factors and OFP.

To fill the literature gap, we focus on the role of consumers' trust in retailers, trust in producers and price sensitivity in OFP in this study. We incorporate these three constructs into an extended theory of planned behaviour (TPB) model, and use the data obtained from a survey of Chinese consumers to empirically test the model. This study seeks to better understand OFP by answering questions as follows: what are the effects of trust in retailers, trust in producers and price sensitivity on consumers' OFP? What are the mechanisms of these three constructs on the relationships between OFP and its antecedents from the extended TPB? What specific measures should be taken to motivate consumers to purchase organic food?

2 Literature Review and hypothesis development

2.1 The theory of planned behaviour (TPB)

The TPB is a mature model that explores the determinants of individuals' behaviour. The model proposes that attitudes, subjective norms, and perceived behaviour control (PBC) determine the individual's intentions, which in turn leads to behaviour (Ajzen, 1991). Attitudes are consequential beliefs from the influence of specific behaviour; subjective norms refer to the normative beliefs induced by the social pressure of a particular behavioural intention; PBC is governed by people's judgement and control over the difficulty of behaviour. The TPB also assumes that PBC affects behaviour directly (Ajzen, 1991; Mohamed et al., 2016).

Although the TPB has been applied widely in various research areas, neglecting the moral dimension (Klöckner, 2013) and the existing attitude-behaviour gap (Zhang et al., 2019a; Liao & Yang, 2021) are two defects that have been criticised. Thus, some scholars (Bamberg & Möser, 2007; Prentice et al., 2019) suggested that the subjective normal should be incorporated with personal norms to understand the effect of normative beliefs further and improve the model's explanatory power (Lorenz et al., 2017). Personal norms refer to a feeling of moral obligation to perform or not perform a specific behaviour (Schwarz, 1977).

The TPB and the extended TPB incorporating personal norms have effectively been applied in organic food consumption (Aertsens et al., 2009). For example, PBC has been confirmed to directly affect organic food consumption behaviour (Ogorevc et al., 2020). Furthermore, personal norms are confirmed as significant predictors of organic food consumption intention or behaviour (Koklic et al., 2019). Accordingly, we chose the extended TPB incorporating personal norms as our basic model. Thus, we proposed the following hypotheses:

H1: PBC has a positive impact on OFP.

H2: Personal norms have a positive impact on OFP.

H3: Intention has a positive impact on OFP.

2.2 Trust

Trust generally refers to positive expectations of others' behaviours or intentions (Rousseau et al., 1998). It is a crucial factor in consumers' purchase behaviours (Ali et al., 2021), especially for organic food, whose authenticity cannot be verified by ordinary consumers, even after consumption (Janssen & Hamm, 2012). Prior studies have identified two main levels of trust in organic food consumption: personal trust and system trust (Carfora et al., 2019), yet the former lacks sufficient attention. This is because organic food is delivered by different stakeholders (e.g., farmers, manufacturers, and retailers), who are involved in the process of production, distribution, monitoring and consumption (Zhang et al., 2016). In this vein, trust can also be regarded as embedded social relationships between consumers and organic food chain actors, formed in the process of consumption (Kjærnes, 2012). Therefore, we focus on the role of consumers' trust in the key actors of the organic food chain, namely, organic food producers and retailers.

One thing that concerns consumers most is whether the food is organic when they make a purchase decision (Hwang & Chung, 2019). Some studies have emphasised the role of trust in producers in organic food purchasing intention. For example, Nuttavuthisit & Thøgersen (2017) found that consumers' trust in producers positively influences their organic food buying intentions. Similarly, Carfora et al. (2019) suggested that trust

in farmers positively affects consumers' consumption intention of organic milk. In contrast, Ladwein & Sánchez Romero (2021) revealed that trust in producers has no significant effect on purchasing organic food. If consumers feel the producers are credible, they will trust that the food has been produced organically and contain the ingredients that the producers have promised (Ladwein & Sánchez Romero, 2021). Consequently, consumers will be more likely to purchase the organic food they produce. Therefore, we propose the following:

H4: Trust in producers positively impacts OFP.

Retailers are market actors who directly contact consumers in the indirect distribution channel (Ladwein & Sánchez Romero, 2021). Trust in retailers could simplify food choices by reducing the complexity and uncertainty of the purchasing process (Khare & Pandey, 2017). The effects of trust in retailers on organic food purchase intention have been explored in prior studies, with inconsistent results, and need further examination. Some research has found that consumers' confidence in retailers significantly promotes their organic food purchase intention (Khare & Pandey, 2017). However, other studies found a nonsignificant effect, as expected (Carfora et al., 2019). Consumers tend to buy products from the retailers they trust to minimise potential risks and obtain consistent quality products (Zhang et al., 2016). Therefore, we propose the following hypothesis:

H5: Trust in retailers positively impacts OFP.

2.3 Price sensitivity

Price sensitivity is defined as how consumers' buying behaviour is affected by changes in product prices (Zepeda & Deal, 2009). Price sensitivity may explain the inconsistent effect of price on organic food consumption (Schufele & Hamm, 2018). Consumers with high price sensitivity may regard price as the primary consideration in purchasing decisions (Wang et al., 2020). The more price-sensitive consumers are, the less likely they will buy organic foods, which are usually more pricey than conventional food (Ghali-Zinoubi & Toukabri, 2019). In contrast, price-insensitive consumers may be attracted by nonprice factors of organic food, such as food quality, safety, trust or personal norms (Wang et al., 2020). If they are satisfied with these attributes of organic food, they tend to purchase organic food, ignoring its premium. Thus, we propose the following hypothesis:

H6: Price sensitivity has a negative impact on OFP.

2.4 Moderating effect

The literature suggests that trust can influence the relationships between OFP and its antecedents (Zheng et al., 2021), such as introjected regulation, PBC and purchase intention. For example, Tandon et al. (2020) demonstrated that trust significantly moderates introjected regulation and OFP. Similarly, some studies revealed that trust could promote the translation of PBC (Sultan et al., 2020) and intention (Sultan et al., 2020; Zheng et al., 2021) into the actual OFP. However, none of the above studies focused on trust in stakeholders within the organic food chain (Ladwein & Sánchez Romero, 2021). Theoretically, if consumers establish a higher trust in producers and retailers of organic food, they will be more likely to conform to their personal norms. They can obtain more transparency from producers and retailers (Ladwein & Sánchez Romero, 2021). At the same time, trust in producers and retailers may be an effective intervention factor to mitigate barriers and strengthen the effect of consumers' PBC and intentions on their purchasing behaviour (Sultan et al., 2020). Thus, this study proposes the following:

H7a: Trust in producers strengthens the relationship between intention and OFP.

H7b: Trust in producers strengthens the relationship between PBC and OFP.

H7c: Trust in producers strengthens the relationship between personal norms and OFP.

H8a: Trust in retailers strengthens the relationship between intention and OFP.

H8b: Trust in retailers strengthens the relationship between PBC and OFP.

H8c: Trust in retailers strengthens the relationship between personal norms and OFP.

Some studies have explored whether price sensitivity has a moderating effect on the relationship between health motivation and attitude, social norms, environmental consciousness, perceived food quality and organic food purchase intention (Lee et al., 2015; Wang et al., 2020). Moreover, consumers with high price sensitivity regard the premium price of organic food as a significant obstacle, hindering the translation of their personal norms, PBC, and purchase intention into actual behaviour. In contrast, if consumers are price-insensitive, they will be concerned about the other attributes of organic food except for prices, such as freshness, nutrition, taste, and safety (Boobalan & Nachimuthu, 2020). Consequently, these advantages of organic food will promote PBC, personal norms and intentions to translate into actual behaviour. Thus, we propose the following:

H9a: Price sensitivity weakens the relationship between intention and OFP.

H9b: Price sensitivity weakens the relationship between PBC and OFP.

H9c: Price sensitivity weakens the relationship between personal norms and OFP.

2.5 The research framework

The research framework is shown in Figure 1. We applied the extended TPB with personal norms as a basic model for effective explanatory power. Then, trust in producers, trust in retailers, and price sensitivity were incorporated into the extended TPB to explore the role of trust and price sensitivity in consumers' organic food purchase behaviour. In addition, we examined the moderating role of trust and price sensitivity, aiming to explore

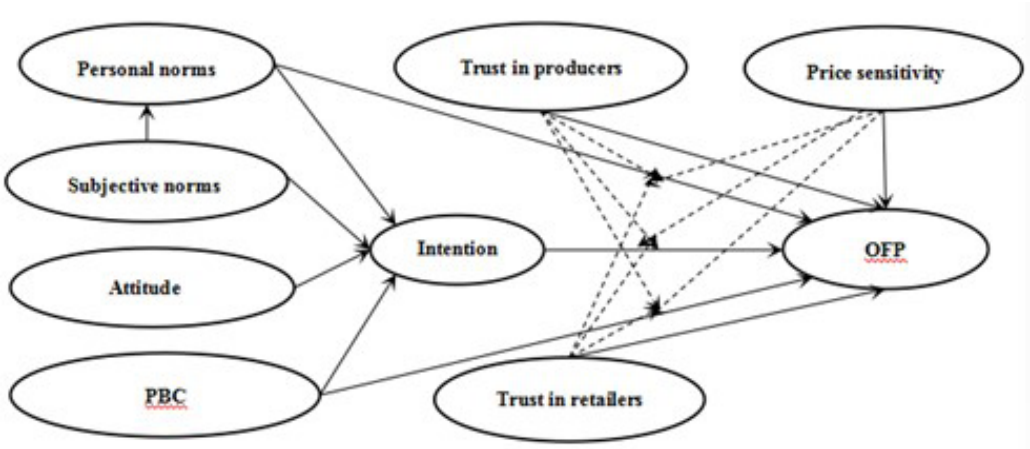

Figure 1. The research framework of consumers' organic food consumption behaviour.

whether the effect of personal norms, PBC and intention are contingent upon consumers' trust and price sensitivity.

3 Data and methodology

3.1 Sample and data collection

The survey was carried out in Beijing, Shanghai and Guangdong from July to August 2021. The selected areas are the most developed regions and China's main organic food markets. Moreover, these three regions are located in northern, eastern, and southeastern China, so the residents there represent different regional cultures and consumption habits. The target respondents were consumers over 18 years of age.

We conducted a pretest of 70 samples to test the scale before the formal investigation. We issued the questionnaire through the Wenjuanxing platform in the formal investigation phase. Wenjuanxing platform conducted online questionnaires on consumers in three regions. Wenjuanxing (https://www.wjx.cn/) is the most professional and extensive online survey company in China; whose registered members are more than 28.7 million (Wang et al., 2019; Liao & Xing, 2022). On average, it took respondents 10-15 minutes to complete a questionnaire. Wenjuanxing platform technicians checked the returned questionnaires and submitted qualified questionnaires to authors. The authors checked the standardization and quality of those questionnaires again. Each respondent who submitted a qualified questionnaire was paid approximately $3. Ultimately, we obtained 640 valid questionnaires from a total of 979.

Table 1 presents the sample profile. Among the 640 respondents, women accounted for approximately 57.8%, and men accounted for 42.2%. Eighty-six percent of the respondents were between 20-40 years old. Nearly 80% of the respondents had a bachelor's degree or above. The monthly income of the respondents was mainly concentrated in the range of 5,000 RMB ($705) to 10,000 RMB ($1410).

Table 1. Demographic profile of respondents.

Characteristic	Demographic	Frequency	Percentage (%)
Gender	Female	370	57.8
	Male	270	42.2
Marital status	Single	236	36.9
	Married	404	63.1
Age(years)	20 and below	34	5.3
	21-30	321	50.2
	31-40	229	35.8
	41-50	41	6.4
	51 and above	15	2.3
Educational	Senior high or below	35	5.5
	Associate degree	104	16.3
	Bachelor degree	455	71.1
	Masters degree or above	46	7.2
Income(monthly)	Less than ¥5000($705)	104	16.3
	¥5,000($705)-¥10,000($1410)	258	40.3
	¥10000($1410)-¥15000($2115)	162	25.3
	¥15000($2115)-¥20000($2820)	77	12.0
	More than ¥20000($2820)	39	6.1
Population (household)	2 and below	66	10.3
	3	254	39.7
	4	158	24.7
	5	108	16.9
	6 and above	54	8.4
City	Beijing	123	19.2
	Shanghai	136	21.3
	Guangdong	381	59.5
Total		**640**	**100**

3.2 Measures

The questionnaire in this paper includes two sections. The demographic characteristics of the respondents are investigated in the first part. Trust, price sensitivity, OFP, and other constructs in our model are presented in the second part.

In addition, we gave a brief guidance to respondents and attached the certification logos of organic food. Photos of some organic foods which could be found in the market were also added. The function of the guidance and photos was to avoid misunderstanding which comes from respondents who lack knowledge about organic food. The guidance only introduced the main categories of organic food. We specifically indicated that organic food includes organic processed food and organic plant-based food. Organic processed products included organic milk, organic milk powder, organic wine, etc. Organic food products mainly included organic grains, organic vegetables and organic fruits. We did not elaborate on the specific benefits of organic food to avoid interference with respondents' follow-up answers. The organic food photos listed in Figure 2. can make respondents more intuitive of the organic food they may contact in their lives.

In the second part, most items of the constructs were adapted from prior scales, with appropriate modification. Specifically, the scales of attitude (Wang et al., 2021), subjective norms (Carfora et al., 2019; Ahsan et al., 2020), PBC (Carfora et al., 2019; Ahsan et al., 2020), purchase intention (Nguyen et al., 2021), and OFP (Lee, 2008; Rausch & Kopplin, 2021; Singh & Verma, 2017) were all adapted from previous related research.

Items of personal norms were modified based on the scale of Koklic et al. (2019). Items for trust in producers and trust in retailers were adapted from the work of Ladwein & Sánchez Romero (2021). Price sensitivity was measured based on the items of Wang et al. (2020) and Ghali-Zinoubi & Toukabri (2019). All the construct items are measured by five-point Likert scales, with "5" representing "strongly agree" and "1" representing "strongly disagree".

3.3 Analytical techniques

We analysed the data by constructing the structural equation model (SEM) and partial least squares (PLS). SEM, as a statistical modeling method, was proposed by Sorbom & Joreskog in the 1970s (Bollen & Long, 1993). SEM analysis is primarily used to prove relevant hypotheses about variances, observed means and covariances of a set of variables. SEM-PLS is an effective iterative estimation method, which combines multiple regression and principal component analysis and it is suitable for multiple correlation modeling of latent variables. (Zhang et al., 2019b). Moreover, PLS-SEM was chosen for the following reasons. First, it does not need data to be a normal distribution (Fornell & Bookstein, 1982). Second, it is suitable for complex models, such as models with moderation and/or mediation variables (Hair et al., 2014; Astrachan et al., 2014). Third, the established theory in PLS-SEM can introduce flexibility from new latent variables and new relationships (Richter et al., 2016), which is fully applicable to our research. The model was tested by SmartPLS version 3.0, and the statistical significance was tested using the bootstrap resampling method (5000 resamplings).

4 Data analysis and results

4.1 Common method variance and descriptive statistics

We applied the Harmen single factor test to evaluate the common method variance (CMV) (Schwarz et al., 2017).

Figure 2. Photos shown to respondents.

The results showed that the first factor in the factor analysis explained 31.88% of the total variance, less than the threshold of 50% (Harman, 1967), indicating no severe threat from the CMV. Therefore, the CMV did not pose a severe threat to our data.

The descriptive statistics show that trust in producers (mean = 3.544, SD = 0.719) is slightly higher than trust in retailers (mean = 3.518, SD = 0.686). Organic food purchasing intention (mean = 4.050, SD = 0.583) is significantly greater than OFP (mean = 3.479, SD = 0.725), indicating the gap between intention and behaviour. Price sensitivity is the lowest (mean = 2.495, SD = 0.762) among all constructs.

Descriptive statistics of the sample show that health concern (mean = 3.969, SD = 0.723) is a little bit higher than environmental concern (mean = 3.956, SD = 0.684). Attitude (mean = 3.777, SD = 0.631) toward organic purchasing is higher than OFP (mean = 3.594, SD = 0.756), indicating the existence of attitude-behavior gap.

4.2 The measurement model

As Table 2 shows, Cronbach's alpha and composite reliability (CR) were conducted to check the reliability of the constructs. The results show that the CR and Cronbach's alpha values are above the cut-off value of 0.7, indicating the high internal consistency of the scale (Nunnally, 1978).

We used standardised factor loading and average variance extraction (AVE) to test convergent validity (Hair et al., 2011), referring to whether each item reflects the same construct. The results show that the standardised loadings of most items are higher than the threshold of 0.7. Two exceptions are PS1 and INT2, whose loadings are close to 0.7, meeting the basic requirements (Hair et al., 2014). In addition, AVE values are higher than the suggested value of 0.5, indicating sufficient convergence validity.

The Fornell and Larcker criterion and Heterotrait-monotrait (HTMT) ratio are used to evaluate the discriminant validity

Table 2. Reliability and validity tests of the constructs.

Construct	VIF	Items	Standard loadings	Cronbach's α	CR	AVE
ATT	1.579	I think there is a big difference between organic food consumption and ordinary consumption.	0.788	0.784	0.873	0.697
	1.741	I think organic food consumption is a very meaningful thing for environmental protection.	0.868			
	1.613	I think organic food consumption is closely related to my life.	0.846			
PBC	1.900	Whether or not I purchase organic food is entirely up to me.	0.860	0.817	0.892	0.733
	2.100	I have the resources, time or opportunity to buy organic food.	0.889			
	1.635	I can easily buy organic food if I want to.	0.818			
SN	1.398	I feel under social pressure to purchase organic food.	0.799	0.764	0.852	0.658
	1.539	People who are important to me think I should purchase organic food.	0.818			
	1.503	People who are important to me approve of my organic food purchase.	0.818			
PN	1.772	I feel I have an ethical obligation to buy organic food.	0.856	0.808	0.886	0.722
	1.767	I feel an obligation to choose organic food.	0.841			
	1.731	I feel I should choose organic food instead of conventional food.	0.853			
PS	1.290	When I buy organic food, the price is not important.	0.698	0.737	0.769	0.656
	1.744	I spend without looking at prices.	0.859			
	1.630	It is acceptable to pay more for organic food than conventional food.	0.862			
TIP	1.504	The producers of organic food are genuine.	0.827	0.722	0.844	0.643
	1.346	The producers of organic food are ethical.	0.776			
	1.437	The producers of organic food are honest.	0.801			
TIR	1.814	I trust in organic food retailer.	0.856	0.811	0.888	0.725
	1.747	I rely on organic food retailer.	0.837			
	1.765	This is an honest organic retailer.	0.862			
INT	1.414	I will consider buying organic food.	0.760	0.722	0.828	0.547
	1.316	I am willing to buy organic food instead of conventional meat while shopping.	0.695			
	1.326	I intend to purchase organic food.	0.703			
	1.478	I will make an effort to buy organic food in my next purchase.	0.793			
OFP	1.527	I have been a regular buyer of organic food.	0.777	0.767	0.851	0.589
	1.599	I still buy organic food instead of conventional food if the quality is comparable.	0.809			
	1.538	I nerver mind purchasing organic food even if they are more expensive than conventional food.	0.779			
	1.335	When buying food, I pay attention that they are organic.	0.702			

Note: (1) CR is short for Composite Reliability; (2) AVE is short for Average Variance Extracted. ATT = Organic food attitude; PBC = Perceived behavioural control; SN = Subjective norms; PN = Personal norms; PS = Price sensitivity; TIP = Trust in producers; TIR = Trust in retailers; INT = Organic food purchasing intention; OFP = Organic food purchasing behaviour.

(Henseler et al., 2015). Table 3 shows that the correlations of different constructs are less than the square root of their own AVE value (Degirmenci & Breitner, 2017). Table 4 shows that all the values of the HTMT ratio are lower than 0.9. The results indicate the discriminant validity for each construct.

4.3 Path relationship evaluations

The results of the test are shown in Figure 3 and Table 5. As expected, PBC ($\beta = 0.152$, $p < 0.001$), personal norms ($\beta = 0.231$, $p < 0.001$), and intention ($\beta = 0.244$, $p = 0.017$) have a positive influence on consumers' organic food purchase behaviour, which supports H1, H2 and H3. Furthermore, trust in producers ($\beta = 0.095$, $p = 0.017$) and trust in retailers ($\beta = 0.129$, $p = 0.003$) positively affect consumers' OFP. In addition, price sensitivity ($\beta = -0.208$, $p < 0.001$) negatively affects OFP, thereby supporting H4, H5 and H6.

4.4 Predictive relevance of the model

The predictive relevance of the structural model is mainly evaluated by determination coefficient and cross-validated redundancy (Hair et al., 2011). The model's overall prediction strength is measured by R^2. The magnitude of the effect of R^2 depends on the following threshold values (Schwarz et al., 2017): small effect size when $R^2 = 0.3$, medium effect size when R^2 from 0.3 to 0.6 and large effect size when $R^2 = 0.60$. The R^2 of personal norms, intention and OFP were all between 0.3 and 0.6, indicating a medium effect size.

Then, the blindfold technique was used to calculate the Stone-Geisser-Criterion (Q^2), which is the indicator of the model's relative predictive relevance (Geisser, 1974; Stone, 1974). Hair et al. (2011) believed that if Q^2 is above zero, the predictive accuracy of the path model is considered acceptable. Precisely, small effect size when $Q^2 = 0.02$, medium effect size $Q^2 = 0.15$ and large effect size when $Q^2 = 0.35$ (Sarstedt et al., 2014). We find that the Q^2 of personal norms, intention and OFP are all greater than 0.15 and less than 0.35, indicating a medium effect size. The appendix shows the results of R^2 and Q^2.

4.5 The moderating effect of trust and price sensitivity

According to Chin et al. (2003), we calculated all interaction indicators while adding them to the model. Table 6 shows that

Table 3. Correlations and square roots of AVEs. (Fornell-Larcker criterion).

	ATT	PBC	SN	PN	PS	TIP	TIR	INT	OFP
ATT	0.835								
PBC	0.360	0.856							
SN	0.576	0.370	0.811						
PN	0.574	0.326	0.575	0.850					
PS	-0.482	-0.351	-0.531	-0.493	0.810				
TIP	0.481	0.372	0.498	0.462	-0.523	0.802			
TIR	0.478	0.384	0.471	0.454	-0.525	0.676	0.852		
INT	0.575	0.469	0.566	0.545	-0.498	0.453	0.437	0.739	
OFP	0.596	0.491	0.637	0.592	-0.601	0.553	0.560	0.630	0.768

Note: The diagonal (bold) elements are the square roots of AVEs, and the off-diagonal elements are the correlations among constructs. ATT = Organic food attitude; PBC = Perceived behavioural control; SN = Subjective norms; PN = Personal norms; PS = Price sensitivity; TIP = Trust in producers; TIR = Trust in retailers; INT = Organic food purchasing intention; OFP = Organic food purchasing behaviour.

Table 4. Heterotrait-Monotrait Ratio (HTMT) and Confidence Interval.

	ATT	PBC	SN	PN	PA	TIP	TIR	INT
PBC	0.440 [0.351,0.530]							
SN	0.745 [0.677,0.808]	0.472 [0.382,0.558]						
PN	0.716 [0.652,0.776]	0.400 [0.301,0.494]	0.741 [0.667,0.804]					
PA	0.623 [0.538,0.702]	0.443 [0.350,0.532]	0.715 [0.626,0.798]	0.663 [0.554,0.705]				
TIP	0.635 [0.551,0.715]	0.484 [0.384,0.575]	0.680 [0.579,0.768]	0.605 [0.519,0.686]	0.725 [0.644,0.803]			
TIR	0.594 [0.514,0.670]	0.468 [0.376,0.551]	0.605 [0.509,0.695]	0.557 [0.484,0.631]	0.682 [0.610,0.752]	0.883 [0.818,0.903]		
INT	0.750 [0.684,0.818]	0.613 [0.530,0.694]	0.771 [0.702,0.839]	0.710 [0.629,0.791]	0.670 [0.585,0.764]	0.628 [0.541,0.711]	0.571 [0.487,0.649]	
OFP	0.765 [0.701,0.825]	0.615 [0.540,0.690]	0.844 [0.764,0.917]	0.750 [0.683,0.812]	0.787 [0.708,0.856]	0.741 [0.664,0.819]	0.706 [0.630,0.774]	0.843 [0.780,0.907]

Note: The diagonal (bold) elements are the square roots of AVEs, the off-diagonal elements are the correlations among constructs and the confidence interval of the value is in parentheses. ATT = Organic food attitude; PBC = Perceived behavioural control; SN = Subjective norms; PN = Personal norms; PS = Price sensitivity; TIP = Trust in producers; TIR = Trust in retailers; INT = Organic food purchasing intention; OFP = Organic food purchasing behaviour.

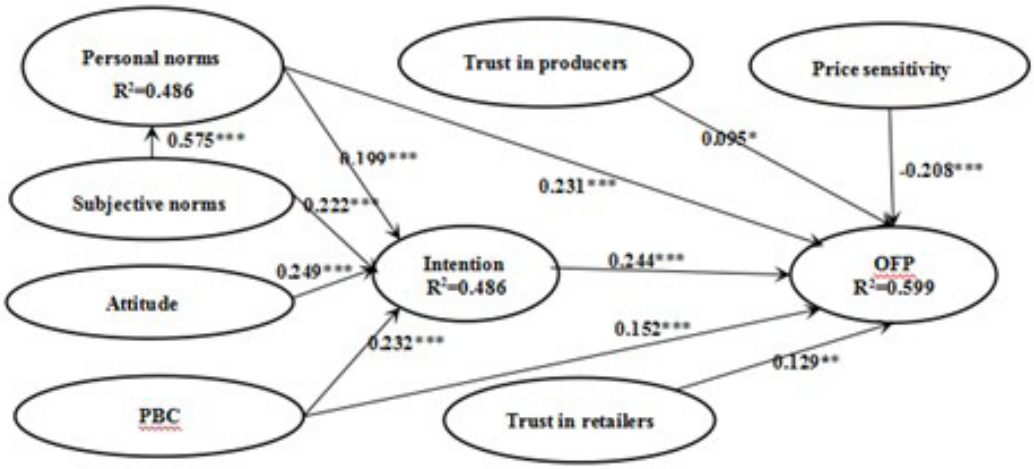

Figure 3. Results of the structural model.

Table 5. Results of hypothesis testing.

Relationship		β	*t-statistic*	L.L.	U.L.	Support
H1	PBC → OFP	0.152***	4.561	0.084	0.214	YES
H2	PN→ OFP	0.231***	5.830	0.135	0.271	YES
H3	INT → OFP	0.244***	6.518	0.166	0.310	YES
H4	TIP→ OFP	0.095*	2.382	-0.279	-0.137	YES
H5	TIR → OFP	0.129**	2.959	0.016	0.174	YES
H6	PS → OFP	-0.208***	5.617	0.049	0.217	YES

Note: *p < 0.05. **p < 0.01. ***p < 0.001. PBC = Perceived behavioural control; PN = Personal norms; PS = Price sensitivity; TIP = Trust in producers; TIR = Trust in retailers; INT = Organic food purchasing intention; OFP = Organic food purchasing behaviour.

Table 6. The results of the moderating effect.

Moderator variable	Interacting	Dependent variable	β	*p*	Support
TIP	TIP*INT	OFP	0.079**	0.003	Yes
TIP	TIP*PBC	OFP	0.070**	0.004	Yes
TIP	TIP*PN	OFP	0.092***	0.000	Yes
TIR	TIR*INT	OFP	0.083**	0.003	Yes
TIR	TIR*PBC	OFP	0.084*	0.005	Yes
TIR	TIR*PN	OFP	0.088**	0.001	Yes
PS	PS*INT	OFP	-0.109*	0.011	Yes
PS	PS*PBC	OFP	-0.087*	0.030	Yes
PS	PS*PN	OFP	-0.071	0.188	No

Note: *p < 0.05.**p < 0.01. *** p < 0.001. PBC = Perceived behavioural control; PN = Personal norms; PS = Price sensitivity; TIP = Trust in producers; TIR = Trust in retailers; INT = Organic food purchasing intention; OFP = Organic food purchasing behaviour.

trust in producers and trust in retailers significantly strengthen the relationships between personal norms, PBC, intention and OFP. Specifically, the greatest moderating effect is trust in producers (β = 0.092, p < 0.001) on personal norms and OFP, which is significant at the 1% level. Meanwhile, price sensitivity was confirmed to weaken the effect of PBC (β = -0.087, p < 0.05) and intention (β = -0.109, p < 0.05) on OFP. However, the moderating effect of price sensitivity on the relationship between personal norms and OFP was not supported. These findings are shown in Table 6 and Figure 4. Therefore, H7 to H9 are supported, except for H9c.

5 Discussion

The results indicated that trust in producers and trust in retailers play essential roles in OFP. These findings are consistent with Truong et al. (2021), who supported that trust in food actors is a critical determinant of organic food choice. Specifically, the impact of trust in retailers on OFP is stronger than that of trust in producers. A possible explanation might be the distancing effect between consumers and producers (Ladwein & Sánchez Romero, 2021). Organic food is mainly distributed through indirect channels in China, such as supermarkets

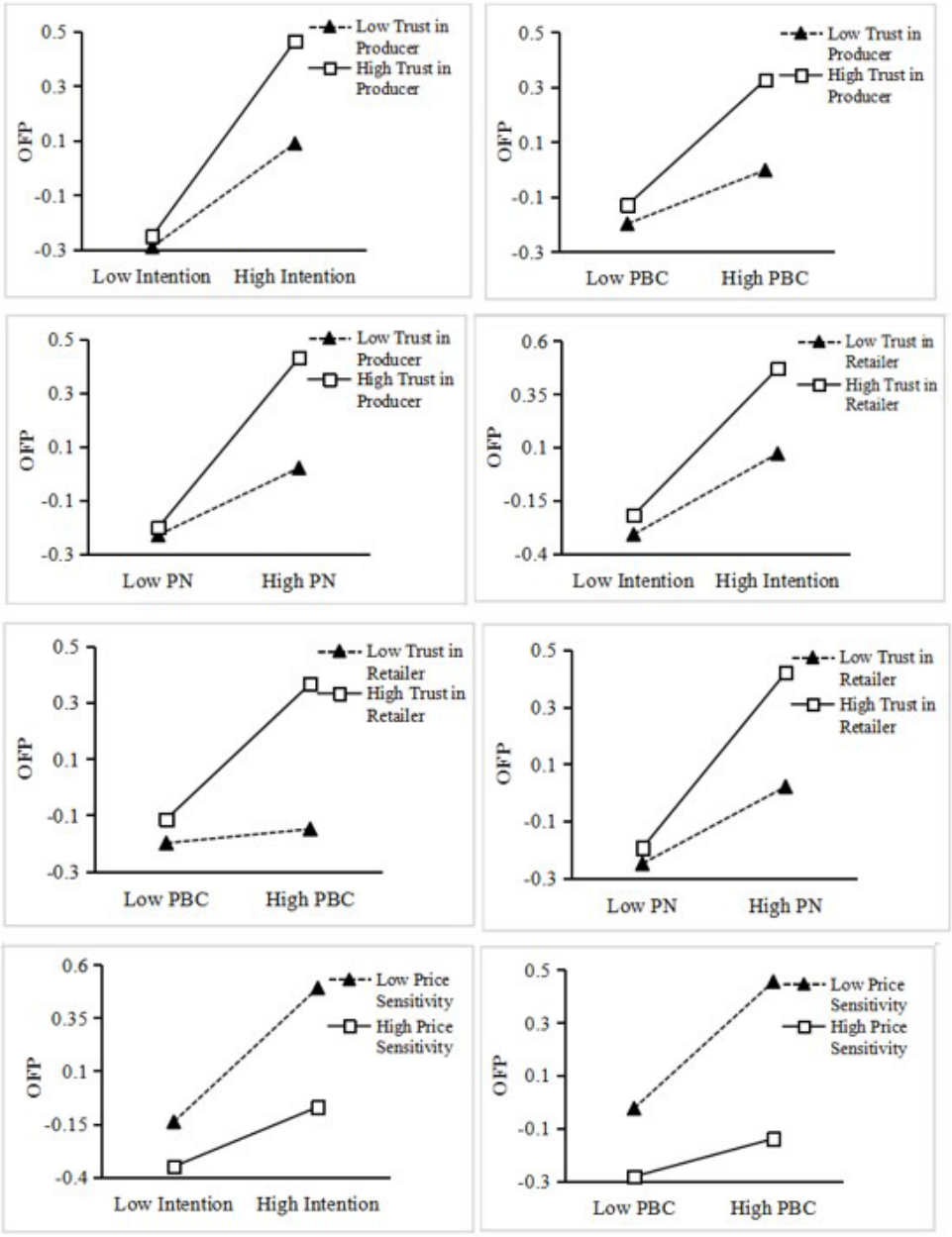

Figure 4. a) Moderation effect of trust in producer on the relationship between consumption intention and OFP. b) Moderation effect of trust in producer on the relationship between PBC and OFP. c) Moderation effect of trust in producer on the relationship between PN and OFP. d) Moderation effect of trust in retailer on the relationship between consumption intention and OFP. e) Moderation effect of trust in retailer on the relationship between PBC and OFP. f) Moderation effect of trust in retailer on the relationship between PN and OFP. g) Moderation effect of price sensitivity on the relationship between consumption intention and OFP. h) Moderation effect of price sensitivity on the relationship between PBC and OFP.

or speciality stores (Hamzaoui-Essoussi et al., 2013). In this context, consumers have more direct contact with retailers than producers. Consequently, trust in retailers has a stronger effect. Another potential reason might be related to the theory of trust transfer (Zhao et al., 2019), which can explain how trust transfers between the different actors within the chain of organic food. Consumers' trust in a specific organic producer would influence their trust in the retailer. Therefore, the effect of trust in retailers is the cumulative result of its own trust and trust in producers.

The results also show that trust in producers and retailers strengthens the effects of PBC, personal norms and purchase intention on OFP. Trust in stakeholders may make consumers believe the attributes of organic food, such as authenticity, reliability, and high quality. In other words, trust reduces consumers' perceived risks and increases their perceived benefits (Zhang et al., 2018). Therefore, the greater they trust producers and retailers, their PBC, personal norms, and purchase intention are more likely to translate into actual behaviours. This finding is consistent with the study of Sultan et al. (2020), which verified that trust

could strengthen the relationships between PBC, intention and behaviour. However, they did not distinguish the different types of trust. Interestingly, we found that the most significant moderating effects are on the relationship between personal norms and behaviour for each type of trust. These results indicate that consumers with a higher level of trust are more likely to believe that organic food can meet their quality and ethical requirements (Azzurra et al., 2019). Hence, they can perform their personal norms and make purchase decisions following their moral obligation without considering confusing factors.

Third, price sensitivity is a negative factor of OFP. Specifically, the higher the price sensitivity of consumers is, the greater the emphasis on price factors in the consumer decision-making process (Sultan et al., 2020). Consumers with high price sensitivity may think that organic products' benefits (e.g., high quality, good taste, environmentally friendly) do not match the price, hindering their purchasing behaviour. In contrast, consumers with low price sensitivity may highlight the benefits of organic food and neglect the premium. Therefore, the premium price of organic food is unlikely to be regarded as a purchase barrier for them. These results further support Ghali-Zinoubi & Toukabri's (2019) findings, who proposed that the likelihood of a consumer purchasing an organic product will decrease as his price sensitivity increases.

Finally, price sensitivity weakens the relationships between PBC-OFP and intention-OFP. These findings can be explained by the fact that consumers with high price sensitivity may be more concerned about the premium price of organic food, which increases their perceived price barriers and hinders the translation of PBC and intention to behave. Additionally, these results highlighted that consumers' price sensitivity is one of the crucial factors to consider and the absolute price of organic food. However, the moderating effect of price sensitivity is insignificant on the relationship between personal norms and OFP. These results indicate that as a sense of moral obligation (Schwarz, 1977), personal norms have a relatively stable impact on OFP, regardless of the level of consumers' price sensitivity.

6 Conclusion and implications

6.1 Conclusion

There are several conclusions that we can draw from this study. First, trust in producers and trust in retailers play essential roles in OFP. Specifically, the impact of trust in retailers is stronger than that of trust in producers due to the distancing effect and trust transfer theory. Second, trust in producers and retailers strengthens the effects of PBC, personal norms and purchase intention on OFP. Third, price sensitivity is a negative factor of OFP. Finally, price sensitivity weakens the relationships between PBC and OFP, as well as intention and OFP, but has no significant moderating effect on personal norms and OFP.

6.2 Theoretical implications

This research contributes to the literature on organic food in three ways. First, unlike most prior research that focused on purchase intention (e.g., Ghali-Zinoubi & Toukabri, 2019; Wang et al., 2020), we highlighted the role of trust and price sensitivity in determining consumers' organic food purchase behaviour. This is helpful to clarify the determinants of OFP and narrow the gap between intention and the actual behaviour of organic food purchase.

Second, this research extends the knowledge of the effect of trust on OFP. Previous research emphasised trust in products, labelling, or certification processes but seldom paid attention to trust in multiple stakeholders simultaneously (Ladwein & Sánchez Romero, 2021). We explored the effects of consumers' trust in two main actors (the producers and retailers) within the organic food chain on OFP. Moreover, the moderating effect of the two types of trust has been demonstrated, which is not yet fully understood (Tandon et al., 2020; Sultan et al., 2020).

Finally, the present study sheds new light on the effect of price sensitivity. Specifically, the findings of our study showed a significant negative impact of price sensitivity on OPP. In addition, we also revealed that price sensitivity moderates the effects of some OFP antecedents, such as purchase intention and PBC. In other words, the impacts of purchase intention and PBC on OFP will be contingent on the level of consumers' price sensitivity.

6.3 Practical implications

This research sheds light on consumers' organic food purchases, which is beneficial to actors in the organic food chain, such as producers, retailers and governments.

First, organic food producers and retailers must pay attention to establishing consumers' trust. The quality of organic food is primarily determined by the production and control process of the producer. As a result, producers should demonstrate supply transparency and strengthen communication with consumers. For example, they can show organic food production methods, locations, and production processes to consumers through the internet, new media, or face-to-face to enhance trust. Moreover, shortening the distribution channel is another effective measure for producers. For instance, they can interact socially with consumers through farmers' markets, factory-outlet stores and online channels, answering questions about their food origin, production methods, and variety (Smithers et al., 2008). As intermediaries between producers and consumers, retailers should choose credible organic food suppliers and ensure the traceability of organic food. More importantly, establishing good interpersonal relationships with consumers, maintaining close communication, and providing good after-sales service may benefit consumers' trust.

Second, price sensitivity is a significant factor that cannot be ignored for marketing actors of organic food. Most Chinese consumers are price-sensitive since China is a developing country. Therefore, market actors should pay attention to the price sensitivity of consumers while reducing the price of organic foods. Specifically, market actors should use different marketing strategies for consumers with different price sensitivities. For example, producers could supply organic food with different specifications, sizes, and prices to meet consumers' demands with varying price sensitivities. In addition, some product promotion and advertising campaigns can convey the advantages of organic food to consumers, which can be helpful to reduce price

barriers to consumers and motivate their purchase behaviour. Furthermore, retailers are advised to develop target marketing strategies according to consumers' price sensitivity. For price-insensitive consumers, the premium for organic food will not affect their OFP because they are willing to pay a premium for good quality and environmental value (Wang et al., 2020). Thus, organic food of high quality with high prices should be provided for this target market. In contrast, a suitable quality organic food with an acceptable price should suit consumers with high price sensitivity. The producers focus on improving production methods to reduce production costs. At the same time, the retailers give consumers a reasonable price that reflects the actual value of organic food.

6.4 Limitations

This research may have the following limitations. First, this study has examined two types of trust in stakeholders: trust in producers and trust in retailers. Further study could explore the role of trust in the other actors within the food chain, such as the government or other agencies. Second, since this research focused on the role of trust and price sensitivity, the product factors (e.g., product quality) were not included in the model. Third, the samples in this survey were all from China, and the results may not apply to other countries. Finally, consumer behaviours were measured through self-reporting by an online survey. In future research, the application of mixed methods and actual consumption data may mitigate possible sample selection bias and measurement errors.

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