

Anchoring Effect and Influence of Knowledge on Consumers' Willingness to Pay for Organic Food Online: An Online Experiment on Chinese Consumers of Organic Food

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Abstract: This study investigates how the anchoring effect affects people's willingness to pay for organic food in an online purchasing environment. The aim of this study is to find out whether anchoring has an impact and how it affects people's value perception of online organic food and, thus, their trust in and willingness to pay for organic food. Moreover, this study also aims to find out how knowledge of external reference prices of the same type of organic food provided by other online sellers moderates people's willingness to pay when given a price anchor. This study uses an online survey to perform the experiment and uses quantitative analysis methods to validate the results. The study finds that anchoring does have an impact on people's willingness to pay for organic food online, even when people face an exaggerated price provided by the online seller. Moreover, knowledge of external prices moderates people's willingness to pay. People tend to adjust their willingness to pay towards the average level of external prices.

Keywords: anchoring effect, behavioural economics, e-commerce, organic food

1. Introduction

1.1. Importance of Organic Food

With environmental sustainability being one of the goals of the United Nations, sustainable consumption of resources is a crucial approach to achieving the goal [1]. Concerns about ongoing environmental degradation and its impact on human well-being have captured the attention of the international academic community [2, 3]. Ethical behavior in various fields, including food production and consumption, has been a subject of extensive discussion due to its far-reaching consequences [4]. Scholars have observed a noticeable shift towards health consciousness among consumers, prompting the adoption of healthier diets and increased demand for organic food [5]. Emphasizing ecological balance and sustainability, organic farming practices aim to minimize adverse impacts on the environment [6]. Unlike conventional agriculture, organic farming abstains from using synthetic chemicals, pesticides, and fertilizers, favoring natural alternatives such as composting, crop rotation, and biological pest control. These practices not only curtail chemical pollution and safeguard soil health but also foster biodiversity preservation and habitat conservation.

[6]. Furthermore, organic food is believed to offer potential health benefits for consumers. By avoiding produce treated with synthetic pesticides and chemical fertilizers, individuals can reduce their exposure to potentially harmful substances [7].

1.2. Consumption of Organic Food

There is a large body of literature examining the willingness to consume organic food. The literature mainly focuses on the factors influencing consumers' behaviour in purchasing organic food in an offline purchasing environment. Most of the existing literature on offline organic food purchase intention focuses on consumers' attitudinal factors and demographic features. Studies on attitudinal factors mainly include people's health awareness [8, 9], environmental concerns [9, 10, 11, 12], trust [9, 11, 13, 14], optimism and pessimism [10]. Also, more recently, the influencers of attitudinal factors such as social and personal norms [15], framing effect [16, 17] and product knowledge [9, 18, 19] are studied. As for studies on demographic features, household size [20], education level [21] and income level [14] are mostly studied.

1.3. Online Consumption of Organic Food

However, with the popularity of online shopping, people are increasingly choosing to buy food online, and organic food is also increasingly sold online. At the same time, it has been shown that online purchasing environments have different factors influencing consumers' purchase intentions than offline [22], indicating that purchase intentions of organic food and willingness to pay warrant the development of a segmented study distinguishing between online and offline purchasing environments. However, studies on online purchasing intentions of organic food are still limited. Overall, the focus of these studies on online purchase intentions of organic food is relatively dispersed and has not yet reached scale [23]. Bryla [24] studied the profiles of online consumers of organic food and they shared a similar result. The studies show that younger groups (ages between 25 and 50) with large families (over three people), high levels of education and middle-class incomes are more likely to buy organic food online. Scuderi et al. [22] conducted a comparative study of offline and online purchasing of organic food and found that packaging and branding, which are significant for offline, do not influence online purchasing behaviour. However, consumers' word-of-mouth evaluations are an important influence on the online purchasing of organic food. Moreover, online shopping for organic food is not entirely free of visual influences. As Scuderi et al. [22] found out above, it is still influenced by labeling. A study [24] has found quality labels to be a significant driving factor; Neumayr and Moosauer's study [25] found that eco-labels, especially those designed in the traffic light type, had a significant positive effect on purchase intention. Last but not least, prices are found to be a significant factor influencing online purchase intentions. Although studies have shown that people are more interested in quality when buying organic food, and that high prices imply high quality, excessively high prices can reduce people's willingness to buy [9, 23, 24]. Nonetheless, to the author's best knowledge, none of these studies has considered the impact of the complex online shopping environment on pricing, such as limited-time discounts based on anchoring effects and easier access to external reference prices [26].

1.4. Current Online Consumption of Organic Food and Research Questions

In China, online shopping is widely used, and consumers' demand for organic food is rising. However, more is needed to know their intentions to purchase organic food online. Few studies have combined theories of online consumer behavior with the anchoring effect theory to understand online purchase intentions of organic food [26, 27]. The anchoring effect has been found to be significant in online shopping for familiar goods like clothes and shoes [26, 27]. However, there

needs to be more focus on organic food, which is still unfamiliar to many people. Therefore, exploring the anchoring effect on online purchase intentions of organic food is essential. Additionally, there is a need to understand the differences between online and offline purchasing environments. Online consumers can access abundant product information, including different prices, from various sellers. This external price information may affect their perception of the value of organic products and ultimately impact their purchase intention and willingness to pay.

Based on the literature above, there remain several research gaps as follows: the first is the theory gap of online organic food purchasing. Prior behavioural theories to study online organic food consumption are framing effect [17, 28] and salience [24, 25, 29]. Anchoring effect [30], which is a significant influencer on online purchase behavior, has not yet been studied in an online organic food purchasing environment. The second is the gap in research context. Existing studies have mainly focused on the offline shopping environment such as supermarkets, but nowadays, e-commerce platforms are very mature and online shopping is well developed. Online shopping has become one of the common ways for people to shop for products, including organic food [13]. There is a lack of research from a behavioural perspective of shopping on organic food online. This study fills this gap. The third is the method gap, showing in three aspects. First, in the existing research on organic food purchasing behaviour, the experiment usually selects only one type of organic food for the study and lacks comparative validation from other types of organic food [9, 17]. In this study, two kinds of organic food are selected and studied to serve as a corroboration of the anchoring effect with each other, enhancing the credibility of experimental results. Second, this study chose two products (organic corn and milk) that are more compatible with the context of online shopping. The organic food types chosen in previous studies were fresh meat [9] and vegetables [17], which are difficult to store for long periods of time and transport over long distances. Hence, to buy vegetables people preferred the already mature and developed takeaway software, which delivers on the same day of purchase [31]. Or, people prefer direct offline purchases of these types of organic food [32]. These food types are more compatible with the above purchasing methods, satisfying people's needs for freshness and speed. Therefore, organic corn and milk, which are easier to preserve and transport, were selected for this study to be more compatible with the online shopping context. Third, in order to better simulate the online shopping environment, this study also takes into account the fact that people can easily compare the prices of similar products from other online sellers [26]. Thus, this study specifically includes the real prices from other five online shops of organic corn and milk, respectively, as people's external reference prices.

Based on the research gap discovered, this paper proposes the following research questions:

- 1) Is the online purchase intention of organic food affected by the anchoring effect?
- 2) How do different price anchors affect consumers' online purchase intentions of organic food?
- 3) How do different price anchors affect consumers' believability in online organic food?
- 4) How do different price anchors affect consumers' willingness to pay with different internal reference prices of organic food?
- 5) How does external price information from other online stores affect consumers' willingness to pay?

The contributions of this research are from three perspectives. First, this paper fills a research gap in buying organic food in an online context, considering the unique purchase environment of online shopping. This study hence provides more suitable and targeted pricing strategies for online organic food merchants. It also provides basic information on consumers' current knowledge and internal reference prices of organic food. Second, this paper provides a new theoretical perspective to study the online purchasing behavior of organic food. The anchoring effect explains the mechanism by which price influences people's willingness to buy and pay. An attempt is made to identify the parts of the process of people's estimation of product value that can be influenced in

order to provide advice on online merchants' pricing strategies. Third, this study combined analytical methods with behavioural theory to focus on a precise segmented area of the organic food industry and thus responds to the calls from organic consumption researchers for better segmentation in this market by distinguishing types of organic food suitable for online selling [23, 33].

2. Literature Review and Hypothesis

2.1. Definition of Anchoring

The concept of anchoring bias was first observed in psychophysics research, where judgments of others' weights were found to be influenced by the presence of an extreme weight as a reference point [34]. Slovic [35] initially introduced the concept of anchoring in decision-making while examining preference reversals. However, the specific anchoring effect being referred to in the present study is the anchoring-and-adjustment heuristic, which was first proposed by Tversky and Kahneman [30] in their influential research on judgment under uncertainty. This heuristic suggests that anchoring bias occurs due to inadequate adjustments made during the decision-making process, as final judgments tend to assimilate towards the initial reference point from which a person begins their deliberations.

2.2. Anchoring Effect on Consumers

Research findings from various domains provide evidence for the anchoring effect. For example, Thorsteinson and his team [36] conducted field studies and experiments to demonstrate the impact of anchoring on performance judgments. Similarly, Oppenheimer et al. [37] conducted four experimental studies that revealed how anchoring effects can influence judgments across various conditions, indicating that these effects are not restricted to specific situations. Moreover, there is evidence showing that anchoring can be stronger under certain circumstances. According to Van Exel et al. [38], the existing literature suggests that in decision-making, stronger anchoring effects are observed when there is higher ambiguity with the problem, and when the credibility of information is perceived to be high or the bid/estimate is seen as more plausible. On the other hand, the effect of anchoring can be mitigated in some situations. Some studies show that when the anchor deviates far from the internal expectation, knowledge, or experience of people, it becomes less convincing [39].

In the realm of consumption, one factor named internal reference price should also be considered. An internal reference price (**IRP**) refers to the estimated price based on people's own value perception of a product, which is established through previous experiences [40]. In the process of purchasing organic food online, consumers might rely on their previous pricing encounters and their notion of a reasonable price derived from non-organic food as a foundation for determining the value of the organic food. Empirical studies by Ranyard et al. [41] provide evidence for this notion. Thus, this study proposes the following hypothesis:

H1: Internal reference price (IRP) will positively influence people's willingness to pay (WTP) for organic food.

However, the existence of internal reference price does not mean it will eliminate the anchoring effect. In the study of online bidding behavior by Wolk and Spann [26], they found that when the suggested bidding price for a product is exaggerated, consumers tend to be more skeptical about the real value of the good and have less willingness to pay, but they still give a higher bidding price. However, when consumer believe the suggested bidding price is plausible, they tend to be anchored more in the suggested bidding price even with more price information of the similar product on other websites. The mixed results of effect of anchoring indicate that anchoring can be affected by

different factors. This is because sometimes consumers may be uncertain about their internal reference price or may not have an internal reference price. Evidence shows that consumers have poor capability to recall the prices of a certain product [42]. Moreover, people need to take cognitive efforts to recall prices of a certain product. Consequently, people may lack a benchmark for evaluation of the value of an organic product. They may be uncertain about their internal reference price [43]. Hence, the advertised price for organic food provided by sellers may influence people's perception of the value of the organic food. Supporting evidence of impact of advertised reference prices (**ARP**) provided by seller has been found in the context of online bidding [44]. Thus, it is reasonable to make the following hypothesis:

H2a: Advertised reference price will positively impact people's willingness to pay for organic food online if it is higher than people's internal reference price.

H2b: Advertised reference price will negatively impact people's willingness to pay for organic food online if it is lower than people's internal reference price.

2.3. Factors Affecting Effects of Anchor

In order to find out the factors influencing anchoring as mentioned above, it is necessary to understand the mechanism of anchoring effect to take place. There are two main mechanisms to explain the process of anchoring. One is the anchoring-and-adjustment heuristics proposed by Tversky and Kahneman [30]. They suggested that people make adjustments of their judgments biased towards the initial value they receive, which is the anchor. The other one is the confirmatory hypothesis testing, generated from the empirical studies of "confirmatory search" by Chapman and Johnson [45] and "selective accessibility" by Strack and Mussweiler [46]. They criticized the proposal by Tversky and Kahneman [30] that their mechanism is limited to explain adjustment within a plausible range, but cannot explain extreme situations. However, the confirmatory hypothesis testing mechanism better explains the strong influence of the anchoring effect that is indicated to occur when information that aligns with the initial reference point becomes activated, leading to its influence. To conclude, the triggering mechanisms of the anchoring effect are not singular and depend on the specific context.

Based on the mechanisms above, the factors affecting the effect of anchor rely on two aspects. The first is the anchor itself. It contributes two possible factors, relevance to the question and extremity. The wheel of fortune experiment by Tversky and Kahneman [30] demonstrated that when people are unfamiliar with a certain question, they tend to rely more on the anchors, no matter it is relevant or extreme or not. The second aspect is from the aspect of people, which determines the plausibility of the anchor. It is dependent on people's own experience, knowledge and preferences. When people are familiar with the question, they tend to be more unaffected by the extreme anchors, which they think is not plausible. Chapman and Johnson [45] provided support for this notion by demonstrating that individuals with a high level of certainty regarding an answer tended to produce a smaller anchoring effect. Based on the studies above, it can be concluded that knowledge plays an important role in deciding the effect of anchoring.

2.4. Knowledge as a Moderator of Anchoring Effect in Consumption

Similar to the above finding, generally, in instances where consumers lack certainty regarding a product, they are inclined to mould their attitudes and purchasing intentions using readily available information, such as advertised prices. According to Kumar and Pandey [47], the final digit of a product's price plays a significant role in influencing consumer behavior. Shen et al. [48] also suggest that when the decision-making environment includes higher external reference prices for the similar product, people will have a higher willingness to pay. Nevertheless, organic food is still

in the early stages of development in the domestic market of China, and as a result, it remains relatively unfamiliar to the Chinese customers. Furthermore, Shan et al. [17] found that the cost of organic food in China is significantly greater than that of non-organic food. Because of their limited understanding of organic food, consumers often rely on alternative prices, such as the prices of comparable non-organic food, as their internal reference point [49]. This allows them to make comparisons and evaluate the relative value of organic food. Thus, consumers who encounter non-organic food priced lower than the organic label price may be less convinced of advertised reference prices (ARP) provided by sellers [50]. This perception arises from the discrepancy between the expected price based on the external anchor and the actual price of non-organic food. This discrepancy in pricing can significantly impact consumers' trust in organic food prices and lead to a distinct anchoring effect [51]. As a result, when individuals encounter a high ARP for organic food, they are prone to forming unfavorable attitudes and displaying decreased purchase intentions towards it.

Furthermore, the impact of knowledge on the anchoring effect varies across different fields, as highlighted by Englich [52]. For instance, Wolk and Spann [26] demonstrate that participants' knowledge moderates the anchoring effect. Both participants with high and low levels of product knowledge are affected by anchoring effects, but the effect is less pronounced among those with greater familiarity with the product. Furthermore, Zhang and Zhao [53] observed that the anchoring effect is also influenced by respondents' familiarity with the specific question being asked. Participants who possess a greater familiarity with a product are more prone to cognitive biases in decision-making influenced by various reference points brought by price anchors. Merchants provide prices for organic products and may set high or low prices. A merchant who sets a high price may raise the consumer's internal estimation of the value of organic food, and then the merchant may give an attractive discount on his product, which may make the consumer think that the product is a better value, thus increasing the willingness to buy. Thus, based on the lack of knowledge among organic food of Chinese online consumers, it is reasonable to have the following hypothesis:

H3a: An exaggerated advertised reference price (ARP) will have a larger impact on people's willingness to pay for organic food online than a plausible ARP does.

H3b: Trust in the advertised reference price will act as a moderating factor for people's willingness to pay for organic food.

The online purchasing experience differs from offline shopping in that people have greater access to price information through the internet, allowing them to better moderate their perceived anchors. This is unlike offline shopping, where access to information is often limited and time-consuming [44].

Thus, the knowledge of other external reference prices (ERP) online of the same organic product leads to the following hypothesis:

H4a: External reference prices of the same organic product will positively influence people's willingness to pay for organic food online if it is higher than people's internal reference price.

H4b: External reference prices of the same organic product will negatively influence people's willingness to pay for organic food online if it is lower than people's internal reference price.

3. Methodology

3.1. Experimental Design

This research will recruit 400 people who have the online purchasing habit. The number of participants lies in a reasonable range in similar studies [17, 26]. The participants should be born between 1980 and 1999. This is because, from the perspective of online shopping users, according

to data from the China Internet Network Information Center [54], the highest usage rate of online shopping is among the "80s-90s" generation, born between 1980 and 1995, reaching 93%. Moreover, the "post-95s" generation, born after 1995, exhibits the greatest potential for online shopping consumption, with 41.9% of "post-95s" online shoppers accounting for over 30% of their total daily consumption through online purchases, surpassing other age groups in terms of the proportion of online shopping expenditure. Hence, the group of people born between 1980 and 1999 represents current and future Chinese online shopping population more accurately.

The experiment was conducted in the form of an online survey questionnaire. The distribution of the questionnaire was done through Wenjuan.com¹, which is a professional research company in China that can pinpoint the population and filter out invalid samples. The questionnaire contains three parts. The first part of the questionnaire collected people's internal reference prices perceived in their minds of organic corn and milk. This part also collected their knowledge of the organic product by using a 5-point Likert scale. The second part of the questionnaire used the random distribution function of the survey platform to investigate people's willingness to pay when facing different anchor prices (See Appendix for the logic diagram of the questionnaire). People were randomly distributed with plausible, exaggerated and no reference prices of organic corn and milk. The value for plausible advertised reference price was based on the average prices of organic corn and milk found online, ¥33 for one kilogram of organic corn and ¥158 for a box of organic milk (250ml * 24 cartons). The exaggerated reference price was created by using 85% extra price of the average price (¥61 and ¥292) [55]. Specifically, when people were assigned plausible or exaggerated reference prices, they were additionally asked about their trust in that price. The trust survey consisted of four five-point scales. The questions regarding trust in the price included (1) Do you think the reference price of the organic food is real? (2) Do you think the reference price complies with the market price of the organic food? (3) Do you trust the seller of this organic product? (4) Are you skeptical of the reference price provided by the seller? The third part of the questionnaire investigated people's willingness to pay when browsing prices of the similar product in other online stores. It provided participants with five external reference prices of organic corn and milk from other online stores, respectively. These prices were collected from real online stores. After seeing external prices, participants were asked to state their willingness to pay given the advertised reference price of the organic product they were randomly assigned with. Finally, with information on external reference prices, they were asked about their purchase intention of the organic product with plausible or exaggerated prices.

3.2. Data

3.2.1. Data Collecting Method

The online questionnaire platform will provide a basic description of the results. Wenjuan.com is one of China's largest platforms for online surveys, equivalent to Qualtrics, Survey Monkey or Cloud Research, and offers online questionnaire design and survey capabilities to businesses, research institutions, and individuals [56]. The questionnaire will be distributed randomly among people of "80s-90s" generation, the majority online consumption group in China.

To ensure the quality of data, first, before the questionnaire was distributed, 180 participants were first called to try to fill out the questionnaire. They were asked to fill out the questionnaire truthfully. The questionnaire was formally distributed only after validating the feasibility of the questionnaire and modifying the questionnaire based on participants' feedback. Second, based on the data from the pilot questionnaire, the least effective response time was no less than 2 minutes,

¹ www.wenjuan.com

with the average answering time being 5 minutes. The survey platform Wenjuan.com has a screening function that records the response time of participants. Therefore, in designing the questionnaire screening method, questionnaires with an answer time of less than 2 minutes were considered invalid. Third, in the second part of the questionnaire, respondents were asked how much they trusted the given price anchor. As mentioned above, there were four five-point Likert scale questions to measure trust. The first three questions are positively correlated with trust, i.e. the more consumers trust the price anchor, the higher the rating is given. The last question was negatively correlated with trust, i.e., the more consumers trusted the price, the lower the rate given. In the setup of the questionnaire screening logic on Wenjuan.com platform, the questionnaire was judged to be invalid when the ratings of the first three questions and the last question were both greater than or less than 3.

3.2.2. Data Analysis Method

Data will be analyzed with STATA. First, a descriptive analysis will be presented to show the basic information gathered from all participants. Second, after cleaning the data, and removing missing or invalid questionnaire responses, a manipulation check will be conducted to examine the believability of the price of organic products. Third, the study will compare whether a higher anchor (exaggerated ARP) will generate a higher price given by consumers than a lower anchor (plausible ARP). Then, the study will examine how participants' willingness to pay is affected by different anchors. Analysis of variance (ANOVA) is used to examine the anchoring effect on consumers' attitudes and willingness to pay for online organic food. Further, the effect of ERP on people's trust in advertised reference prices and willingness to pay will be examined through ANOVA.

3.2.3. Ethics

Personal information was gathered solely for the purpose of the study. Before gathering personal information, the participants will be asked if they are willing to reveal their income, education, age, and region. The collected data will be stored on a password-protected device. Once the study is completed, all data will be securely deleted.

4. Results

4.1. Descriptive Analysis

A total of 1,500 questionnaires were sent out and 1,423 valid responses were returned. As shown in Table 1, average internal reference price (**IRP**) for organic corn and milk (¥26.64 and ¥97.9) are both lower than the average market price (¥33 and ¥158 for organic corn and milk respectively). Generally, when participants were shown plausible or exaggerated reference price, average willingness to pay (**WTP**) for organic products is affected, being higher than initial internal reference price. When participants were shown plausible reference prices, the average WTP for organic products (¥30.82 for organic corn and ¥119 for organic milk) moved towards the given plausible reference price (¥33 for organic corn and ¥158 for organic milk), higher than their IRP. WTP for organic corn and milk increased by 15.69% and 21.55%, respectively, compared to the internal reference price. Meanwhile, the standard deviation of WTP for organic products given plausible reference prices reduced significantly (reduced by 4.18 for corn and 6.28 for milk) than the standard deviations of participant's internal reference prices. When participants are shown exaggerated reference prices for organic products (¥61 for organic corn and ¥292 for organic milk), WTP for organic food was higher (¥44.64 for organic corn and ¥147.22 for organic milk)

than when faced with plausible reference prices. However, the variation in participants' WTP became larger.

Table 1: Average willingness to pay for organic food (¥ CNY).

Types of reference price	WTP for organic corn	Obs.	Std. Dev.	WTP for organic milk	Obs.	Std. Dev.
Internal	26.64	1423	16.81	97.9	1423	45.2
None	35.96	483	22.46	100.26	490	48.66
Plausible	30.82	450	10.05	119	464	38.92
Exaggerated	44.64	490	17.65	147.22	469	76.5

As discussed in the methodology, four questions were used to determine participants' trust of different advertised reference prices for organic corn and milk. The Cronbach's alpha is shown in Table 2. The results indicate high credibility of the answers to the four questions based on different types of ARPs. It is clear from Table 3 that reasonable reference prices are more believable than exaggerated reference prices. Participants were more skeptical to exaggerated reference prices.

Table 2: Cronbach's alpha of trust of ARP of organic corn and milk.

	Corn	Milk
Plausible ARP	0.88	0.92
Exaggerated ARP	0.92	0.94

Note: ARP means Advertised reference price, including plausible advertised reference price (¥33 for corn and ¥158 for milk) and exaggerated reference price (¥61 for corn and ¥292 for milk).

Table 3: Trust of ARP of organic corn and milk.

Variable	Obs.	Mean	Std. dev.	Min	Max
TPC1	450	3.58	0.96	1	5
TPC2	450	3.52	1.04	1	5
TPC3	449	3.57	0.96	1	5
TPC4	450	2.65	1.11	1	5
TPM1	464	3.35	1.17	1	5
TPM2	464	3.23	1.2	1	5
TPM3	464	3.36	1.19	1	5
TPM4	463	2.82	1.22	1	5
TEC1	490	3.07	1.17	1	5
TEC2	490	3.06	1.16	1	5
TEC3	489	3.09	1.19	1	5
TEC4	490	3.13	1.18	1	5
TEM1	469	2.73	1.34	1	5
TEM2	469	2.63	1.32	1	5
TEM3	469	2.74	1.31	1	5
TEM4	469	3.52	1.23	1	5

Then, to see the extent to which various reference prices were assimilated in willingness to pay [57], the average differences between willingness to pay (WTP) and internal reference price (IRP) and advertised reference price (ARP) were analyzed. The results are shown in Table 4 above. Generally, the differences between WTP and IRP vary a lot depending on whether there is an ARP.

This pattern indicates that apart from IRP, WTP is also affected by ARP. Based on the results in Table 4, different types of reference prices are assimilated to a different degree. Firstly, if there was no ARP, participants tended to base their WTP on their IRP. Secondly, Participants tended to estimate their WTP based on the ARP rather than their IRP if ARP was lower than IRP, with the difference between ARP and WTP being -5.44 and -8.7 for organic corn and milk respectively. Thirdly, if ARP was greater than IRP, mixed results were found regarding different types of organic food. In the case of organic corn, participants tended to base their WTP more on ARP rather than IRP. In the case of organic milk, participants became reluctant to base their WTP on the ARP. Instead, they based their WTP more on their IRP, but not as much as when there was no ARP. To conclude, when there was no ARP, participants tended to base their WTP on their IRP. When there was ARP, participants based their WTP more on a low ARP ($ARP < IRP$) rather than a high ARP.

Table 4: Average differences between WTP and IRP and ARP for various treatment conditions.

ARP condition	Organic corn			Organic milk		
	IRP - WTP	ARP - WTP	Obs.	IRP - WTP	ARP - WTP	Obs.
No ARP	-9.62	/	483	-4.96	/	490
Low ARP	11.75	-5.44	138	35.8	-8.7	54
High ARP	-15.17	12.16	802	-38.2	98.37	879

4.2. Test of Hypothesis

To further determine the effect of different reference prices on willingness to pay, regression analysis was used for validation.

4.2.1. Hypothesis 1

H1: Internal reference price (IRP) will positively influence people's willingness to pay (WTP) for organic food.

To test the relationship between IRP and WTP, a regression analysis was performed with STATA (Table 5). The willingness to pay for organic food as the dependent variable and internal reference price (IRP) as the independent variable were used for regression analysis. As can be seen from Table 5, the analysis of the results of the F-test can be obtained, the significance P-value is 0.000, which presents significance at the level of rejecting the original hypothesis that the regression coefficient is 0, so the model is valid. With the IRP coefficient of 0.941, it can be seen that people's internal reference price will have a positive impact on the value perception of organic food, thus Hypothesis 1 is accepted.

Table 5: Internal reference price's (IRP) effect on people's willingness to pay (WTP).

	Non-standardized Coefficient		Standardization coefficient	t	P
	B	Standard error	Beta		
Constant	20.997	1.211	-	17.334	0
IRP	0.941	0.015	0.757	61.696	0

Note: $R^2=0.572$; $F=3806.437$ $P=0.000$

4.2.2. Hypothesis 2

H2a: Advertised reference price (ARP) will positively impact people's willingness to pay (WTP) for organic food online if it is higher than people's internal reference price (IRP).

H2b: Advertised reference price will negatively impact people's willingness to pay for organic food online if it is lower than people's internal reference price

In order to explore the effect of ARP on WTP based on different IRP scenarios, two-factor ANOVA was used in the test (Table 6). For the variable "Is the ARP greater than the IRP", the analysis of the results of the F-test shows that the significance p-value is 0.000. Thus, whether the ARP is greater than IRP has a significant effect on the WTP for the organic food products, and there is a main effect. For variable "product category", from the results of F test, the significance P value is 0.000, which is significant at the level of 1%. Hence, variable "product category" has a significant impact on WTP for organic food, and there is a main effect. As for variable "is the ARP greater than the IRP" * "product category", from the analysis of the results of F test, it can be concluded that the significance P value is 0.000, which is significant at the level of 1%. Hence, the size of ARP compared to IRP and the types of organic food have a significant impact on WTP for organic food.

Table 6: ARP's effect on WTP with different conditions of IRP.

Item	Sum of Squares	Freedom	Mean Square	F	P
Intercept	5506820.804	one	5506820.804	2768.925	0.000***
Is the ARP > IRP?	123763.402	one	123763.402	62.23	0.000***
Product category	1954432.416	one	1954432.416	982.723	0.000***
Is the ARP > IRP * product category	85290.228	one	85290.228	42.885	0.000***

Table 7 shows the results of multiple comparisons afterwards. From the above table, it can be seen that the P value is 0.470, and the difference is not significant. Different from the above two-factor ANOVA, it shows that whether the ARP is greater than the IRP has no effect on WTP for organic food without considering the interaction item, that is, without considering the difference between corn and milk. The interactive items in the above table are significant. Combined with Chart 1 below, it can be seen that whether the ARP for milk is greater than the IRP has a significant impact on the WTP for organic food. More specifically, if the ARP is lower than people's IRP, WTP will be higher than the situation where ARP is lower than IRP. Therefore, Hypothesis 2 is confirmed.

Table 7: Impact of ARP for organic corn and milk on WTP with different conditions of IRP.

Whether ARP > IRP (I)	Whether ARP > IRP (J)	Mean difference (I-J)	standard error	P	95% confidence interval	
					lower limit	upper limit
yes	no	3.626	5.493	0.47	-7.139	14.392
no	yes	-3.626	5.493	0.47	-14.392	7.139

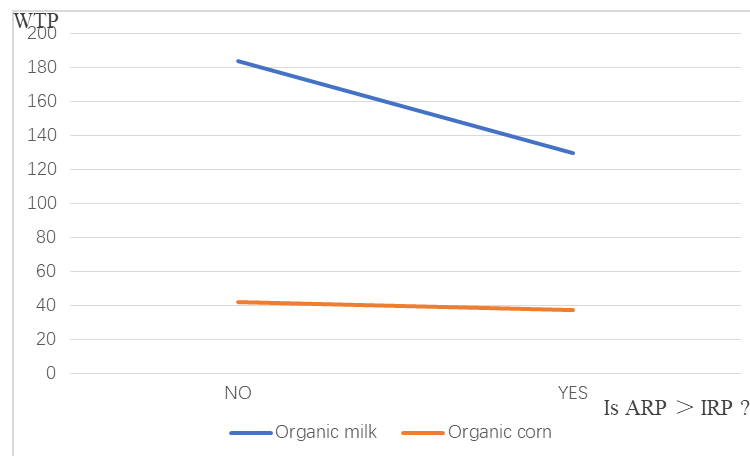


Figure 1: WTP for organic products with different conditions of ARP (¥ CNY).

4.2.3. Hypothesis 3

H3a: An exaggerated advertised reference price (ARP) will have a larger impact on people's willingness to pay for organic food online than a plausible ARP does.

H3b: Trust in the advertised reference price will act as a moderating factor for people's willingness to pay for organic food.

Table 8 shows the three models corresponding to the adjustment analysis regarding ARP of organic corn. In the first model, the ARP coefficient is 13.821, and the corresponding P value is 0.000, less than 0.05, which rejects the original hypothesis, indicating that the advertising price has a significant impact on WTP. While the coefficient of 13.821 indicates that the WTP corresponding to the exaggerated ARP is significantly higher than the average WTP corresponding to the plausible ARP. Hence, the exaggerated ARP has a greater impact on the WTP of organic food than the plausible ARP. However, in Model 3, the regression coefficient of interactive items is significant, which shows that trust of ARP has a regulating effect on the influence of types of ARP (plausible and exaggerated) on the WTP for organic food. From the chart below (Chart 2), it can be seen that when the trust level is low, the influence of ARP on the WTP for organic food becomes smaller.

Table 8: Adjustment analysis of effect of different types of ARP on WTP (Organic corn).

	Model 1				Model 2			
	coefficient	Standard error	t	P	coefficient	Standard error	t	P
const	16.994	1.518	11.197	0.00***	-13.563	3.112	-4.358	0.00***
ARP	13.821	0.948	14.581	0.00***	8.541	0.773	11.051	0.00***
Trust of ARP					15.922	0.912	17.457	0.00***
ARP * trust of ARP								
R ²		0.185				0.279		
Adjust r		0.184				0.277		
F	F(940, 1)=212.601,P=0.00***				F(2, 937)=181.083,P=0.00***			
ΔR ²		0.185				0.279		
ΔF	ΔF(1, 940)=212.601,P=0.00***				ΔF(1, 937)=122.114,P=0.00***			

Dependent variable: the value cognition of organic food

Note: ***, ** and * represent the significance levels of 1%, 5% and 10% respectively.

Table 8 (Cont.): Adjustment analysis of effect of different types of ARP on WTP (Organic corn).

	Model 3			
	coefficient	Standard error	t	P
const	27.32	8.87	3.08	0.002***
ARP	-9.07	5.17	-1.76	0.079*
Trust of ARP	-3.95	2.65	-1.49	0.14
ARP * trust of ARP	7.72	1.57	4.91	0.000***
R ²	0.30			
Adjust r	0.30			
F	F(3, 936)=131.749,P=0.000***			
ΔR ²	0.30			
ΔF	ΔF(1, 936)=209.693,P=0.000***			
Dependent variable: the value cognition of organic food				

Note: ***, ** and * represent the significance levels of 1%, 5% and 10% respectively.

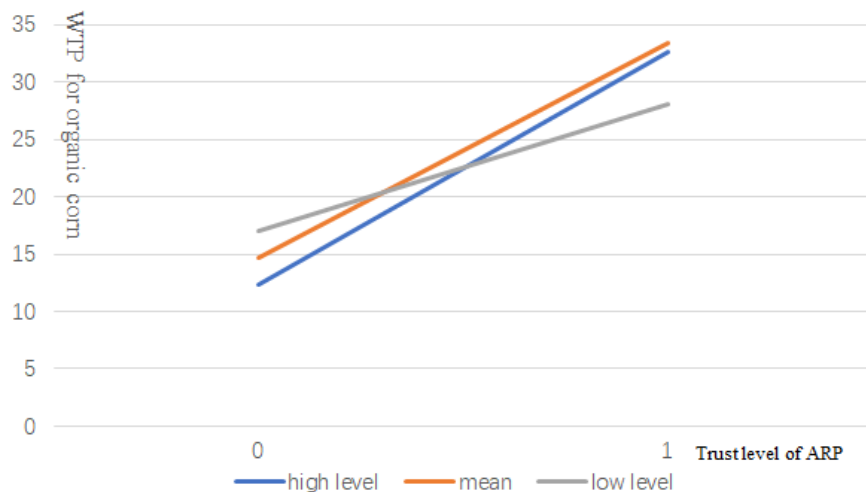


Figure 2: WTP and trust of ARP of organic corn (¥ CNY).

The conclusion of adjustment analysis regarding ARP or organic milk and its trust level is completely consistent with the conclusion of the case of organic corn above (See Appendix for Table 1 and Chart 1). Therefore, Hypothesis 3 is accepted.

4.2.4. Hypothesis 4

H4a: External reference prices of the same organic product will positively influence people's willingness to pay for organic food online if it is higher than people's internal reference price.

H4b: External reference prices of the same organic product will negatively influence people's willingness to pay for organic food online if it is lower than people's internal reference price.

To test the fourth hypothesis, a two-factor ANOVA was conducted (Table 9). In the survey, five external prices of organic corn and milk were provided to participants respectively to simulate the process of comparing prices when doing online shopping. The average external reference price for organic corn and milk was ¥24.4 and ¥203.4 respectively, based on the real prices online. As for whether the average external reference price is greater than IRP, results of F test show that the significant P value is 0.000***, which is significant at the level of 1% and has a significant impact

on WTP for organic food, and there is a main effect. Moreover, for variable “product category”, from the results of F test, it can be concluded that the significance P value is 0.000, which is significant at the level of 1%. Thus, product category has a significant impact on the WTP for organic food. Lastly, as for whether the external average price of interactive items is greater than the $IRP * product\ category$, the results of F test show that the significant P value is 0.000***, which is significant in the level of 1%. Therefore, the external price and product category jointly have a significant impact on WTP for organic food.

Table 9: Impact of External reference price on WTP for organic products.

item	sum of squares	freedom	mean square	F	P
intercept	6398067	one	6398066.509	3644.32	0.000***
Is the average external reference price > IRP?	629789	one	629789.03	358.726	0.000***
product category	2724804	one	2724804.302	1552.04	0.000***
Is the external average price > IRP * product category?	414120.1	one	414120.079	235.882	0.000***

As shown in Table 10, when the average external reference price is greater than IRP, the average WTP will be significantly higher than the opposite situation. Meanwhile, when the average external reference price is lower than IRP, the average WTP will be lower than the opposite situation. From Chart 3 below, when the average external reference price is greater than IRP, the average WTP will be significantly higher than the opposite situation. This conclusion is valid in both organic products, and the influence is more significant in organic milk. Therefore, Hypothesis 4 is accepted.

Table 10: Impact of external reference price for organic corn and milk on WTP with different conditions of IRP.

Is average external reference price > IRP (I)	Is average external reference price > IRP (J)	Mean difference (I-J)	standard error	P	95% confidence interval	
					lower limit	upper limit
yes	no	31.525	2.398	0.000***	26.825	36.226
no	yes	-31.525	2.398	0.000***	-36.226	-26.825

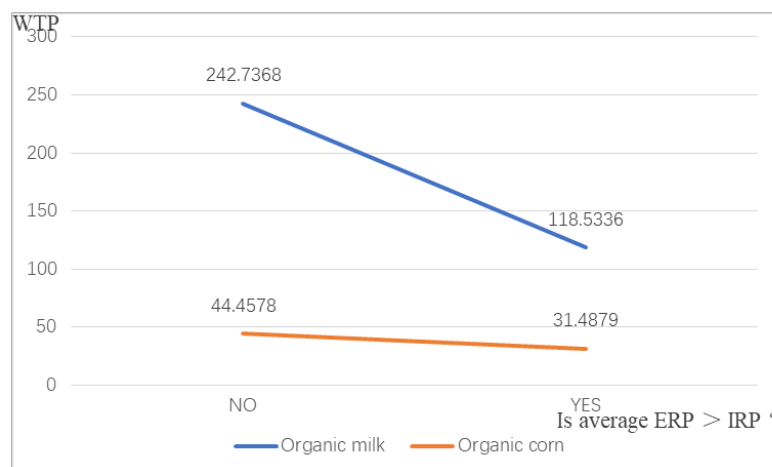


Figure 3: Average WTP for organic products given external reference prices (¥ CNY).

4.3. Discussion

4.3.1. Main Findings

First, the study found that people's knowledge of organic food was not high, and their IRP for the same organic product varied widely. Their IRP is generally lower than the average market price of organic products (¥26.64 for corn and ¥97.9 for milk). It has been shown that when people know little about organic food, they tend to estimate the price of organic food based on past experience. And generally the price of non-organic food is lower than the price of organic food [17]. Therefore, people will use the price of a similar non-organic product with a lower price as an anchor point to generate a lower IRP. It has also been shown that people's memory is not as good as they think, and they may not remember the price of a product thus not even have an IRP [43]. Also, recalling the price requires cognitive effort [43], so the IRP they give when asked is an internal arbitrary estimate.

Second, this study confirms that the anchoring effect influences people's decisions when purchasing organic food online. The merchant's provided ARP serves as an anchor point, and when it falls within a reasonable range, people trust it more, leading to increased willingness to pay (WTP) compared to their original IRP. Conversely, a higher anchor price reduces trust in the price, increases skepticism, and decreases WTP. These findings align with Golob et al.'s research [11] and similar studies showing that significant deviations from people's IRP weaken the anchoring effect [58]. Surprisingly, this study shows that even with an exaggerated ARP, people's average WTP still exceeds that with a plausible ARP though people are skeptical about the price. Thus, the anchoring effect remains influential even with an exaggerated merchant-provided ARP, which aligns with Wolk and Spann's [26] findings in online auctions, where high reference prices lead to higher bids but lower purchase intentions. Furthermore, the study reveals that the impact of ARPs varies with the type of product. People are less sensitive to the ARP of corn compared to milk, possibly due to the inclusion of IRP equal to ARP during the study, which may reduce the effect of ARP on corn's WTP.

Third, this study demonstrates that the prices offered by other merchants in the online shopping environment affect people's WTP. A higher average external price increases people's willingness to pay, and a lower average external price reduces people's willingness to pay in the face of higher advertised reference prices. The study by Wolk and Spann [26] also confirms that when faced with lower external prices, people's willingness to pay decreases according to the external price. However, their study shows that WTP is almost unaffected by external prices when faced with higher external prices, which is inconsistent with the findings of this paper.

4.3.2. Limitations and Suggestions

First, specific reasons behind correlations between ARP and WTP need to be further explored. This paper proves that the anchoring effect affects people's WTP for organic food, people tend to anchor their value perception of organic products in the advertised reference price provided by online merchants. However, the detailed relationship between the anchor price (advertised reference price) given by merchants and WTP needs further research. For example, when people face higher ARP, there are still some people who have higher trust in this price. The possible reasons behind this need to be further investigated. Potential reasons are that people do not know much about the price of organic products so they are biased to trust the price given by the merchant [58]. Another potential explanation is that people are more interested in the quality of organic food when buying it [24] and high price implies high quality.

Second, the definition of knowledge is limited to external reference prices of the same organic product in other online stores. Knowledge can encompass many factors when examining the impact

of knowledge on WTP. This study limits the scope of knowledge to external reference prices online. Only a portion of the knowledge can be explained for WTP. Other related studies have a similar problem with a fragmented and homogenous definition and scope of knowledge. Shan et al. [17] also investigated the effect of knowledge on the WTP of offline organic food, and they limited the scope of knowledge to the level of education. It was found that the higher the level of education, the less sensitive people are to anchor prices. In future studies, it could be considered to list the factors included in knowledge and study their effects on willingness to pay for organic food, as well as the endogeneity between the factors.

Third, due to the complexity of the online shopping environment, only one factor, price, was selected in this study to simulate the information seen in online shopping. But there are many other factors, such as reviews and product description pages, that have not been studied [13], and in the future, these variables can be added to the scope of knowledge to study the impact on people's WTP as well.

Last but not least, research has demonstrated that the variation in people's willingness to pay is large when faced with unfamiliar organic foods, but the exact reasons for this are complex [17, 43]. Therefore, in the future, when asking people about their IRP for organic food, it would be useful to ask more about the reasons for giving this IRP, which would help to study in more detail the factors that are referenced by people's price perceptions of organic food. With these factors discovered, further research can be more targeted to improve people's perception of organic food.

5. Conclusion

The research aimed to investigate how the anchoring effect affects people's willingness to pay for organic food in an online shopping environment. Based on a survey method and quantitative analysis, it can be concluded that anchoring does have an impact on people's value perception and willingness to pay for organic food online. The advertised reference prices (ARP) provided by online merchants can act as an anchor. Both plausible and exaggerated advertised reference prices affect people's willingness to pay. However, when people are given exaggerated ARP, although their value perception of that organic food increases, their purchase intention and trust in that product decreases. Moreover, knowledge of external reference prices of the similar organic product online can moderate the anchoring effect. This indicates that when people are shopping online, if they compare the prices in other online stores, they will adjust their willingness to pay to the average level of external prices, no matter whether ARP is low or high. This means that prices that are too low or too high compared to peers do not increase consumers' willingness to buy.

Based on the finding, suggestions for online sellers of organic are clear. Online sellers can raise the anchor point by pricing slightly above the average market price to increase the consumer's perception of the value of the product. Then sellers can offer a certain amount of discount, so that the final price of the transaction is maintained between the lower and higher prices in the market of similar products; it is easier to gain the trust of consumers as well as to increase the willingness of consumers to buy. This is because it allows them to feel that they have bought their own higher-value organic food at a more affordable price.

The study's conclusion suggests there is room for improvement in future research. It is essential to conduct further studies to determine the factors that influence people's trust in organic food pricing online. The study found that knowledge has a moderate effect on this trust. Still, there is a lack of clarity and consistency in defining and measuring ability in this context. Therefore, future research should focus on identifying the specific factors that contribute to knowledge about purchasing organic food online. Lastly, to better understand how people form their internal reference prices for organic food online, it is recommended to ask them about the reasons behind their chosen price point.

Overall, this study bridged the gap in studying consumers' willingness to pay for organic food in a more segmented area by distinguishing online and offline purchase environments. It also provides a new theoretical perspective to study the online purchase behaviour of organic food by applying the anchoring effect in determining willingness to pay. With the research findings, more targeted and suitable suggestions were given to online sellers of organic food.

References

- [1] Bina, O. (2013) *The Green Economy and Sustainable Development: An Uneasy Balance?* *Environment and Planning. C, Government & Policy*, [Online] 31 (6), 1023–1047.
- [2] Ferrer-i-Carbonell, A. and Gowdy, J. M. (2007) *Environmental Degradation and Happiness*. *Ecological Economics*, [Online] 60 (3), 509–516.
- [3] Lima, K.D.L., Veiga A.L., Paço, A. and Zonatto, V.C. da S. (2023) *Towards Sustainable Development: A Systematic Review of the Past Decade's Literature on the Social, Environment and Governance and Universities in Latin America*. *International Journal of Sustainability in Higher Education*, [Online] 24 (2), 279–298.
- [4] Carrington, M.J., Benjamin A.N. and Gregory J.W. (2010) *Why Ethical Consumers Don't Walk Their Talk: Towards a Framework for Understanding the Gap Between the Ethical Purchase Intentions and Actual Buying Behaviour of Ethically Minded Consumers*. *Journal of Business Ethics*, [Online] 97 (1), 139–158.
- [5] Rizzo, G., Borrello, M., Dara Guccione, G., Schifani, G. and Cembalo, L. (2020) *Organic Food Consumption: The Relevance of the Health Attribute*. *Sustainability (Basel, Switzerland)*, [Online] 12 (2), 595–.
- [6] Wang, X., Pacho, F., Liu, J. and Kajungiro, R. (2019) *Factors Influencing Organic Food Purchase Intention in Developing Countries and the Moderating Role of Knowledge*. *Sustainability (Basel, Switzerland)*, [Online] 11 (1), 209–.
- [7] Rana, J. and Paul, J. (2020) *Health Motive and the Purchase of Organic Food: A Meta-Analytic Review*. *International Journal of Consumer Studies*, [Online] 44 (2), 162–171.
- [8] Asioli, D., Aschemann-Witzel, J., Caputo, V., Vecchio, R., Annunziata, A., Næs, T. and Varela, P. (2017) *Making Sense of the 'Clean Label' Trends: A Review of Consumer Food Choice Behavior and Discussion of Industry Implications*. *Food Research International*, [Online] 99 (Pt 1), 58–71.
- [9] Nguyen, H.V., Nguyen, N., Nguyen, B.K., Lobo, A. and Vu, P.A. (2019) *Organic Food Purchases in an Emerging Market: The Influence of Consumers' Personal Factors and Green Marketing Practices of Food Stores*. *International Journal of Environmental Research and Public Health*, [Online] 16 (6), 1037–.
- [10] Sadiq, M., Paul, J. and Bharti, K. (2020) *Dispositional Traits and Organic Food Consumption*. *Journal of Cleaner Production*, [Online] 266121961–.
- [11] Golob, U., Kos Koklic, M., Podnar, K. and Zabkar, V. (2018) *The Role of Environmentally Conscious Purchase Behaviour and Green Scepticism in Organic Food Consumption*. *British Food Journal (1966)*, [Online] 120 (10), 2411–2424.
- [12] Ahmed, N., Li, C., Khan, A., Qalati, S.A., Naz, S. and Rana, F. (2021) *Purchase Intention Toward Organic Food Among Young Consumers Using Theory of Planned Behavior: Role of Environmental Concerns and Environmental Awareness*. *Journal of Environmental Planning and Management*, [Online] 64 (5), 796–822.
- [13] Yue, L., Liu, Y. and Wei, X. (2017) *Influence of Online Product Presentation on Consumers' Trust in Organic Food: A Mediated Moderation Model*. *British food journal (1966)*. [Online] 119 (12), 2724–2739.
- [14] Dumortier, J., Evans, K.S., Grebitus, C. and Martin, P.A. (2017) *The Influence of Trust and Attitudes on the Purchase Frequency of Organic Produce*. *Journal of International Food & Agribusiness Marketing*, [Online] 29 (1), 46–69.
- [15] Mahasuweerachai, P. (2022) *How to Influence Restaurant Employees' Food Safety Behaviour: An Application of the Theory of Planned Behavior and Norm Activation Model*. *Journal of Foodservice Business Research*, [Online], 1–23.
- [16] Jäger, A.K. and Weber, A. (2020) *Increasing Sustainable Consumption: Message Framing and in-Store Technology*. *International Journal of Retail & Distribution Management*, [Online] 48 (8), 803–824.
- [17] Shan, L., Diao, H. and Wu, L. (2020) *Influence of the Framing Effect, Anchoring Effect, and Knowledge on Consumers' Attitude and Purchase Intention of Organic Food*. *Frontiers in Psychology*, [Online] 112022–2022.
- [18] Wu, W., Zhou, L. and Chien, H. (2019) *Impact of Consumer Awareness, Knowledge, and Attitudes on Organic Rice Purchasing Behavior in China*. *Journal of Food Products Marketing*, [Online] 25 (5), 549–565.
- [19] Kushwah, S., Dhir, A. and Sagar, M. (2019) *Understanding Consumer Resistance to the Consumption of Organic Food. A Study of Ethical Consumption, Purchasing, and Choice Behaviour*. *Food Quality and Preference*, [Online] 771–14.

- [20] Nandi, R., Bokelmann, W., Gowdru, N.V. and Dias, G. (2017) Factors Influencing Consumers' Willingness to Pay for Organic Fruits and Vegetables: Empirical Evidence from a Consumer Survey in India. *Journal of Food Products Marketing*, [Online] 23 (4), 430–451.
- [21] Janssen, M. (2018) Determinants of Organic Food Purchases: Evidence from Household Panel Data. *Food Quality and Preference*, [Online] 6819–28.
- [22] Scuderi, A., Bellia, C., Teresa Foti, V., Sturiale, L. and Timpanaro, G. (2019) Evaluation of Consumers' Purchasing Process for Organic Food Products. *AIMS Agriculture and Food*, [Online] 4 (2), 251–265.
- [23] Liang, R.-D. (2014) Enthusiastically Consuming Organic Food: An Analysis of the Online Organic Food Purchasing Behaviors of Consumers with Different Food-Related Lifestyles. *Internet Research*, [Online] 24 (5), 587–607.
- [24] Bryła, P. (2018) Organic Food Online Shopping in Poland. *British Food Journal* (1966), [Online] 120 (5), 1015–1027.
- [25] Neumayr, L. and Moosauer, C. (2021) How to Induce Sales of Sustainable and Organic Food: The Case of A Traffic Light Eco-Label in Online Grocery Shopping. *Journal of Cleaner Production*, [Online] 328129584–.
- [26] Wolk, A. and Spann, M. (2008) The Effects of Reference Prices on Bidding Behavior in Interactive Pricing Mechanisms. *Journal of Interactive Marketing*, [Online] 22 (4), 2–18.
- [27] Köcher, S., Jugovac, M., Jannach, D. and Holzmüller, H.H. (2019) New Hidden Persuaders: An Investigation of Attribute-Level Anchoring Effects of Product Recommendations. *Journal of Retailing*, [Online] 95 (1), 24–41.
- [28] Khan, K., Hameed, I., Akram, U. and Hussainy, S.K. (2023) Do Normative Triggers and Motivations Influence the Intention to Purchase Organic Food? An Application of the Goal-Framing Theory. *British Food Journal* (1966), [Online] 125 (3), 886–906.
- [29] Danner, H. and Thøgersen, J. (2022) Does Online Chatter Matter for Consumer Behaviour? A Priming Experiment on Organic Food. *International Journal of Consumer Studies*, [Online] 46 (3), 850–869.
- [30] Tversky, A. and Kahneman, D. (1974) Judgment under Uncertainty: Heuristics and Biases. *Science (American Association for the Advancement of Science)*, [Online] 185 (4157), 1124–1131.
- [31] Sun, X. (2021) 'New E-Commerce Model and Development Strategy of Fresh Food E-Commerce Platform Based on ReTech', in *E3S Web of Conferences*, [Online] 2021 Les Ulis: EDP Sciences. p. 1004–.
- [32] Morales, L.E., Ehmke, M.D. and Sheridan, A. (2022) Consumer Trust and Purchase of Perishable Fresh Food Online Versus In-Store: The Case of Beef. *Journal of International Food & Agribusiness Marketing*, [Online] ahead-of-print (ahead-of-print), 1–23.
- [33] Hughner, R.S., McDonagh, P., Prothero, A., Shultz II, C.J. and Stanton, J. (2007) Who Are Organic Food Consumers? A compilation and Review of Why People Purchase Organic Food. *Journal of Consumer Behaviour*, [Online] 6 (2-3), 94–110.
- [34] Chapman, G.B. and Johnson, E.J. (1999) Anchoring, Activation, and the Construction of Values. *Organizational Behavior and Human Decision Processes*, [Online] 79 (2), 115–153.
- [35] Slovic, P. (1967) The Relative Influence of Probabilities and Payoffs upon Perceived Risk of A Gamble. *Psychonomic Science*, [Online] 9 (4), 223–224.
- [36] Thorsteinson, T.J., Breier, J., Atwell, A., Hamilton, C. and Privette, M. (2008) Anchoring Effects on Performance Judgments. *Organizational Behavior and Human Decision Processes*, [Online] 107 (1), 29–40.
- [37] Oppenheimer, D.M., LeBoeuf, R.A. and Brewer, N.T. (2008) Anchors Aweigh: A Demonstration of Cross-Modality Anchoring and Magnitude Priming. *Cognition*, [Online] 106 (1), 13–26.
- [38] van Exel, N.J., Brouwer, W.B., van den Berg, B. and Koopmanschap, M.A. (2006) With A Little Help from An Anchor. Discussion and Evidence of Anchoring Effects in Contingent Valuation. *The Journal of Socio-Economics*, [Online] 35 (5), 836–853.
- [39] Mussweiler, T., Strack, F. and Pfeiffer, T. (2000) Overcoming the Inevitable Anchoring Effect: Considering the Opposite Compensates for Selective Accessibility. *Personality & Social Psychology Bulletin*, [Online] 26 (9), 1142–1150.
- [40] Winer, R. (1986) A Reference Price Model of Brand Choice for Frequently Purchased Products. *The Journal of Consumer Research*, [Online] 13 (2), 250–256.
- [41] Ranyard, R., Charlton, J.P. and Williamson, J. (2001) The Role of Internal Reference Prices in Consumers' Willingness to Pay Judgments: Thaler's Beer Pricing Task Revisited. *Acta Psychologica*, [Online] 106 (3), 265–283.
- [42] Dickson, P.R. and Sawyer, A.G. (1990) The Price Knowledge and Search of Supermarket Shoppers. *Journal of Marketing*, [Online] 54 (3), 42–.
- [43] Chernev, A. (2003) Reverse Pricing and Online Price Elicitation Strategies in Consumer Choice. *Journal of Consumer Psychology*, [Online] 13 (1), 51–62.

- [44] Kamins, M.A., Drèze, X., Folkes, V.S., David, G.M. and Kent, B.M. (2004) *Effects of Seller-Supplied Prices on Buyers' Product Evaluations: Reference Prices in an Internet Auction Context*. *The Journal of Consumer Research*, [Online] 30 (4), 622–628.
- [45] Chapman, G.B. and Johnson, E.J. (1994) *The Limits of Anchoring*. *Journal of Behavioral Decision Making*, [Online] 7 (4), 223–242.
- [46] Strack, F. and Mussweiler, T. (1997) *Explaining the Enigmatic Anchoring Effect: Mechanisms of Selective Accessibility*. *Journal of Personality and Social Psychology*, [Online] 73 (3), 437–446.
- [47] Kumar, S., and Pandey, M. (2015). *The Impact of 9-Ending Pricing Strategy on the Consumers' Attitude and Buying Behavior: An Exploration*. *Advances in Economics and Business Management*, [Online] 2(2), 93-98.
- [48] Shen, C., Chen, F., and Wei, C. (2016). *Research on the Relationship Between Anchoring Effect and Consumers' Willingness to Purchase*. *Consum. Econ*, [Online] 32, 57-63.
- [49] Lin, C.-H. and Chen, M. (2017) *Follow Your Heart: How Is Willingness to Pay Formed under Multiple Anchors?* *Frontiers in Psychology*, [Online] 82269–2269.
- [50] Weisstein, F.L., Kukar-Kinney, M. and Monroe, K.B. (2016) *Determinants of Consumers' Response to Pay-What-You-Want Pricing Strategy on the Internet*. *Journal of Business Research*, [Online] 69 (10), 4313–4320.
- [51] Rödiger, M. and Hamm, U. (2015) *How Are Organic Food Prices Affecting Consumer Behaviour? A review. Food Quality and Preference*, [Online] 4310–20.
- [52] Englich, B. (2008) *When Knowledge Matters-Differential Effects of Available Knowledge in Standard and Basic Anchoring Tasks*. *European Journal of Social Psychology*, [Online] 38 (5), 896–904.
- [53] Zhang, Z. and Zhao, H. (2016) *Research on Anchoring Effect in Valuation Judgment*. *App. J. China*, [Online] 196, 24-31.
- [54] China Internet Network Information Center (CNNIC). (2022) *Research Report on the Internet Usage of Minors in China in 2021*.
- [55] Jacowitz, K.E. and Kahneman, D. (1995) *Measures of Anchoring in Estimation Tasks*. *Personality & Social Psychology Bulletin*, [Online] 21 (11), 1161–1166.
- [56] Gong, W. and Liu, J. (2023) *Investigating the Predictors of Telemedicine Service Usage Intention in China During the COVID-19 Pandemic: An Extended Technology Acceptance Perspective*. *Telemedicine Journal and E-Health*, [Online]
- [57] Chandrashekar, R. and Grewal, D. (2003) *Assimilation of Advertised Reference Prices: the Moderating Role of Involvement*. *Journal of Retailing*, [Online] 79 (1), 53–62.
- [58] Mussweiler, T. and Strack, F. (2001) *Considering the Impossible : Explaining the Effects of Implausible Anchors*. *Social Cognition*, [Online] 19 (2), 145–160.

Appendix

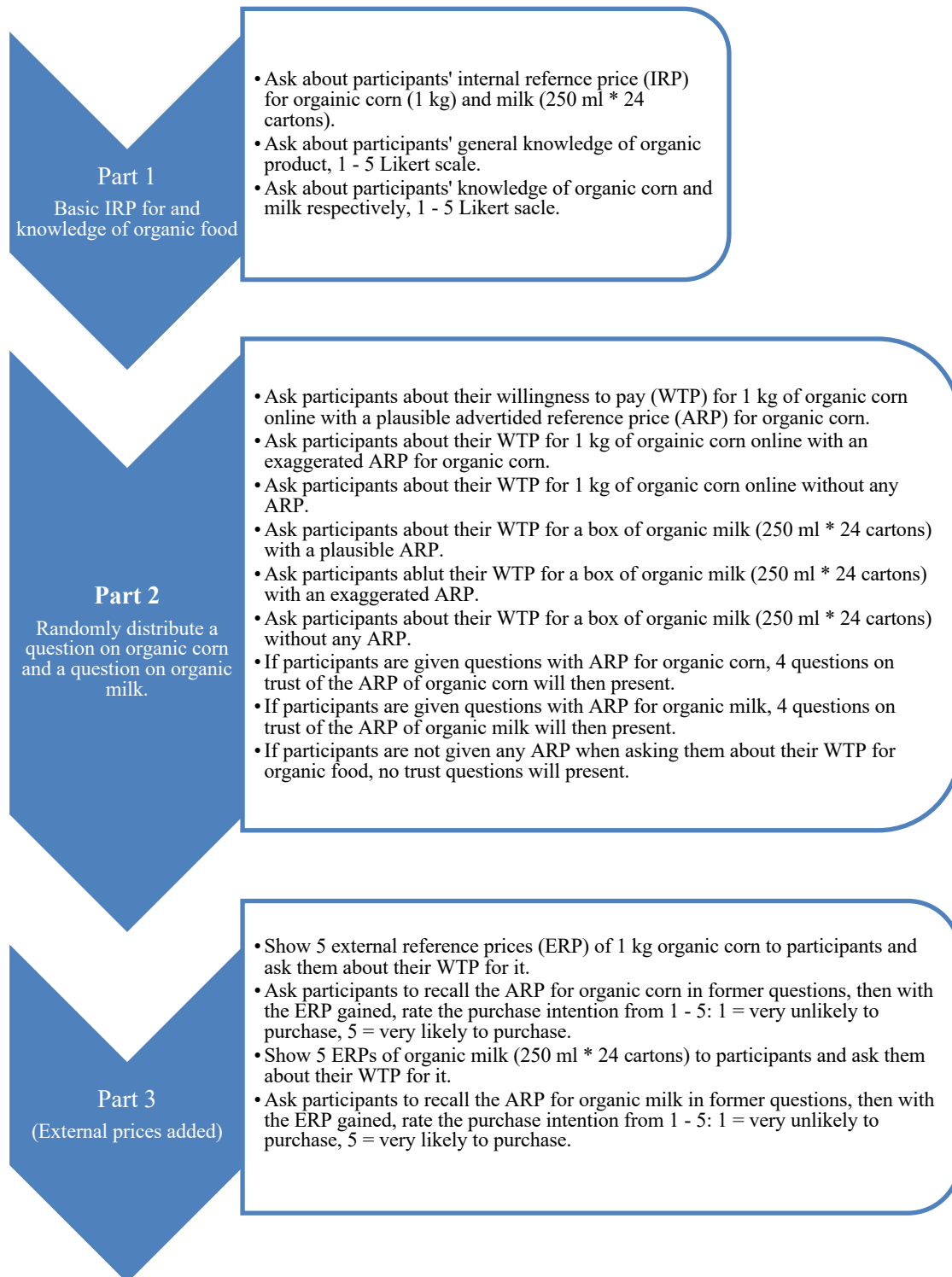


Figure 1: Flow chart and logic of questionnaire design.

Table 1. WTP and Trust of ARP of organic milk.

	Model 1				Model 2				Model 3			
	coefficient	Standard error	t	P	coefficient	Standard error	t	P	coefficient	Standard error	t	P
const	6.135	18.032	0.34	0.734	-151.5	20.381	-7.433	0.000**	65.241	80.679	0.809	0.419
Advertising price	28.217	3.98	7.089	0.000**	36.398	2.747	13.249	0.000**	-8.551	17.389	-0.492	0.623
Advertising price trust					38.6	3.736	10.333	0.000**	-33.891	25.469	-1.331	0.184
Advertising price * advertising price trust									15.367	5.536	2.776	0.006**
R ²		0.051				0.202				0.208		
Adjusted R ²		0.05				0.2				0.206		
F		F(933, 1)=50.259, P=0.000***				F(2, 930)=117.603, P=0.000***				F(3, 929)=81.536, P=0.000***		
ΔR ²		0.051				0.202				0.208		
ΔF		ΔF(1, 933)=50.259, P=0.000***				ΔF(1, 930)=175.526, P=0.000***				ΔF(1, 929)=126.156, P=0.000***		

Dependent variable: the value cognition of organic food

Note: ***, ** and * represent the significance levels of 1%, 5% and 10% respectively.

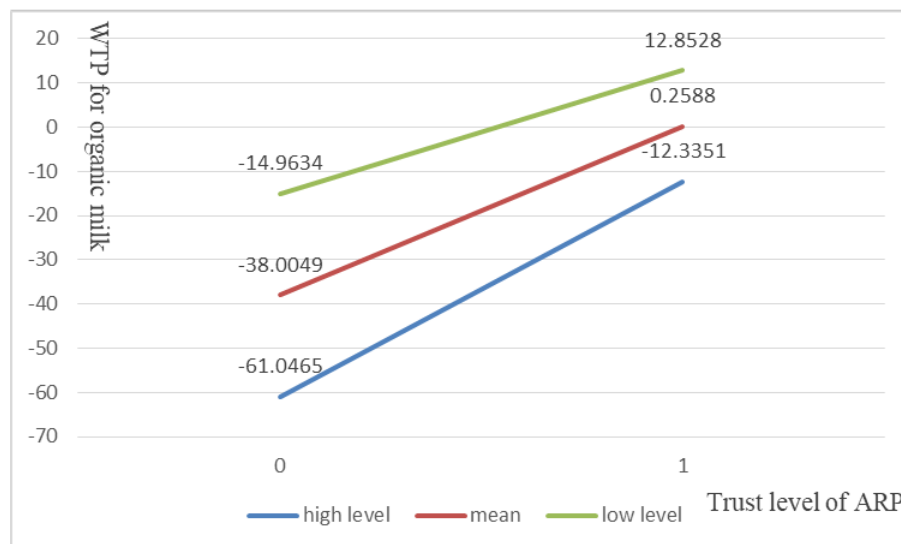


Figure 2: WTP and trust of ARP of organic milk.