

## Article

# Understanding the Antecedents of Organic Food Purchases: The Important Roles of Beliefs, Subjective Norms, and Identity Expressiveness

Li Bai <sup>1,2</sup>, Mingliang Wang <sup>1</sup> and Shunlong Gong <sup>3,\*</sup>

<sup>1</sup> School of Biological and Agricultural Engineering, Jilin University, 5988 Renmin Street, Changchun 130022, China; 13504334103@126.com (L.B.); jlu\_wml@163.com (M.W.)

<sup>2</sup> Key Laboratory of Bionic Engineering, Ministry of Education, Jilin University, 5988 Renmin Street, Changchun 130022, China

<sup>3</sup> School of Management, Jilin University, 5988 Renmin Street, Changchun 130022, China

\* Correspondence: gsl@jlu.edu.cn

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**Abstract:** China is expected to become an increasingly important market for global organic food producers. This study aims to obtain a new and deeper understanding of how various antecedents affect organic food purchase behavior. Here, a survey based on validated measures is designed, and a total of 1750 consumers are interviewed. In addition to traditionally held beliefs concerning organic food, three unique perspectives, i.e., that organic foods are “luxuries for the rich”, “upscale”, and the objects of “marketing hype”, are confirmed for the first time. Furthermore, the influence of subjective norms on purchase intention is verified to be completely mediated by purchase attitude, suggesting that up to now, the role of social norms may have been simplified, and even underestimated by marketing researchers. Additionally, for the first time, identity expressiveness is confirmed to play a minor but significant role in purchase intention. Perceived trustworthiness is also confirmed to be the important predictor of purchase intention. Finally, household income is not only the second most important predictor of purchase intention, but it is also the most important predictor of actual purchase. These findings will be valuable for marketing scholars and all stakeholders in the organic food industry, particularly international agribusinesses that are wishing to enter the Chinese market.

**Keywords:** organic food; consumer behavior; beliefs; subjective norms; identity expressiveness; theory of planned behavior

## 1. Introduction

The abuse of chemicals and pesticides in agricultural production has caused environmental deterioration, including soil degradation, greenhouse gas emissions, biodiversity loss, pesticide-borne damage [1–3], and human health problems, such as cancer and endocrine disruption [3]. Organic food, which is alleged to be free from chemicals and pesticides, and which have lower impacts on the environment [4], is considered by many to be a healthier and more environmentally friendly type of food [5–7]. The organic food market in China has grown rapidly in recent years [8,9]. In 2014, the Chinese domestic organic market was estimated to be worth US\$4.9 billion, boasting 9990 organic producers, 2707 processors, 66 importers, and 1198 exporters [10], representing the third largest organic market in the world and occupying 6% of the global market [11]. Food safety scandals in recent years have contributed to the accelerated growth of the Chinese organic food market [12]. For example, the demand for organic dairy products (especially infant formula) has skyrocketed since the melamine scandal in 2008 [13]. Furthermore, due to distrust in domestic food, many Chinese

consumers prefer to purchase foreign organic food. For example, in China, the willingness to pay (WTP) for infant milk formula (IMF) with American or European organic certification labels was found to be much higher than that for IMF with a Chinese label [14]. Moreover, in China, purchasing expensive health products, such as organic food, *Cordyceps sinensis*, and *Ganoderma*, has become fashionable among the rich [15]. Young households with a single child were found to be strongly motivated to purchase certified green or organic foods, due to personal and family health concerns [12].

However, the per-capita consumption of organic food in China was estimated to be merely €3 (Euro) in 2014, whereas in Switzerland, it was €221 [10]. Although more than 50% of Chinese respondents in a recent survey indicated positive perceptions of organic food, only 10% of them stated that they regularly purchase such food [16], suggesting that the Chinese organic food market still has enormous growth potential. Thus, determining the factors that will stimulate Chinese consumers to purchase organic food is of great interest to stakeholders in this industry. Previous studies on this issue, of which there are not many, have indicated that the theory of planned behavior (TPB) demonstrates strong robustness in predicting purchase behaviors toward organic food [17]. The current study aims to obtain a new and deeper understanding of how various antecedents affect organic purchases, based on TPB. In addition, although some researchers have analyzed salient behavioral beliefs to explain consumers' attitudes toward organic food [18–20], they did not consider how Chinese culture affects such consumer perspectives. Thus, as will be elaborated below, the important role of emerging beliefs, associating organic food with “marketing hype” and “luxuries for the rich”, is discussed here for the first time. Moreover, the influence of a new variable, i.e., identity expressiveness, which is similar to the western concept of dignity or prestige [21,22], is analyzed in this study. Additionally, previous studies revealed that subjective norms, which play a key role in TPB, have few links with organic food purchase intention [17], whereas subjective norms play a much more significant role in the context of organic food purchases [23]. Our study thus confirms a new path that directly connects subjective norms with purchase attitude. Furthermore, considering the higher price of organic food in China, and the distrust of many Chinese consumers with respect to the domestic organic food supply system [7], the impacts of perceived trustworthiness and household income are also analyzed in the current study. It is also worth noting that most of the previous studies have only discussed the predictors of organic food purchase intention [24,25], but they did not analyze the relationship between purchase intentions and purchase behaviors—a gap in the literature that is explored in the current study.

To address the abovementioned research gaps, we first confirm the salient behavioral beliefs that contribute to Chinese consumers' attitudes toward organic food. Second, the antecedents of purchase attitude and purchase intention, and the mediation role of purchase attitude in the path between subjective norms and purchase intentions are tested and verified. Third, the predictors of purchase behavior are identified, and their influences are analyzed. Lastly, based on these research results, the theoretical contributions and marketing implications of this study are synthesized and discussed. The new insights derived from the current study will provide valuable contributions to the literature and stakeholders in the organic food industry, and specifically, to foreign agribusinesses that intend to export organic food to China.

## 2. Literature Review and Theoretical Framework

### 2.1. New Beliefs Regarding Organic Foods

Different theoretical frameworks make different predictions about purchase attitudes. Expectancy–value attitude theories, as proposed by Fishbein and Ajzen, assume that salient behavioral beliefs, in combination with outcome evaluations, lead to purchase attitudes [26]. Following this theory, some studies have successfully applied salient behavioral beliefs to explain consumers' attitudes toward organic food [18–20]. For example, some studies have reported that because organic food is alleged to be free from chemicals and pesticides, and because they have lower impacts on the environment [4], purchasing organic food is considered to be a matter of healthcare,

environmental protection, and moral responsibility, and has become fashionable among many consumers [27,28]. Similarly, early studies regarding the attitudes of Chinese consumers toward organic food found that they held positive beliefs about its safety, healthiness, taste, and environmental friendliness [5–7,19,29]. A summary of the state of the literature on beliefs relating to organic food is provided in Table 1.

**Table 1.** A summary of the literature on beliefs, the theory of planned behavior (TPB), and other factors affecting organic food purchase.

Authors	Year	Beliefs					Theory of Planned Behavior				Other Factors		
		HC	EF	Taste	FS	Nutritious	PAtt	SN	PBC	Int	Att	Inc	PT
Tarkiainen and Sundqvist	2005	√(**)					√(**)	√(**)		√(**)			
Chen	2007	√(NS)	√(**)	√(NS)			√(**)	√(**)	√(**)		√(**)		
Chen	2009	√(**)	√(**)										
Yin et al.	2009	√(NS)	√(NS)		√(NS)							√(**)	√(**)
Tarigan et al.	2011						√(**)						
Urban et al.	2012						√(**)	√(**)	√(NS)				
Thøgersen and Zhou	2012	√(**)	√(**)	√(**)			√(**)	√(NS)	√(**)	√(**)		√(**)	
Tung et al.	2012												√(**)
Zhou et al.	2013						√(**)	√(NS)	√(**)				
Al-Swidi et al.	2014						√(**)	√(**)	√(NS)				
Chen et al.	2014				√(**)						√(**)	√(**)	
Irianto	2015	√(**)	√(**)				√(**)	√(**)					
Nuttavuthisit and Thøgersen	2015												√(**)
Xie et al.	2015	√(**)	√(**)	√(**)	√(**)							√(**)	
Thøgersen et al.	2016						√(**)						
Yadav and Pathak	2016	√(**)	√(**)				√(**)	√(NS)	√(**)				
Wang and He	2016	√(**)	√(**)	√(**)	√(**)	√(**)					√(NS)		
Maichum et al.	2017						√(**)	√(NS)	√(**)	√(**)			
Wang et al.	2019	√(**)					√(**)	√(**)	√(**)				

Note: “HC” refers to health consciousness. “EF” refers to environmentally friendly. “FS” refers to food safety. “PAtt” refers to purchase attitude. “SN” refers to subjective norms. “PBC” refers to perceived behavior control. “Int” refers to purchase intention. “Att” refers to attitude. “Inc” refers to income. “PT” refers to perceived trustworthiness. “√” means that this variable was tested. Double asterisks (\*\*) denote statistical significance at 0.05-level, and “NS” denotes no significance at 0.05-level.

However, based on a survey by *Consumption Daily*, which is the only newspaper in the field of consumer economics in China, the perceptions of some Chinese consumers regarding organic food relate not only to its health or safety, but also to its luxury status. As Fu points out, the expensive price of organic food plays into the consumption psychology of some Chinese consumers, making them feel as if they are purchasing high-end products or luxuries [30]. In contrast, quite a few Chinese consumers regard organic food as the object of marketing hype—products that are labeled with sky-high prices in order to increase demand, and to attract high-end customers [31]. Based on all these research results, we proposed the following hypothesis.

**Hypothesis (H1):** *In addition to beliefs that associate organic foods with safety, health, and sustainability, the idea that organic foods are “more upscale”, “luxuries for the rich”, and the objects of “a marketing hype” contribute to consumer attitudes toward organic foods, and the perception that organic foods are safer than non-organic foods is the single most important factor that impacts on consumer attitudes.*

## 2.2. Attitude, Purchase Attitude, and Purchase Intention

Attitude refers to the extent to which an individual has a good or bad evaluation of the behavior at issue [32]. The theory of planned behavior states that knowing how individuals feel about buying or using an object is more telling than merely knowing their evaluation of the object [33]. However, many studies do not distinguish between the attitude toward an object and attitude toward purchasing it, equating these two concepts [7,34]. In fact, the influences of these two kinds of attitudes are different. An attitude toward an object is an important predictor of the attitude toward purchasing it, whereas the latter is an important predictor of purchase intention. For example, Chen found that the attitude toward organic food predicted 37% of the variation in purchase attitude, while purchase attitude is the most important antecedent of purchase intention [18]. In addition, many studies have confirmed that consumers who have positive attitudes toward organic food are more likely to form stronger purchase intentions [7,19,23,29]. The attitude–behavior relationship for organic vegetables was also found to be significant, accordingly in a recent study [35]. Meanwhile, in the field of safe and nourishing food, many studies, such as those of Thøgersen and Zhou [19], and Patch et al. [36], found that purchase attitude is more predictive of purchase intention than other factor. A summary of the state of the literature on attitude and purchase attitude is provided in Table 1.

Based on TPB, a central factor is the individual’s intention to perform a given behavior [33]. Normally, the stronger the intention to engage in a behavior, the more likely its performance will be realized. Intention has been successfully shown to explain a wide variety of behaviors [37–39]. In the field of organic food purchase, Maichum et al. surveyed consumers in Thailand, and verified that purchase intention has a positive influence on the purchase behavior toward organic food [40]. The results of a meta-analytic study also confirmed that intention leads to behavior with respect to the consumption of organic food [17]. A summary of the state of the literature on purchase intention is provided in Table 1. Based on these findings, we proposed the following hypotheses.

**Hypothesis (H2):** *When a person’s attitude toward organic food is positive, his or her attitude toward purchasing organic food is more likely to be positive.*

**Hypothesis (H3):** *Purchase attitude is the most important and positive predictor of purchase intention.*

## 2.3. Identity Expressiveness

Identity expressiveness is an operational concept applied to the use of technologies, products, or services that are important to both social identity and role-oriented self-identity [41]. Today, many young Chinese people seek the positive recognition of their peers. They are motivated to be labeled as being part of a group of stylish people, which is a type of expression of identity expressiveness. Based on social identity theory, group members of an in-group will seek to define appropriate behaviors by reference to the norms of the group to which they belong [42]. Terry, Hogg, and White found that self-identity, group norms, and group identification significantly influence behavioral intention, and they highlighted the need to consider the roles of social and self-identity constructs in the context of the relationship between attitude and behavior [43]. Thus, we proposed the following hypothesis.

**Hypothesis (H4):** *Identity expressiveness positively influences the intention to purchase organic food.*

## 2.4. A New Path from Subjective Norms to Purchase Attitude

Subjective norms reflect the degree of perceived social pressure to engage or to not engage in a behavior. Interestingly, despite Chinese culture being characterized as being collectivist, Thøgersen and Zhou found that social norms play only a minor role in Chinese consumers’ intentions to buy

organic food [19]. However, many empirical studies in the field of food purchase have found that purchase attitude is developed in social networks and it is affected by social norms, suggesting that there is a direct path between subjective norms and purchase attitude [17,23,44]. Specifically, Abdullah Al-Swidi et al. found that subjective norms play a significant role in consumerism, and they not only influence purchase intention, but also purchase attitude [23]. Additionally, a mediation analysis of a meta-analytical structural equation model demonstrated significant support for the assertion that subjective norms not only shape the intention to buy organic food, but they also directly influence purchase attitude [17]. A summary of the state of the literature on subjective norms is provided in Table 1. Based on these studies, and considering that organic food is relatively new to many Chinese consumers, who have had little experience with these products, and thus they are more likely to accept an attitude that is in line with the opinion of the majority reference group, we expected that there is a direct path between the subjective norms and the purchase attitude, and we developed the following hypothesis.

**Hypothesis (H5):** *There is a positive relation between the subjective norms and the purchase attitude toward organic food.*

### 2.5. Perceived Trustworthiness

Trust is considered to be a factor that influences the formation of purchase attitude and intention. Lobb, Mazzocchi, and Traill argued for the inclusion of trust in the TPB model when addressing food safety-related issues [45]. Chinese consumers' purchase intentions toward organic food were found to be hindered by their distrust in the organic food system, including certification agencies, producers, manufacturers, and regulators, and by the continuous presence of fake organic goods in the market [7,29,46,47].

However, much less attention has been paid to the influence of perceived trustworthiness. In particular, the relationship between perceived trustworthiness and purchase behavior toward organic food is yet to be truly tested in mainland China. Yin et al. found that Chinese consumers' purchase intention toward organic food is significantly affected by the degree of trust in organic food [29]. Tung et al. found that trust in organic agricultural practice and product labeling is a key factor in determining the buying behaviors of Taiwanese consumers [48]. Nuttavuthisit and Thøgersen suggest that mistrust in Thai organic institutions makes it less likely that the buying intentions of Thai consumers will become realized in the form of actual buying [49]. A summary of the state of the literature on perceived trustworthiness is provided in Table 1. Based on these studies, the following hypothesis was offered.

**Hypothesis (H6):** *Perceived trustworthiness has a positive influence on purchase attitude (H6a), purchase intention (H6b), and purchase behavior (H6c) toward organic food.*

### 2.6. Household Income

In Western countries, the price of organic food is 50%–200% higher than that of non-organic food. However, in China the price is 2–5-fold higher than that of non-organic food [19,29]. A high price is undoubtedly a barrier to purchase [50]. Chinese consumers' purchase intention and purchase behavior toward organic food are influenced by their income level [29]. For example, Thøgersen and Zhou found that the higher the family income, the more likely consumers will take the last step of actual buying the product, given the same levels of purchase intention and perceived behavioral control [19]. A summary of the state of the literature on income is provided in Table 1. Therefore, we proposed the following hypothesis.

**Hypothesis (H7):** *Household income level positively influences purchase intention (H7a), and household income is the most important predictor of purchase behavior (H7b).*

### 2.7. Conceptual Model

As shown in Figure 1, we proposed a conceptual model based on these hypotheses. The current study is one of the few studies that uses extended TPB as a basic framework, and that discusses the entire decision-making process from initial beliefs to purchase behavior. In particular, three new beliefs were included in this model, and a new path from subjective norms to purchase attitude was tested; meanwhile, the influences of perceived behavior control, identity expressiveness, household income, and perceived trustworthiness on purchase attitude, purchase intention, or purchase behavior, were verified.

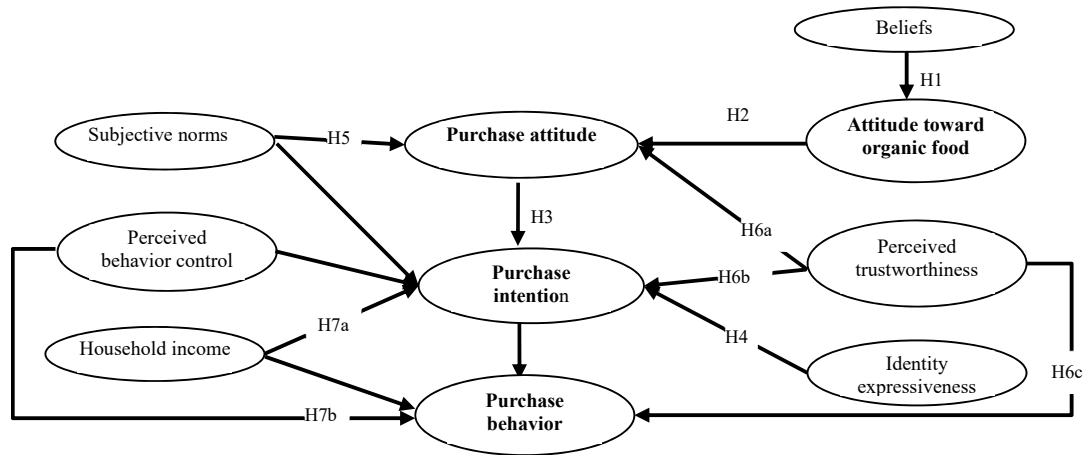


Figure 1. The conceptual model.

### 3. Materials and Methods

#### 3.1. Measurements of the Constructs

The constructs were assessed based on Ajzen's recommendations and the existing literature in their related fields [18,19,29,41,43,50–54].

In order to estimate the content validity, an expert panel, including one professor, two associate professors, three Ph.D. candidates, and two masters candidates, was developed. First, we explained the study objective, the concepts regarding the instrument, and the contents of the assessment. Second, a focus group discussion with the experts was organized. Third, at their suggestion, two scales that were used to measure beliefs relating to “animal concern” and “religion” were removed from the survey. Finally, a pilot test was conducted among 31 consumers from Changchun city in northeast China. Except for the construct of perceived behavior control (PBC), the reliability of each construct was satisfactory, with a Cronbach's value of above 0.7 [55]. Similar to many other studies, such as those of Urban et al. [56] and Bai et al. [57], the Cronbach's value of PBC, measured as a combination of perceived easiness (PE) and perceived control (PC), was lower, and two dimensions had eigenvalues over 1 when using exploratory factor analysis (EFA) to examine its structure. Thus, the two latent variables of PE and PC, which were respectively loaded on the two observed variables, were incorporated into the structural model independently.

The final questionnaire included two sections. The first section included 30 items to assess 10 constructs. The second section collected information about demographic characteristics. Detailed items are provided in Appendix A.

Common method bias (CMB) is considered to be a potential problem in behavioral research, which may compromise the credibility of the data analysis results [58,59]. There was concern that CMB may have inflated the results here, i.e., the relationships between the variables, because this study used self-reported data and the participants responded to the items in a single questionnaire at the same point in time. Harman's single factor test and the unmeasured latent marker construct (ULMC) are widely used to address this question [58,60–63]. In the current study, the variance that was explained by the first principal component was only 29.55%. The ULMC method compared the coefficient of determination ( $R^2$ ) with a CMB variable to the  $R^2$  without a CMB variable, and revealed

that 60% of the average variance of the measures was explained by their associated construct, and only 7.5% was explained by ULMC. This result also indicates that CMB was not a major problem here [64–66].

### 3.2. Data Collection and Sample

A national survey was carried out in mainland China. Participants over 18 years of age were approached by adopting a non-probability sampling method. This method does not allow each individual to have the same probability of selection, but it is widely used in social science studies [67], and it has been shown to be comparable to probability sampling [68]. A total of 17 investigators, including the corresponding author and 16 postgraduate students from Jilin University who were introduced to the objective of this study and trained in the investigation techniques, completed the interviews. In the urban areas, the interviewers visited large shopping centers and supermarkets, due to the intense circulation of consumers. The participants were asked to complete a questionnaire independently, and to return it to the interviewers. The questionnaire typically took 20–30 min to complete. In rural areas, the participants were visited and surveyed in their households or on farms. A large percentage of the rural population interviewed was illiterate or semiliterate, so the interviewers read each question and response aloud, and helped the participants to complete the questionnaire. The face-to-face interview in rural areas usually took 40–60 min. Previous studies have found that female Chinese consumers living in urban areas and with higher educational levels are more likely to purchase organic food [69,70]. Thus, although we used a convenience sampling method, we increased the quotas for female consumers with high education levels living in urban areas, in order to gain a sample composition that resembled the population of reference.

A total of 1750 respondents were interviewed. Of them, 1162 (66.4%) indicated that they knew about organic food, and that they could correctly identify organic food labels from among four labels, i.e., organic, green, conversion to organic, and pollution-free food. To guarantee data quality, the objective of the survey was explained, and anonymity and confidentiality were assured. A USB flash drive was given to each urban participant, and a thermal travel mug to each rural participant after survey completion.

Any missing responses, whether in the scale section or the demographic section, were excluded from the results. After sorting, 1033 questionnaires were confirmed to be valid, with a completion rate of 88.9% (1033 out of 1162). However, only 29 of them were completed by consumers who were over 55 years of age. One major reason for this is that many older interviewees did not know about organic food, and therefore, they could not complete the questionnaire. These 29 responses were not included in the following analysis, because such a sample size was too small to be representative of that particular demographic.

As shown in Table 2, 68.3% of the respondents were between 18 and 35 years of age, 53.9% were female, 46.5% graduated from college or higher, 57.9% were married, 54.9% claimed a monthly income of less than 3000 Chinese Yuan, 76.7% resided in urban areas, and 75.6% lived either with elders of 60+ years of age, or with kids below 12 years of age.

**Table 2.** Demographic characteristics of the sample ( $n = 1004$ ).

Demographic Characteristics	Category	Percentage (%)
Age	18–35	68.3
	36–55	31.7
Gender	Male	46.1
	Female	53.9
Educational level	Junior high school or below	13
	Senior high school	40.5
	College and above	46.5
Marital status	Unmarried	41.2
	Married without children	22.6

	Married with children	35.3
	Others	0.9
<b>Per capita household monthly income</b>	No more than 3000	54.9
<b>(Chinese Yuan)</b>	3001–5000	32.9
	5001–10,000	10
	>10,000	2.2
<b>Place of residence</b>	Urban	76.7
	Rural	23.3
<b>Primary food purchaser or not</b>	Yes	35.9
	No	64.1
<b>Living with the elders of 60+ years of age or with</b>	Yes	75.6
<b>kids below 12 years of age</b>	No	24.4
<b>You buy organic foods:</b>	For yourself to eat	17.1
	For your family (such as the	71.5
	kids or elders) to eat	
	As a gift for others	11.4

### 3.3. Data Analysis

Because the attitude toward organic food is influenced by many behavioral beliefs, we first used stepwise regression to test the influences of eight candidate beliefs, to identify the significant beliefs that contribute to the attitudes of Chinese consumers. The final model only included the beliefs that significantly contributed to Chinese consumer attitudes.

Second, because structural equation modeling (SEM) allows researchers to test a measurement model and a structural model simultaneously [71], the antecedents of purchase attitude and purchase intention were tested based on SEM analysis. Fit indices and goodness-of-fit (GFI) criteria together, as recommended and used by many researchers, were utilized to determine whether the hypothesized models gave an acceptable representation of the data. The predictors represented by one item, such as income, were fixed to 20% of the item's total variance, which is typical for survey measures [72–74].

Finally, because there are only two possible dependent variables of purchasing behavior (“purchase” or “not purchase”), binary logistic regression and moderated regression analysis (MRA) were used to confirm the antecedents, and to test the moderating effects of household income.

LISREL 8.70 was used for the confirmatory factor analysis (CFA) and SEM analysis. SPSS 22.0 was used to perform all of the other analyses.

## 4. Results

### 4.1. From Belief to Attitude

Considering “Tolerance” > 0.1, the “Variance Inflation Factor (VIF)” < 10 of each variable, and an examination of the correlation matrix suggested that any two variables had a bivariate correlation < 0.7, and there was no existence of multicollinearity. The three new beliefs significantly predicted the attitude toward organic food, and the belief that organic food is “safer” alone made the biggest contribution (37.8%); thus, H1 was validated. The results are shown in Table 3.



**Table 3.** Stepwise regression of beliefs and attitudes toward organic food.

Beliefs	Standard $\beta$	t	Adjusted $R^2$	F	Tolerance	Variance Inflation Factor (VIF)
Safer	0.378	11.910**			0.565	1.77
More environmentally friendly	0.167	5.478**			0.61	1.64
Luxuries for the rich	0.148	5.646**			0.822	1.216
More nutritious	0.125	4.687**			0.798	1.254
More upscale	0.113	4.154**			0.763	1.311
Marketing hype	−0.108	−4.043**	0.43	127.365**	0.793	1.262

Note: \*\*  $p < 0.01$ .

#### 4.2. From Attitude to Purchase Intention

The EFA revealed that each construct was one-dimensional, and that over 50% of the variance could be explained by a single factor. The CFA model provided a good fit:  $\chi^2$  (df = 120) = 863.05 with  $p = 0.00$ , the goodness-of-fit index (GFI) = 0.917, comparative fit index (CFI) = 0.968, Root Mean Square Error of Approximation (RMSEA) = 0.079, non-normed fit index (NNFI) = 0.954, standardized root mean square residual (SRMR) = 0.044. Although  $\chi^2$  was significant and the ratio of  $\chi^2/\text{df} = 7.19$  was slightly higher than recommended ( $\leq 5$ ), these results might have been caused by the large sample size. All of the standardized loadings were over 0.6 and significantly related to their underlying factors. The composite reliability (CRs) for all of the constructs ranged from 0.73 to 0.87, the average variances extracted (AVEs) ranged from 0.55 to 0.73, and their square roots were higher than the squared correlation between each pair of constructs, as shown in Table 4. Therefore, as suggested by Hair et al., convergent and discriminant validity were supported [75].

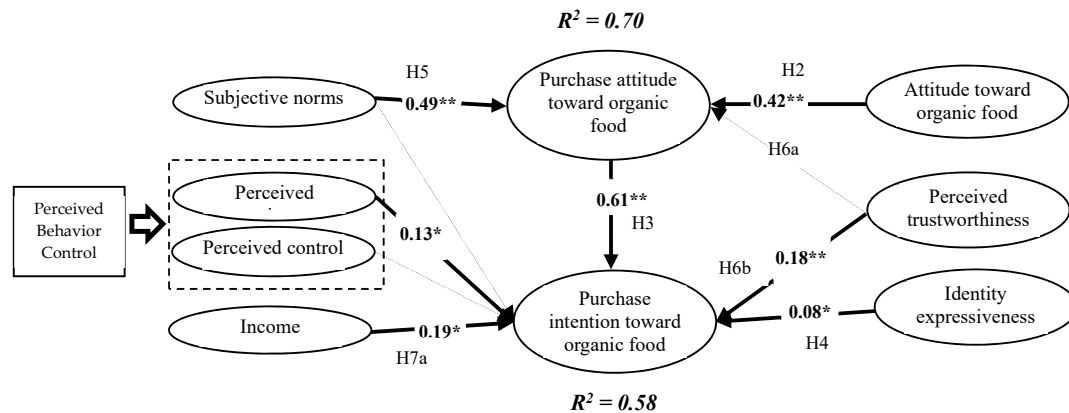
**Table 4.** Pearson correlations between the variables, square root of the average variance extracted (AVE), mean, and standard deviation.

Variable	Att	PAtt	IE	SN	PE	PBC	PT	Inc	Pri	Pint	Mean	S.D.
Att <sup>a</sup>											4.10	0.94
PAtt	0.584 *	<b>0.756</b>									3.83	0.75
IE	0.167 *	0.242 *	<b>0.857</b>								2.93	0.96
SN	0.505 *	0.589 *	0.262 *	<b>0.742</b>							3.70	0.73
PE <sup>a</sup>	−0.105 *	−0.208 *	−0.225 *	−0.166 *							2.51	0.92
PBC <sup>a</sup>	0.361 *	0.417 *	0.072 **	0.504 *	−0.146 *						3.89	1.03
PT	0.419 *	0.448 *	0.296 *	0.508 *	−0.055	0.375 *	<b>0.760</b>				3.45	0.71
Inc <sup>a</sup>	0.138 *	0.252 *	0.243 *	0.299 *	−0.101 *	0.220 *	0.259 *				—	—
Pri	0.302 *	0.261 *	−0.027	0.322 *	−0.096 *	0.354 *	0.122 *	0.087 *			4.46	0.85
Pint	0.436 *	0.562 *	0.225 *	0.436 *	−0.044	0.311 *	0.430 *	0.293 *	0.179 *	<b>0.762</b>	3.46	0.83

Note: Constructs marked with a superscript 'a' include only one item. All correlations with one asterisk were significant at  $p < 0.01$ , and all correlations with two asterisks were significant at  $p < 0.05$ . Except for the single-item constructs, the bold numbers on the diagonal are the square roots of AVE.

SEM offered an acceptable representation of the data. These antecedents predicted the purchase attitude ( $R^2 = 0.70$ ) and purchase intention ( $R^2 = 0.58$ ) to a higher extent, respectively. The attitude was positively related with purchase attitude, and the purchase attitude made the largest contribution to the purchase intention, which was consistent with H2 and H3. Identity expressiveness significantly and positively influenced purchase intention, and thus, H4 was confirmed. Furthermore, after including it, the model explanatory power increased by 0.7%. Subjective norms were the most

important influencers of purchase attitude, and H5 was supported. Perceived trustworthiness contributed nothing to the prediction of purchase attitude, and H6a was not supported, but it was consistent with H6b, and it significantly influenced purchase intention. Household income, following purchase attitude, made the second-largest contribution to purchase intention, consistent with H7a. Finally, perceived easiness made the fourth largest contribution, meaning that perceived obstacles or difficulties would hinder consumers from turning purchase attitudes into intentions. The results are shown in Figure 2.

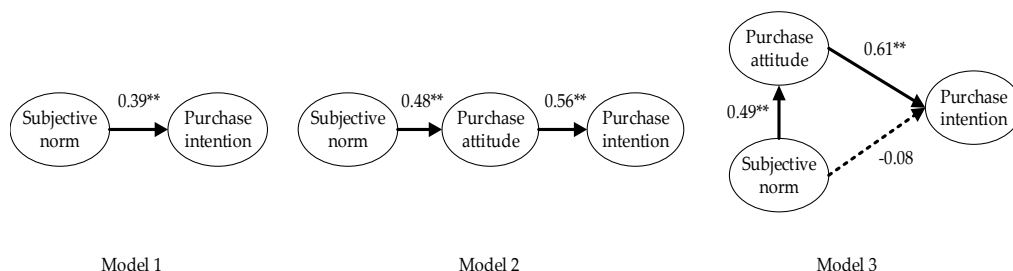


Note: \* Significant at  $p < 0.05$  (two-tailed); \*\* Significant at  $p < 0.01$  (two-tailed). The relationships between variables connected by dotted lines were not significant. Standardized solution,  $N = 1004$ . Model fit:  $\chi^2$  (df = 125) = 880.12, comparative fit index (CFI) = 0.967, Root Mean Square Error of Approximation (RMSEA) = 0.078 (90% confidence interval: 0.073–0.083), the goodness-of-fit index (GFI) = 0.915, non-normed fit index (NNFI) = 0.955, standardized root mean square residual (SRMR) = 0.045.

**Figure 2.** Antecedents of purchase attitude and purchase intention.

#### 4.3. The Mediation Function of Purchase Attitude

The mediation function of purchase attitude revealed the generative influence mechanism from subjective norms to purchase intention [76]. All of the items that were used to measure the variables of subjective norms, purchase attitude, and purchase intention were normally distributed (with a skewness index range  $< |3.00|$  and a kurtosis index  $< |7.00|$  [77]). The procedures proposed by Baron and Kenny, which were often used to verify the mediation function of a variable [78–80], were used to test the mediation role of purchase attitude [76]. According to Baron and Kenny's method, three models were built and analyzed, as shown in Figure 3. All of the coefficients in model 1 and model 2 were significant. However, in model 3, the coefficients from purchase norm to purchase attitude, and from purchase attitude to purchase intention were significant, but the coefficient from subjective norms to purchase intention was not significant, indicating that purchase attitude fully mediated the relationship between subjective norms and purchase intention. In addition, as shown in Table 5, all of the models provided acceptable representations of the data.



Note: \*\* Significant at  $p < 0.01$  (two-tailed).

**Figure 3.** Results of the mediation effects.

**Table 5.** Fit index of the mediation function analysis.

Fit	$\chi^2$	df	$\chi^2/df$	CFI	GFI	NNFI	RMSEA	SRMA	AIC
<b>Model 1</b>	1072.43	127	8.44	0.96	0.9	0.94	0.086	0.059	1198.43
<b>Model 2</b>	881.94	126	7	0.97	0.92	0.96	0.077	0.045	1009.94
<b>Model 3</b>	880.12	125	7.04	0.97	0.92	0.96	0.078	0.045	1010.12

#### 4.4. From Purchase Intention to Purchase Behavior

If the  $i$ -th respondents had once purchased organic food before the survey, we defined  $y_i = 1$ ; otherwise,  $y_i = 0$ . First, the main effects were tested in model 1, and then, an MRA was conducted to test the moderating effects of household income (model 2). From here, the indicators that were used to measure the constructs of purchase intention and perceived trustworthiness were summed up and divided by the number of indicators, and the results were then used for the data input. An exception was made for the construct of purchase behavior, where the data were standardized before the analysis. The standard score was calculated by determining the difference between the original score and the mean score, and then dividing it by the standard deviation.

Table 6 summarizes the logistic regression results. The HL test indicated that the goodness-of-fit for either one was satisfactory. Household income (standard  $\beta = 0.502$ ,  $p < 0.001$ ) was found to be the most important predictor of purchase behavior, and therefore, H7b was supported. Perceived easiness (standard  $\beta = 0.371$ ,  $p < 0.001$ ) and purchase intention (standard  $\beta = 0.363$ ,  $p < 0.001$ ) were the second- and third most important and positive predictors, respectively. Thus, organic food purchasers in China are those with higher household incomes and stronger purchase intentions, who perceive organic food as being easier to purchase. Moreover, the interaction of income and purchase intention was positively related, meaning that the higher the household income, the stronger the relationship between purchase intention and purchase behavior. Surprisingly, perceived control significantly but negatively correlated with purchase behavior, and the possible reasons for this result are discussed in the next section.

**Table 6.** Results of the main effects and the moderating effects for income, using binary logistic regression.

	Model 1					Model 2				
	Standard $\beta$	S.E.	$p$	95% C.I. for EXP (b)		Standard $\beta$	S.E.	$p$	95% C.I. for EXP (b)	
				Lower	Upper				Lower	Upper
<b>PInt</b>	0.378	0.094	0.000 *	1.212	1.756	0.363	0.095	0.000 **	1.193	1.733
<b>PE</b>	0.366	0.077	0.000 **	1.239	1.678	0.371	0.079	0.000 **	1.241	1.691
<b>PC</b>	−0.37	0.088	0.000 **	0.581	0.82	−0.366	0.089	0.000 **	0.583	0.825
<b>Inc</b>	0.546	0.079	0.000 **	1.481	2.015	0.502	0.084	0.000 **	1.402	1.946
<b>PT</b>	0.056	0.093	0.546	0.881	1.269	0.048	0.093	0.602	0.875	1.259
<b>(Constant)</b>	−1.203	0.081	0.000 **							
<b>PInt *Inc</b>						0.206	0.096	0.032 *	1.018	1.484
<b>PE *Inc</b>						0.031	0.082	0.704	0.878	1.212
<b>PC *Inc</b>						−0.148	0.092	0.107	0.72	1.032
<b>PT *Inc</b>						0.025	0.091	0.785	0.857	1.226
<b>(Constant)</b>						−1.217	0.085	0		
<b>HL test</b>		$\chi^2 = 10.70$ , $df = 8$ , $p = 0.219$					$\chi^2 = 12.97$ , $df = 8$ , $p = 0.113$			
<b>Nagelkerke R2</b>			0.154					0.163		

Note: The significant variables are in bold. \*\*  $p < 0.01$ ; \*  $p < 0.05$ . Prediction accuracy of model 1: 76.5%; prediction accuracy of model 2: 77.4%.

## 5. Discussion

### 5.1. Outcomes of the Classical TPB Variables

The important role of the individual purchase attitude in shaping a potential purchase was proven, because it was not only the strongest predictor of purchase intention, but it also completely mediated the relationship between subjective norms and purchase intention, consistent with the results of a recent meta-analysis [17].

Perceived easiness had a significant and positive influence on both purchase intention and behavior, in the current study. Additionally, perceived control significantly influenced the purchase behavior, but the influence was negatively correlated, which was not in line with the general expectations of TPB [26] and the findings of a recent meta-analytical study [17]; however, these results were consistent with the study of Urban et al., who found a negative effect of the controllability facet of PBC on Czech consumers' organic food purchase intention [56]. As discussed by Urban et al., one possible explanation is that those who purchase organic foods are more aware of the obstacles to buying them [56]. Other possible explanations include the following. First, individuals might underestimate the impact of external factors, e.g., stress from families or peers regarding their purchases. Second, it is possible that people are more accurate in their perceptions of perceived easiness, relative to their perceptions of the perceived level of control [81]. Third, some respondents might have misinterpreted the item used to measure perceived control, and believed that it was measuring whether they were a person of authority. Under the influence of face consciousness, they inaccurately overestimated the extent to which organic food purchase is volitional.

### 5.2. Outcomes of the New Variables Identified by the Authors

Beliefs concerning safety and environmental friendliness still occupy the top two consumer considerations, consistent with Thøgersen and Zhou [79], and Chen [82]. However, although previous studies, such as that of Loebnitz and Aschemann-Witzel [83], have suggested that the existence and content of Chinese consumers' beliefs toward organic food were similar to those of Western consumers, the current study found three unique beliefs—that organic foods are “luxuries for the rich”, “upscale”, and the objects of “marketing hype”—for the first time. Some Chinese consumers are concerned not only with purchasing the best product, but also the most upscale, and purchasing organic products has become a symbol of a consumption upgrade [30]. Additionally, considering that most respondents purchase organic food as gifts, for example, 71.5% of families and 11.4% of other respondents in our survey, the influence of social pressure, or the desire for improved social standing may also influence this trend.

Taste was proven to have no significant influence. Based on its low mean score (3.51 out of 5), it is safe to conclude that many Chinese consumers do not believe that organic food tastes superior, which is similar to the findings of Chen [82], who reported that Taiwanese consumers consider the taste of organic food to be poor, as well as the conclusions of Loebnitz and Aschemann-Witzel [83], who indicated that Chinese consumers' taste expectations for organic foods are not significantly different from their expectations regarding non-organic foods.

Another key finding is the crucial role of subjective norms, whose influences on purchase intention were totally mediated by purchase attitude, and which might be underestimated and simplified in previous studies. Previous studies reported that despite Chinese culture being characterized by collectivism, Chinese consumers' intention to buy organic food seems to depend primarily on purchase attitude, whereas social norms play no role [19,20]. The current study, however, provides a new understanding, where perceived social pressure indirectly affects purchase intention by exerting an influence on the purchase attitude. This finding is consistent with that of Al-Swidi et al. [23], and it tested the meta-analytic inferences of Scalco et al., who reported that subjective norms not only shape individual intention to buy organic food, but also directly influence the purchase attitude [17]. Similarly, Müller and Gaus reported that negative information about fraud, and misapprehensions regarding organic food do not affect behavioral intentions directly, but they

are almost fully mediated by attitude [84]. Negative information is also a kind of social norm, i.e., influences from the mass media.

Furthermore, in the current study, household income was proven to be the second most important predictor of purchase intention, and the most important predictor of actual purchase. Meanwhile, the interaction between purchase intention and income is also positively significant. All together, these results confirm that economic status is still constraining Chinese consumers in purchasing organic food. In short, the decision to purchase organic food depends not only on an individual's perceptions, but also on their ability to afford it. Chen et al. have reported that among demographic variables, only "income" demonstrates a weak but significant correlation with Chinese urban consumers' purchase intentions toward organic food [42]. Yin et al. revealed that annual income has a positive effect on Chinese consumers' willingness to purchase organic food [29]. Thøgersen and Zhou found that family income accounts for 8% of the additional explained variance of purchase behavior toward organic food [19].

Additionally, the current study suggests that perceived trustworthiness directly influences purchase intention, but it has no influence on purchase attitude and behavior. Soye et al. found that after controlling other variables, trust influences purchase intention toward organic food in Germany and Ukraine, and it influences buying behavior in Germany, but it has no influence in the United States and Canada [85]. These results suggest that trust may influence different links in different scenarios. In China, perceived trustworthiness is an important predictor of purchase intention, indicating the intention has been hampered by distrust in the organic food system, including the regulation and certification systems, due to the presence of counterfeit organic food [7,29,47,69,86].

Finally, this study verified the influence of identity expressiveness. A recent study by Hodgins and Fraser revealed that, in Canada, one barrier faced by alternative food businesses in providing wider access to low-income consumers is "stigmas" [87]. The surveyed low-income consumers were unwilling to shopping at alternative food spaces, because they perceived these places as "elite", "fancy place[s]", or "for certain folks". This perception is a type of social barrier; that is, low-income consumers do not believe that they belong to the social group that shops at such places. In the current study, however, some respondents classified themselves as being the type of people that should consume organic food. In fact, both studies confirmed the important influence of identity expressiveness. Significantly however, the impact of identity expression on purchase intention was minor, which differed from our expectations. One reason for this may be that only two items were used to evaluate this issue, and they may not have measured the constructs effectively enough. In future studies, more items expressing "personal values", "personality", "concern, and love to myself/my parents or children", and "compatible with how I like to think of myself" could be used after in-depth interviews with representative consumers.

### 5.3. Marketing Implications

With the continued increase in the incomes and consumption levels of Chinese consumers, food nutrition and food safety have attracted increased attention, and the market for organic food has great potential for its development. When companies market organic food in China, they should focus on high-income consumers first and foremost, and launch marketing activities that are directed at consumers who are concerned with purchasing luxury and high-end products, while designing their advertising and spokespeople to appeal to this target audience.

Moreover, international marketers can tailor such media campaigns by emphasizing the qualities that differentiate organic food from non-organic food, and by inviting well-known people who have already been established as having good taste in food to act as spokespeople, in order to satisfy the demands of consumers who are hoping to demonstrate good taste and social status by buying organic food.

Furthermore, organic food companies should consider sharing the health and environmental benefits of organic food with their consumers, to generate more positive attitude toward organic food, which will thus translate into increased sales of organic food.

Moreover, international agribusinesses need to capitalize on the importance of social influence in the formation of purchase attitudes, by identifying and targeting influencers for word-of-mouth marketing, and portraying conversations between typical consumers in real-life situations in their advertising [44].

Additionally, considering that this study verified the influence of identity expressiveness on the purchasing of organic food, and also the fact that many Chinese consumers purchase organic food as gifts, organic food producers should invest in the packaging design and product imagery of organic foods, paying specific attention to the social attributes of such packaging, and advertising organic food as a means of expressing concern for and love to others.

Finally, considering the general distrust of many Chinese consumers regarding the legitimacy of food and certification labels [88–90], strong export opportunities exist for international agribusinesses if they can gain consumer trust. For example, marketers can demonstrate the quality of their products by being transparent about production and processing procedures, and by selling products in outlets that are trusted by Chinese consumers. Meanwhile, trust in the organic food system might begin to be restored if marketers and regulators cooperate to reduce counterfeit branding, increase transparency of information, and develop means for directly interacting with consumers. Furthermore, labels bearing the country of origin are an important basis for Chinese consumers' food purchasing decisions, and therefore, marketers can achieve legitimacy by obtaining the approval of organic certification agencies in countries whose food safety systems are perceived to be, regulated, modern, and effective.

## 6. Conclusions, Limitations, and Future Research

The belief that organic food is safer than non-organic food was confirmed to still be the most important factor in predicting attitudes toward organic food. However, in addition to the traditional perceptions of organic food, the three unique viewpoints—that organic foods are “luxuries for the rich”, “upscale”, and objects of “marketing hype”—were verified for the first time here. Social influences were proven to be crucial to the formation of purchase attitude, and the latter was found to be the strongest predictor of purchase intention, totally mediating the relationship between subjective norms and purchase intentions. Perceived trustworthiness had no direct influences on purchase attitude and actual behavior, but it was determined to be an important predictor of purchase intention. Additionally, identity expressiveness was confirmed for the first time to play a minor but significant role in purchase intention. Finally, household income was found to not only be the second most important predictor of purchase intention, but also the most important predictor of purchase behavior.

This study had some limitations, however, and further research is recommended. The sample was comprised mostly of young respondents, which may have contributed to the low variation in the responses. Random sampling should be used, to avoid sampling errors in future studies. Another limitation was the lack of correspondence between the items that were used to measure purchase intention and purchase behavior. A third limitation involved the concepts of perceived easiness and perceived behavioral control, as they were each measured by only one item, respectively; the concept of identity expressiveness also needed to be measured by including more items. In future studies, these antecedents and their influences on organic purchase should be identified and verified by using quality–quantity mixed methods. Additionally, the pricing of organic food could be studied by adopting the choice experiment method. Finally, how to improve or restore the trust of Chinese consumers in the domestic organic food system remains an issue that must be resolved.

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## Appendix A

Constructs (Cronbach's Value)	Items	Mean	Standard Deviation
Beliefs (Bi) [21,22,39,43]	Safer	4.24	0.97
	More environmentally friendly	4.14	1.03
	More nutritious	4.06	1.13
	Luxuries for the rich	3.80	1.25
	Fewer categories	3.68	1.07
	Tastier	3.51,	1.19
	More upscale	3.47	1.17
	Marketing hype	2.96	1.16
Attitudes (Att) [40]	Do you agree that organic foods are better than non-organic foods in general?	4.10	0.94
Purchase attitudes (PAtt) [21] (0.78)	Attitude toward purchasing organic foods is extremely bad—extremely good	3.94	0.74
	Extremely unpleasant—extremely pleasant	3.54	1.08
	I am strongly against—strongly for buying organic foods	4.00	0.85
Identity expressiveness (IE) [31,44] (0.84)	I think the people around me think purchasing organic foods conforms to my taste and identity.	3.02	0.98
	Purchasing organic foods makes me feel superior.	2.84	1.09
Subjective norms (SN) [21,22,40] (0.77)	Those who influence your behaviors, such as family, close friends, and partners, think purchasing organic foods is extremely bad—extremely good.	3.56	0.72
	Those who influence your behaviors, such as family, close friends, and sex partners, think you should purchase organic foods.	3.76	0.86
	Generally speaking, I do what these important others think I should do.	3.77	1.05
Perceived easiness (PE) [21,40]	I could easily buy organic foods if I wanted to.	2.50	0.92
Perceived control (PC) [21,40]	I perceive I have a total control over the purchase of organic foods.	3.89	1.03
Perceived trustworthiness (PT) [41,42] (0.87)	How much do you trust: Organic farmers? (totally distrust—totally trust)	3.45	0.86
	Organic processing enterprises? (totally distrust—totally trust)	3.28	0.92
	Government agencies that regulate organic foods? (totally distrust—totally trust)	3.45	0.94
	Organic certification authorities? (totally distrust—totally trust)	3.51	0.87
	Organic foods, in general? (totally distrust—totally trust)	3.55	0.75
Household income (Inc)	Your household monthly income per capita is: no more than RMB 3000 (1); 3001–5000 (2); 5001–10,000 (3); more than 10,000 (4).	1.60	0.76
Purchase intention (PInt) [24,40]	I intend to purchase organic foods during the next week.	3.24	1.03

(0.72)	I intend to purchase organic foods at the next food purchase.	3.69	0.83
Purchase behavior (PBeh) [40]	During the one-month period prior to the survey, have you once purchased organic foods? “1” — Yes; “0” — No.	0.26	0.44

Note: Responses were obtained using a five-point Likert scale, where “1” indicates strong disagreement and “5” indicates strong agreement.

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