



## Research article

# Interactive effects of trust in government information and perceived value on Chinese consumers' actual purchasing behavior toward contaminated seafood

Sha Huang<sup>a</sup>, Wenting Chen<sup>b</sup>, Tinggui Chen<sup>a,\*</sup>

<sup>a</sup> College of Economics and Management, Shanghai Ocean University, Shanghai, 201306, China

<sup>b</sup> Norwegian Institute for Water Research (NIVA), Økernveien 94, 0579, Oslo, Norway

## ARTICLE INFO

## Keywords:

Perceived value  
Trust in government information  
Actual purchasing behavior  
Imported cold chain seafood  
Food contamination

## ABSTRACT

Previous studies have separately examined the roles of trust in government information and perceived value in consumer food choices; however, the interactive effects of trust in government information and perceived value remain unknown. Therefore, this study explores the joint effects of trust in government information and perceived value on shaping consumers' actual food purchase behavior after food contamination. A logit model was used to estimate the interactive effects. The results from a sample of 710 Chinese consumers indicated that a lack of trust continues to make consumers concerned about the safety of seafood, which, together with the spread of internet rumors, leads to the fact that trust in government information does not directly affect consumers' actual purchase behavior. However, it can also indirectly influence purchase behavior through perceived risks and benefits. Specifically, trust in government information reduces risk perception among low-income consumers and enhances benefit perception among low-risk city consumers, thus enhancing purchasing behavior. Moreover, we find city heterogeneity in its impact on consumer purchasing behavior. Specifically, in low-risk cities, it significantly promotes consumer purchasing behavior, however, in high-risk cities, it does not directly affect consumer purchasing behavior. Overall, trust in government information does not directly affect consumer purchasing behavior. Perceived value is a key factor affecting consumer purchasing behavior. An interactive effect exists between trust in government information and perceived value on consumer purchasing behaviors. These results highlight the role of perceived value in amplifying the effects of trust in government information. These findings have significant implications for seafood producers and policymakers. Effective strategies should encompass both the provision of perceived value and the cultivation of trust in government information to promote consumer choices of contaminated food.

## 1. Introduction

China is the largest seafood consumer in the world [1]. By 2030, a 6–18 million tons gap between Chinese domestic seafood consumption and production is expected. This gap will be bridged by both domestic production and increased seafood imports [2]. Data released by the Chinese General Administration of Customs (GAC) present that seafood imports to China in 2023 were 5.02

\* Corresponding author.

E-mail address: [tgchen@shou.edu.cn](mailto:tgchen@shou.edu.cn) (T. Chen).

<https://doi.org/10.1016/j.heliyon.2024.e37597>

Received 3 June 2024; Received in revised form 5 September 2024; Accepted 5 September 2024

Available online 14 September 2024

2405-8440/© 2024 Published by Elsevier Ltd.

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million tons, with a cumulative import value of 19.78 billion USD. As the world's largest seafood trading country, China significantly influences the global seafood system. Considering China's role in the seafood trade during the pandemic [3], China is a highly influential market for global seafood consumption.

However, with the increase in seafood trade, a prominent problem is the contamination of seafood owing to prolonged cold chain storage and poor preservation conditions [4], particularly during the COVID-19 pandemic. Chinese official media have repeatedly reported contamination of imported cold-chain seafood [5,6], which has raised concerns about its safety [7].

Food contamination not only profoundly affects global food safety [8], but is also a growing public health problem worldwide and a major obstacle to global socioeconomic development [9]. According to global estimates by the World Health Organization's Foodborne Disease Burden Epidemiology Reference Group (WHO FERG), foodborne diseases caused by food contamination have resulted in 600 million illnesses and 420,000 deaths [10]. The World Bank estimates that foodborne diseases cost low- and middle-income countries 110 billion USD annually [11].

During the COVID-19 pandemic, the Chinese government adopted many stringent measures and timely publicized information to consumers regarding the safety of imported cold-chain seafood [12]. Unfortunately, trust crisis has become a prominent problem for China's food safety [13,14]. Therefore, Chinese consumers remain concerned about the safety of imported cold chain seafood. Food contamination alters consumers' perceived value of food and erodes their trust in government information, which ultimately leads to a distortion in consumers' actual purchasing behavior in the short term [15]. The research data indicated that 71.97 % of Chinese consumers purchased imported cold-chained seafood before contamination, whereas, only 18.17 % of consumers purchased it after contamination (Fig. 2A). In addition, the long-term consequences of food contamination may jeopardize producers' economic returns [16].

Thus, understanding perceived value, trust in government information, and their combined effects on Chinese consumers' actual purchasing behavior for contaminated seafood is crucial for global seafood producers, marketers, and policymakers to formulate marketing strategies and promotional policies to balance the growth of their profits with the sustainable development of seafood resources.

To the best of our knowledge, this study is the first economic study to explore the purchasing behavior of Chinese consumers toward contaminated seafood after imported cold chain seafood was contaminated with the new coronavirus, and this study marks a pioneering effort in examining the joint influence of trust in government information and perceived value in shaping consumer purchasing behavior toward contaminated imported cold chain seafood.

## 2. Literature review

Seafood has credence attributes, implying that consumers are unable to assess its quality or safety attributes before purchase [17, 18]. Consumers must rely on information provided by food supply chain participants such as retailers and producers to make their assessments [19]. Thus, trust is a key factor influencing consumers' choice of credence attribute [17,19–21]. French consumers' trust in producers and retailers positively affected their food purchase intentions [22]. Trust and mistrust in the food system determine Vietnamese consumers' organic food choices [20]. Low consumer trust weakens willingness to sustainably consume green products [21]. Additionally, trust has a significant impact on traceable seafood purchase intention [7].

Perceived value is another important factor affecting consumer food choices [23–25]. Perceived value refers to a consumer's overall evaluation of a product's efficacy based on its value and the consequences of purchasing it [22,23,25,26]. Perceived value includes risk and benefit perceptions [27,28]. It significantly affects consumer attitudes, which in turn have a significant positive effect on purchase intention [26]. It is a significant predictor of consumers' organic food purchase intentions in Brazil [29]. The perceived value theory states that consumer behavior is the result of a trade-off between perceived risks and benefits [30]. When consumers perceive that purchasing imported cold chain seafood poses a greater risk, they will decrease their purchasing behavior [15]; otherwise, they will increase their purchasing behavior.

## 3. Research hypothesis

### 3.1. The effect of perceived risk of food on purchasing behavior

Risk perception is an important factor that influences how individuals assess risk and make decisions [31], and it drives consumers' purchasing behavior [32–34]. As risk perception is an important cognitive factor that increases consumer risk awareness, it reduces consumer intention to consume conventionally produced vegetables [32]. A survey of 498 consumers in Hanoi, Vietnam revealed that higher risk perceptions led consumers to avoid purchasing specific vegetables, while reduced risk perceptions increased the sustainability of food consumption [35,36]. Based on existing studies, we believe that when consumers perceive that purchasing imported cold chain seafood poses a greater risk, they will reduce their purchasing behavior [15]. Thus, we propose research hypothesis 1.

**H1.** Risk perception negatively affects purchasing behavior.

### 3.2. The effect of perceived benefits of food on purchasing behavior

Perceived benefits positively influence consumer food purchase behavior [24,37]. Perceived benefits dominate the explaining of consumer behavioral intentions [37]. Specifically, perceived health, sustainability, and price benefits drive consumer food-purchasing

behavior [24]. Therefore, we believe that when consumers perceive greater value from purchasing imported cold chain seafood, their purchasing behavior will increase. Thus, hypothesis 2 is proposed.

**H2.** Benefit perception positively affects purchasing behavior.

### 3.3. The effect of trust in government information on purchasing behavior

Trust in government information can reduce the social magnification of food safety incidents [34], and cushion consumer perceptions of food safety risks [33,36]. In addition, consumer trust in the information released by the government increases their perception of the benefits of food [38], and influences their purchase decisions. Consumers rely on food safety information from government agencies to assess the potential impacts of their purchasing behavior. When consumers trust food safety information provided by the government, they expect that the safety information will meet their needs and fulfill their promises, and thus the perceived risk of purchasing food will be reduced, which will promote their purchasing behavior. Therefore, we argue that trust in government information can guide consumer choices and propose Hypothesis H3.

**H3.** Trust in government information has a positive impact on purchasing behavior.

### 3.4. The interactive effect of trust in government information and perceived value on purchasing behavior

When consumers have the same level of risk perception, those with a high level of trust in government information are more likely to purchase imported cold chain seafood, indicating that trust in government information has a positive moderating effect on the impact of risk perception on purchase behavior. Consumers with high trust in government information are more likely to buy imported cold chain seafood when they have the same level of perceived benefits, suggesting that trust in government information enhances the positive relationship between benefit perception and purchase behavior. Therefore, we argue that there is an interactive effect between trust in government information and perceived value on consumer purchasing behavior and propose Hypothesis H4.

**H4.** Trust in government information and perceived value jointly influence consumer behavior.

Based on the preceding theoretical analysis, we constructed a theoretical conceptual framework describing the relationships, as presented in Fig. 1.

## 4. Methodology

### 4.1. Variables measurement

To measure risk perception, we asked consumers, "Do you agree there is considerable food safety risk in the imported cold chain seafood on the market?" (Brown et al., 2022) [39], providing response options of strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5.

To measure their benefit perception, we asked consumers, "Do you agree imported cold chain seafood has higher nutritional value?" (Wen et al., 2021) [40], providing response options of strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5.

To measures the degree of trust in government information, we asked consumers, "Do you trust the information published by the government on the safety of imported cold chain seafood?" (Chen et al., 2021) [41], providing response options of strongly distrust = 1, distrust = 2, neutral = 3, trust = 4, strongly trust = 5.

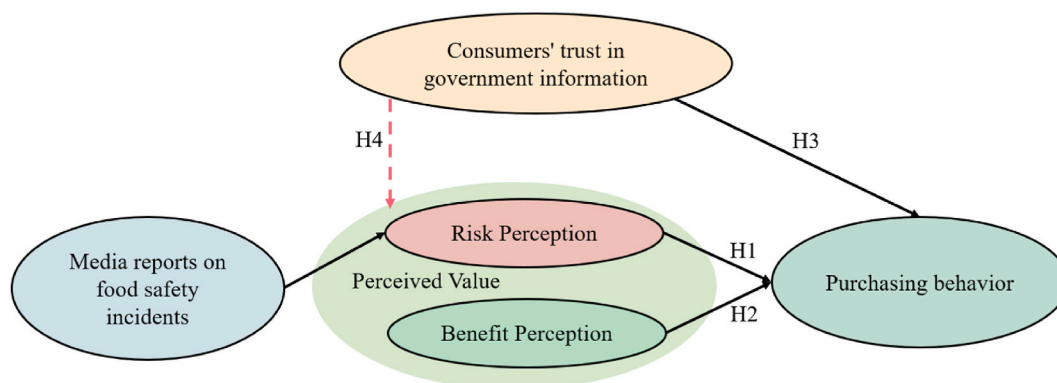
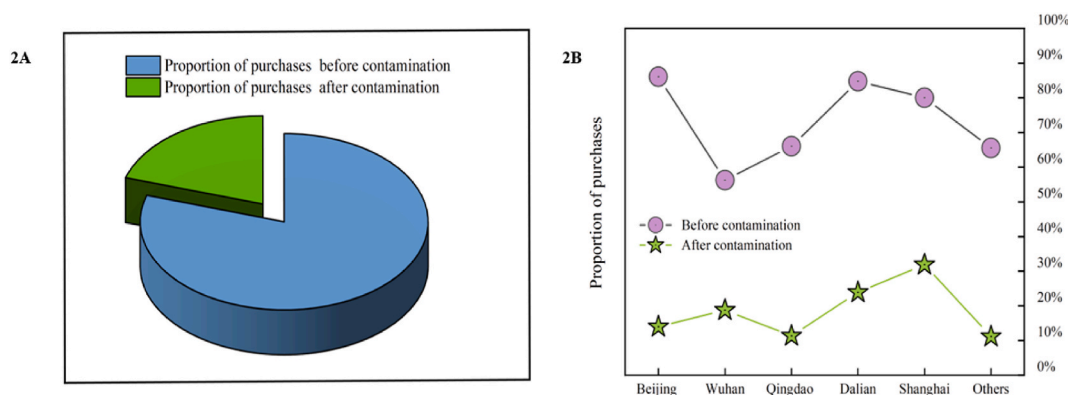


Fig. 1. Theoretical conceptual framework.



**Fig. 2.** Changes in the proportion of consumers' purchase before and after contamination. 2A is the change of purchase proportion of all samples. 2B is the change of purchase proportion in different cities.

#### 4.2. Data collection

Restrictions imposed by the government during the pandemic and people's fear of contracting COVID-19 in face-to-face interviews led to the use of online surveys in this study. The online survey was conducted from December 13, 2022, to December 31, 2022. Data were collected in China using a non-probabilistic sampling procedure. surveyors were invited to complete the questionnaire in the designated online questionnaire system for the data collection process, as using an online questionnaire breaks geographical restrictions. The samples are not limited to a single geographical location. Moreover, the survey cost is reduced, and the recovery speed is faster. The online questionnaire covered Beijing, Shanghai, Wuhan, Qingdao, Dalian, Jinzhou, Nanjing, Suzhou, Yantai, Linyi, Weifang, Yangzhou. We coded 1 if it was one of Shanghai, Beijing, Wuhan, Qingdao, Dalian, or other cities (such as Nanjing or Suzhou) and 0 otherwise. This is because between June and November 2022, official media reported contamination of imported cold chain seafood in five cities (**Shanghai, Beijing, Wuhan, Qingdao, and Dalian**), but not in the other cities. Therefore, this study defines these five cities as high-risk cities and the other cities as low-risk cities. We distributed 848 questionnaires and received 710 valid responses; the sample effective rate was 83.72 %.

#### 4.3. Data analysis

We use the binary logit regression model to analyze how consumers' perceived value and trust in government information, and their interactions affect their purchase behavior. We sequentially tested the following two models.

**Model 1.** Impact of risk and benefit perception on consumer purchase behavior.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_6 \text{Control} + \varepsilon$$

**Model 2.** Direct and indirect effects of trust in government information on consumer purchase behavior.

$$Y' = \beta'_0 + \beta'_1 X_1 + \beta'_2 X_2 + \beta_3 X_3 + \beta_4 X_1 * X_3 + \beta_5 X_2 * X_3 + \beta'_6 \text{Control} + \varepsilon$$

$Y$  and  $Y'$  is consumers' purchasing behavior;  $X_1$  is risk perception;  $X_2$  is benefit perception;  $X_3$  is trust in government information.  $\beta_0$  is a constant term,  $\beta_1$  and  $\beta_2$  are the regression coefficients of risk perception (**H1**) and benefit perception (**H2**) respectively.  $\beta_3$  describes the direct influence of trust in government information on purchase behavior (**H3**).  $\beta_4$  is the coefficient of interaction between risk perception and trust in government information, and  $\beta_5$  is the coefficient of interaction between benefit perception and trust in government information.  $\beta_6$  is the regression coefficient of the control variable. This study mainly introduces individual characteristics such as age, sex, education, monthly household income, consumption habits, price, safety attention of imported cold chain seafood, experience, and city as control variables.  $\varepsilon$  is a random disturbance item.

### 5. Results

#### 5.1. Descriptive statistics

Of the respondents, 61.13 % were women. The majority of the consumers (82.81 %) were under 50 years. Most consumers (76.9 %) had a college degree or higher education. Nearly half of the consumers (43.1 %) had a monthly income of more than 10,000 RMB. Cities coded as 1 (Beijing, Shanghai, Wuhan, Qingdao, Dalian) accounted for 63.38 % of the total sample (Table 1).

The mean value of risk perception was higher than that of benefit perception (Table 2), implying that consumers were more

concerned with food safety risks. Although trust in government information was high (Table 2), the proportion of consumer purchases decreased after food contamination (Fig. 2B). This indicates that a gap exists between consumers' trust in government information and their actual purchasing behavior, which verifies the gap between attitude and behavior.

The proportion of purchases before contamination was 71.97 %, and after contamination was 18.17 % (Fig. 2A). The proportion of purchases decreased in all cities (Fig. 2B).

The proportion of consumers who strongly agreed that imported cold chain seafood has substantial risk was 22.82 % (Fig. 3a), while those who agreed or strongly agreed that imported cold chain seafood had higher nutritional value was 11.13 % (Fig. 3b), and those who had trust in government information was 51.13 %. Trust accounted for 40 %, strongly trust accounted for 11.13 % (Fig. 3c). In general, trust in government information was relatively high, indicating that the Chinese government has high credibility (Fig. 3c). The risk/benefit perceptions of consumers in other cities (low-risk cities) were lower than those in high-risk cities (Beijing, Wuhan, Qingdao, Dalian, Shanghai) (Figs. 3a–1; Figs. 3b–1). Consumers in other cities (low-risk cities) have a higher degree of trust than those in high-risk cities (Beijing, Wuhan, Qingdao, Dalian, Shanghai cities) (Figs. 3c–1).

## 5.2. Binary logit regression results

### 5.2.1. The results of perceived risk

Risk perception (X1) negatively affects purchase behavior (Table 3). This is because when consumers face higher risk perception, they tend to reduce their purchase behavior to avoid risk, which supports Hypothesis H1 and is consistent with the existing literature [15,32].

### 5.2.2. The results of perceived benefit

Benefit perception has a stronger effect than perceived risk (Table 3). In contrast, benefit perception (X2) positively affects consumer purchase behavior, meaning that consumers who perceive higher benefits are more likely to buy them, which is a key driver of their purchase behavior. This supports Hypothesis H2 and is consistent with previous findings [24,37,42].

### 5.2.3. The results of trust in government information

Although Chinese consumers have a high degree of trust in government information (Fig. 3c). Consumers remain worried about the safety of imported cold chain seafood (Fig. 3a), and their trust in government information (X3) does not directly affect their purchase behavior (Table 3) which is consistent with previous studies [43].

### 5.2.4. The results of the interactive effective between trust in government information and perceived value

Trust in government information weakens the negative effects of consumers' risk perceptions on their purchase behavior (Table 3). The moderating effects plot (Fig. 4A) is based on the results in column (3) of Table 3. The slope of high trust in government information is steeper than that for low trust in government information (Fig. 4A).

Consumers with higher trust in government information have an increasing likelihood of purchasing imported cold chain seafood when they have the same level of benefit perception (Table 3). The slope is steeper for those with high trust in government information (Fig. 4B). This supports Hypothesis H4.

A probit model was used to test the robustness of the findings, and the regression results generally aligned with the logit model regression results. This demonstrates the robustness of our findings.

## 5.3. Heterogeneity analysis

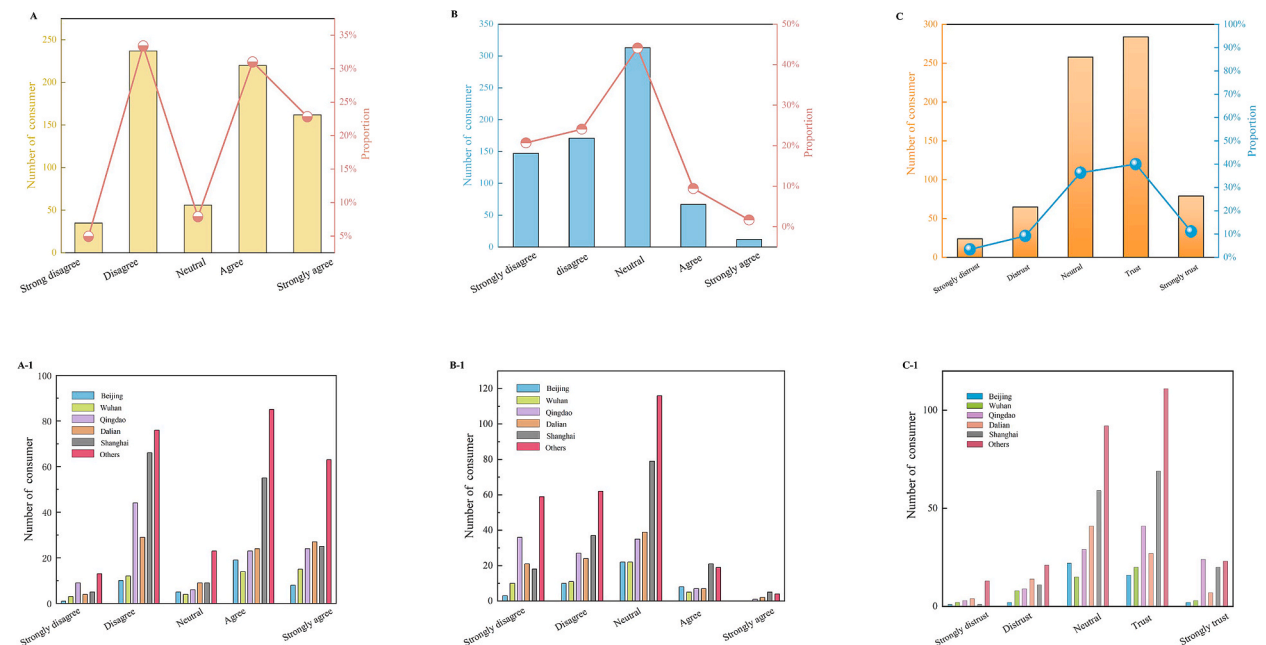
The above empirical analyses were conducted on an overall sample. However, there was no potential heterogeneity across consumers and cities (high-risk and low-risk cities). Therefore, this study tests heterogeneity in terms of both the consumer and city heterogeneity dimensions.

**Table 1**  
Basic characteristics of samples.

Variable	Group	Proportion (%)	Variable	Group	Proportion (%)
Gender	Male	38.87	Monthly household income	Under 5000	19.86
	Female	61.13		5000–10000	37.04
Age	Under 30	25.77		10000–20000	28.03
	30–40	33.38		20000–30000	8.45
	41–50	23.66		Over 30000	6.62
	51–60	12.96	Region	City	67.61
	Over 60	4.23		Rural	32.39
Education Level	Primary and below	0.56	City	Beijing	6.06
	junior high school	9.15		Wuhan	6.76
	High school or secondary school	13.38		Qingdao	14.93
	Undergraduate or college	51.69		Dalian	13.10
	Master degree or above	25.21		Shanghai	22.54
				Other cities	36.62

**Table 2**  
The meaning of variable and descriptive statistics.

Variable	Variable Meaning and Assignment	Mean	Standard Deviation
Purchase Behavior (Y)	Have you purchased imported cold-chained seafood after it was contaminated?	0.18	0.38
Risk perception (X1)	Do you agree there is considerable food safety risk in the imported cold chain seafood on the market?	3.33	1.28
Benefit perception (X2)	Do you agree imported cold chain seafood have higher nutritional value?	2.47	0.97
Trust (X3)	Do you trust the information published by the government on the safety of imported cold chain seafood	3.46	0.92



**Fig. 3.** Describes consumer risk perceptions, benefit perceptions and trust in government information. 3a, 3b, 3c are consumers' risk perception, benefit perception, and trust in government information, respectively. 3a-1, 3b-1, 3c-1 is consumers' risk perception, benefit perception, trust in government information in different cities, respectively.

**Table 3**  
Binary Logit regression results and Robustness test results.

Variable	Binary Logit regression results			Probit regression results (Robustness test results)		
	(1)	(2)	(3)	(4)	(5)	(6)
Trust in government information (X3)	–	0.197 (1.34)	0.257 (1.63)	–	0.123 (1.49)	0.157* (1.80)
Risk perception (X1)	–0.272*** (–2.73)	–0.240** (–2.35)	–0.253** (–2.46)	0.152*** (–2.74)	–0.137** (–2.42)	–0.142** (–2.48)
Benefit perception (X2)	0.314** (2.27)	0.307** (2.22)	0.296** (2.11)	0.185** (2.40)	0.179** (2.32)	0.176** (2.23)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
X1*X3	–	–	0.252** (2.22)	–	–	0.134** (2.19)
X2*X3	–	–	0.226* (1.67)	–	–	0.110 (1.47)
Constant	–8.512*** (–6.56)	–9.250*** (–6.47)	–9.670*** (–6.71)	–4.821*** (–6.80)	–5.260*** (–6.77)	–5.529*** (–7.00)
Number of observations	710	710	710	710	710	710
LR Chi (2)	212.43	214.26	222.00	215.04	217.30	224.68
Pseudo R <sup>2</sup>	0.3157	0.3184	0.3299	0.3195	0.3229	0.3339

Note: the values in parentheses are Z statistics; \*, \*\*, and \*\*\* indicate significant at 1 %, 5 %, and 10 % levels, respectively.

### 5.3.1. Consumer heterogeneity

Consumers of different ages and income levels may differ in their perceived value and trust in government information, leading to different purchasing behaviors. Therefore, consumers were grouped according to age and income level to analyze the heterogeneity.

The survey data revealed that 60 % of consumers were under 40 years. Therefore, this study used 40 years as the cut-off age, and

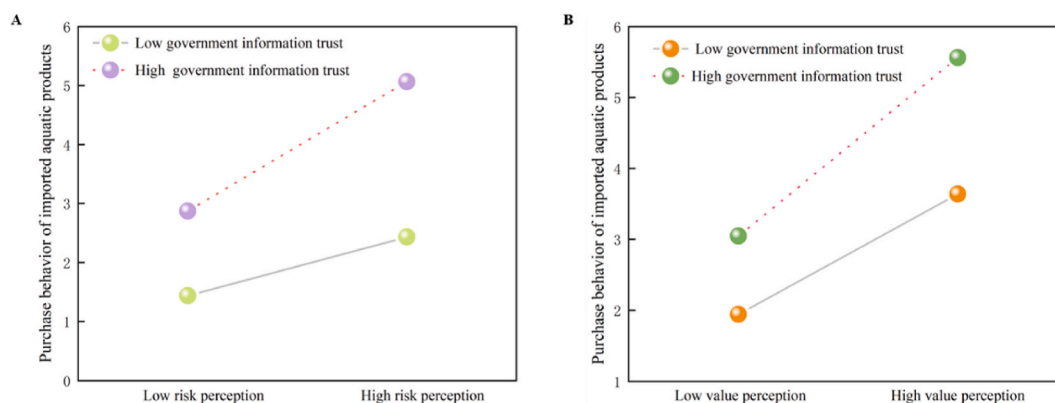


Fig. 4. The moderation effect plot.

consumers were segmented into young group (under 40 years) and middle-aged group (over 40 years). Additionally, 56 % of consumers reported monthly household incomes below 10,000 RMB. The 2022 national statistics reveal an average monthly salary of 8903 RMB (15,987 RMB in Shanghai, 16,220 RMB in Beijing, 8082 RMB in Hubei, 7171 RMB in Liaoning, and 7897 RMB in Shandong). The income cutoff for segmentation was set at 10,000 RMB, and defined a high-income group (over 10,000 RMB) and a low-income group (under 10,000 RMB). As the sample size differed across groups, it was not possible to directly compare the size and significance of the regression coefficients need to test the results of the grouped regression, and then compare the coefficients and significance. In this study, we used the Suset method for testing.

The coefficient of risk perception (X1) differed significantly between young and middle-aged groups. We found that risk perception has a more pronounced negative effect on purchasing behavior in the younger group than in the middle-aged group (Table 4).

Significant differences in the interaction term (X1\*X3) of trust in government information and risk perception between the high- and low-income groups (Table 4), have a significant positive impact on the purchasing behavior of low-income groups, and this positive impact is stronger than that of the high-income groups (Table 4). We found that risk perception (X1) has a more significant negative effect on purchase behavior in the low-income group, and this negative influence is higher than that in the high-income group (Table 4).

### 5.3.2. Regional heterogeneity

There was no significant difference in risk and benefit perceptions between low- and high-risk cities, while trust in government information was significantly lower in high-risk cities than in low-risk cities. Trust in government information (X3) in other cities (low-risk cities) has a more positive impact on purchase behavior, and this positive effect is stronger than in cities (high-risk cities, Beijing, Shanghai, Wuhan, Qingdao, Dalian) (Table 4).

The interaction term (X2\*X3) of trust in government information and benefit perception in other cities (low-risk cities) significantly and positively promotes purchase behavior, and this positive effect is larger than that in high-risk cities, (Beijing, Wuhan, Shanghai,

**Table 4**  
Grouping regression results.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Young-aged group	Middle-aged group	Suset test	High-income group	Low-income group	Suset	high-risk cities	low-risk cities	Suset test
Trust in government information (X3)	0.218 (0.89)	0.384 (1.49)	0.616	0.473** (2.10)	0.148 (0.55)	0.305	0.170 (0.95)	1.085** (2.47)	0.044**
Risk perception (X1)	−0.530*** (−3.47)	0.001 (0.00)	0.015**	0.003 (0.02)	−0.457*** (−2.61)	0.04**	−0.212** (−1.74)	−0.624** (−2.38)	0.221
Benefit perception (X2)	0.110 (0.51)	0.493** (2.30)	0.215	0.177 (0.97)	0.670*** (2.76)	0.094	0.372** (2.24)	0.089 (0.28)	0.425
X1*X3	0.201 (1.17)	0.174 (0.96)	0.918	−0.021 (−0.14)	0.567*** (2.95)	0.015**	0.251** (1.90)	0.489 (1.63)	0.428
X2*X3	0.048 (0.25)	0.598** (2.37)	0.064	0.226 (1.33)	0.158 (0.72)	0.784	0.080 (0.50)	0.799** (2.54)	0.016**
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	−6.364	−11.724	5.36	−11.815	−9.518	−2.297	−9.428	−13.307	−4.315
Number of observations	420	290	—	306	404	—	450	260	—
LR Chi	128.46	121.96	—	114.23	102.68	—	150.05	81.12	—
Pseudo R2	0.3454	0.4088	—	0.3211	0.3534	—	0.3147	0.4461	—

Note: the values in parentheses are Z statistics; \*\*, \*, and \* indicate significance at 1 %, 5 %, and 10 % levels, respectively.



Qingdao, Dalian) (Table 4). This suggests that trust in government information moderates the positive impact of benefit perception more effectively in other cities (low-risk cities), and thus increases their purchase behavior.

## 6. Discussions and limitations

### 6.1. Discussions

Studies on credence attributes have focused on consumer intentions as an outcome [23]. However, many studies have demonstrated a gap between intentions and behaviors [44]. Although previous studies have separately examined the two factors of consumer information trust and perceived value [19,20], limited attention has been paid to the interactive effects of information trust and perceived value in the same context to influence consumers' actual purchasing behavior. Most importantly, insufficient economic research has been conducted to on consumer purchases of contaminated imported cold chain seafood. To bridge this gap and understand how the interaction between consumer trust in government information and perceived value affects consumers' responses, we collected 710 data from Chinese consumers to examine the interactive effects of trust in government information and perceived value on consumers' choice of contaminated imported cold chain seafood. The empirical findings reveal that trust in government information and perceived value have interactive effects on consumer purchase behavior.

Trust in government information does not directly influence consumers' food purchase behavior, which aligns with earlier studies stating that trust in government agencies does not directly influence consumer acceptance of transferred foods [43], and that trust in government is positively related to food safety perception, whereas trust in government does not have a direct influence on food repurchase intention [45]. This may be because most consumers are risk-averse. This survey reveals that 79.27 % of consumers avoid risks. Moreover, the rapid spread of online rumors exacerbates risk perception, and the superposition of the "information cocoon room effect" has a "crowding-out effect" on trust in government information. Some online media disseminate food safety incidents as false comments and rumors under market logic to cater to the public's strong demand for negative information [46]. The online rumors and the superimposed resonance of the "information cocoon room effect" reduce the credibility of trust in government information. Therefore, trust in government information does not directly affect consumers' food purchase behavior, which implies that in food contamination incidents, the government disclosing food safety information may not reduce the deviation between the safety risk perceived by consumers and the risk that actually exists, therefore, it remains difficult to guide consumers' objective assessment of food safety risks [47].

In addition, this study found that trust in government information indirectly affect consumer purchase behavior through perceived value. Specifically, trust in government information significantly moderates the relationship between perceived value and consumer purchase behavior, and the interaction term between trust in government information and risk perception influences purchase behavior among low-income consumers more strongly. The interaction term between trust in government information and benefit perception affects purchasing behavior in low-risk cities more strongly. This means that consumers' trust in government information reduces the risk perception of low-income consumers and enhances the benefit perception of low-risk city consumers, whereas Zhang et al. (2018) found that consumers' trust in government, scientists, and labeling systems increases their perceived benefits and decreases their perceived risks provided by Genetically Modified (GM) foods. Thus, trust in government information indirectly promotes consumer purchase behavior, which aligns with earlier studies that stated that trust in government agencies indirectly influences consumer purchase of GM Foods through perceived benefits and risks [43].

Finally, it is interesting to find regional heterogeneity in the impact of trust in government information on consumer purchase behavior. Specifically, trust in government information significantly positively promotes consumer purchase behavior in other cities (low-risk cities), however, does not directly influence consumer purchase behavior in high-risk cities (Beijing, Shanghai, Wuhan, Dalian, and Qingdao). One possible reason for this is that consumers' food safety risk perceptions are significantly higher in high-risk than in low-risk cities. Moreover, trust in government information is significantly lower in high-risk than in low-risk cities, and can alleviate risk perception [48]. Therefore, trust in government information promotes consumer purchase behavior in low-risk cities.

### 6.2. Implications

#### 6.2.1. Theoretical implications

This study makes three key contributions to the existing literature.

First, most studies conducted use purchase intention rather than actual purchase behavior as the outcome [6,22,23]. However, a gap between purchase intention and actual purchasing behavior. This gap has been identified in many studies on pro-environmental, sustainable consumption, low-carbon and green consumption behaviors [44,49]. Therefore, this study focuses on consumers who have already made a purchase, rather than those who intend to make a purchase.

Second, although the role of trust and perceived value in consumer food choices has been widely explored [19,20,23,24,50], the interaction relationship between trust and perceived value remains unknown. Considering that consumers' lack of trust in government information and perceived value of food coexist [29,51], our study marks a pioneering effort to investigate the joint influence of trust in government information and perceived value in shaping consumer purchasing behavior toward contaminated imported cold chain seafood. This study expands the literature on the impact of information trust on consumer food choices.

Finally, environmental studies on imported cold chain seafood have become increasingly prevalent [6,8,14,52]. However, economic studies on contaminated imported cold chain seafood are lacking. To the best of our knowledge, this study is the first economic study to explore the purchasing behavior of Chinese consumers toward contaminated seafood after imported cold chain seafood was



contaminated with the new coronavirus.

#### 6.2.2. Practical implications

The results of this study are significant to both producers and policymakers.

For producers, seafood consumption needs to be promoted by highlighting the value of seafood products, such as the provision of nutrients needed by humans and the greater achievement of sustainable development.

Policymakers should establish a traceability platform for imported cold chain seafood and establish a third-party regulator to monitor the authenticity of traceability information to enhance consumer trust.

#### 6.2.3. Policy implications

Exploring the interactive effects of trust in government information and perceived value has important policy implications for promoting food consumption. Therefore, it is imperative to increase consumer trust in the food information released by the government. Simultaneously, it is important to focus on the perceived value of food.

#### 6.3. Limitations and future research directions

This study had two limitations that can be used as directions for future research.

First, other factors that can affect consumer purchase behavior for contaminated imported cold chain seafood, such as risk preference, subjective norms, and perceived severity. Hence, future studies should consider these factors, which may also affect consumer preferences for imported cold chain seafood.

Second, the data were obtained from China. The data represent only the level of trust among Chinese consumers in the safety information released by the government on imported cold chain seafood and the perceived value of imported cold chain seafood. Therefore, future research should be conducted involving a wider range of countries and consumers to test the robustness of these findings.

### 7. Conclusions

This study examined the roles of trust in government information and perceived value in influencing consumer choices of imported cold chain seafood contaminated by the novel coronavirus. Although previous studies have extensively examined these two factors in isolation, this study, based on the perspective of trust in government information, collected 710 responses of Chinese consumers after the contamination of imported cold chain seafood and used a binary logit model to examine the joint influence of these two factors on consumer purchase behavior, providing that the interaction effect of trust in government information and perceived value significantly influences on consumers' actual purchase behavior.

Perceived value is a key factor affecting consumer purchasing behavior. It comprises benefit and risk perceptions, which have opposing effects. Benefit perception plays a promoting role, whereas risk perception has a significant inhibitory effect, and the influence of benefit perception is stronger than of risk perception. The results of this study imply that benefit perceptions dominate the explanation of behavior relative to risk perceptions, despite food contamination incidents.

There was no significant difference in risk and benefit perceptions between low- and high-risk cities, whereas trust in government information was significantly lower in high-risk cities than in low-risk cities. After the detection of the novel coronavirus in imported cold chain seafood and its outer packaging, the relevant authorities narrowed the risk perceived by consumers and the actual food risk by publicizing safety information on imported cold chain seafood. Owing to the lack of consumer trust in the information released by the government, it is difficult to guide consumers to objectively perceive the food safety risk, and consumers remain worried and panick about imported cold chain seafood, coupled with the dissemination of rumors on the Internet, in this case, the trust of the government's release of information cannot directly promote their purchase behavior.

There is an interactive effect between trust in government information and perceived value on consumer purchasing behavior. Increasing benefit perception by the same amount resulted in a larger boost in purchase behavior when trust in government information was high, compared with low trust, high trust in government information enhanced the positive effect of benefit perception on purchase behavior. Reducing risk perception by the same amount leads to a greater increase in purchasing when trust in government information was high. Thus, high trust in government information makes consumer with low-risk perceptions more likely to increase their purchasing behavior. Trust in government information strengthens the promoting effect of benefit perception, weakens the inhibitory effect of risk perception on purchasing behavior, and significantly enhances the positive impact of perceived value on purchasing behavior.

This study found consumer and regional heterogeneity in the effects of trust in government information, perceived value, and their interaction terms on purchase behavior. Trust in government information moderates the effects of risk and benefit perceptions differently for different groups. This reduces the negative effect of risk perception more strongly for low-income groups and increases the positive affect of benefit perception more strongly for other cities (low-risk cities). Risk perception has a stronger negative influence on the purchasing behavior of young and low-income consumers. Trust in government information has a stronger positive impact on purchasing behavior in other cities (low-risk cities).

## Ethics statement

All participants gave their informed consent to take part in the study. The questionnaires were anonymized, and respondents could withdraw from the study whenever if they felt uncomfortable. The study procedure received ethical approval from Shanghai Ocean University, Shanghai (Approval No. SHOU-DW-2022-068).

## Data availability statement

Data will be made available on request.

## Ethics approval

Ethical approval for this study was obtained from the Ethics Approval Committee whose full name is the Academic Committee of Shanghai Ocean University. The ethical approval number is SHOU-DW-2022-068. The date of ethical approval is January 7, 2022.

## CRediT authorship contribution statement

**Sha Huang:** Writing – review & editing, Writing – original draft, Software, Methodology, Formal analysis, Data curation. **Wenting Chen:** Writing – review & editing, Supervision, Formal analysis. **Tinggui Chen:** Writing – review & editing, Supervision, Project administration, Investigation, Funding acquisition, Conceptualization.

## Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Tinggui Chen reports financial support was provided by National Natural Science Foundation of China. None If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Acknowledgments

This work was supported by the Project funded by National Natural Science Foundation of China (No. 72173084), and Shanghai Planning Office of Philosophy and Social Science (No. 2019BGL011).

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