

APPLICATION OF CONTINGENT VALUATION METHOD TO MEASURE WILLINGNESS TO PAY FOR ORGANIC BEEF

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Abstract

The objective of this study is to determine the influence of consumers characteristics and food safety perceptions on their willingness to buy and estimate the willingness to pay of urban households for organic beef in Long Xuyen City. The study used the contingent valuation method (CVM) to estimate willingness to pay (WTP). The results of a survey of 320 households in Long Xuyen City show that income, education level, food safety perceptions, and the presence of children and adults in the household positively influence willingness to pay for organic beef. Conversely, price and age negatively affect willingness to pay. Consumers are willing to pay an average of 650,000 VND/kg for organic beef (ranging from 600,000 VND/kg to 700,000 VND/kg). In a market economy, the price that consumers are willing to pay is useful information for producers to know the supply-and-demand situation. Research results will help businesses make optimal strategic decisions to develop their markets.

Keywords: Contingent valuation method, food safety perceptions, organic beef, socio-economic characteristics, willingness to pay.

JEL classification: E21, E31, L66.

ÁP DỤNG PHƯƠNG PHÁP ĐỊNH GIÁ NGẪU NHIÊN ĐO LƯỜNG MỨC SẴN LÒNG CHI TRẢ THỊT BÒ HỮU CƠ

Tóm tắt

Mục tiêu của nghiên cứu này là xác định mức độ ảnh hưởng của đặc điểm người tiêu dùng và nhận thức về an toàn thực phẩm đến mức độ sẵn lòng mua của họ và ước tính mức sẵn sàng chi trả của các hộ gia đình thành thị cho thịt bò hữu cơ tại thành phố Long Xuyên. Nghiên cứu đã sử dụng phương pháp định giá ngẫu nhiên (CVM) để xác định mức độ ảnh hưởng của các đặc điểm và nhận thức an toàn thực phẩm của người tiêu dùng đến mức sẵn sàng mua và ước lượng mức sẵn sàng chi trả (WTP). Kết quả khảo sát 320 hộ gia đình trên địa bàn Thành phố Long Xuyên cho thấy thu nhập, trình độ học vấn, nhận thức về an toàn thực phẩm và sự hiện diện của trẻ em và người lớn tuổi trong hộ gia đình ảnh hưởng tích cực đến mức sẵn lòng chi trả cho thịt bò hữu cơ của trẻ. Ngược lại, giá cả và độ tuổi ảnh hưởng tiêu cực đến mức sẵn sàng chi trả. Người tiêu dùng sẵn sàng trả trung bình 650.000 đồng/kg thịt bò hữu cơ. Trong nền kinh tế thị trường, mức giá mà người tiêu dùng sẵn lòng chi trả chính là một thông tin hữu ích để những người sản xuất biết được tình hình cung - cầu. Kết quả nghiên cứu sẽ giúp doanh nghiệp đưa ra được quyết định chiến lược tối ưu nhằm phát triển thị trường kinh doanh.

Từ khóa: Phương pháp định giá ngẫu nhiên, thịt bò hữu cơ, đặc điểm người tiêu dùng, nhận thức an toàn thực phẩm, sẵn lòng chi trả.

1. Introduction

In recent years, the agriculture and rural development sectors have faced numerous difficulties and challenges, with the most prominent issue being the use of banned substances in animal husbandry. This has truly become a pressing problem, causing public concern and greatly impacting community health (Vietnam Fatherland Front, 2016). The major

issue that people are currently facing is unsafe and unhygienic food that lacks quality assurance and safety in processing and production. The current food safety situation is one of the pressing concerns that society is paying great attention to as the number of people suffering from diseases caused by consuming contaminated and low-quality food continues to rise. Due to this urgent need, organic food has become a new

consumption trend as people increasingly prioritize their health. People are now opting for healthier products and services to enjoy a better and safer lifestyle. As income levels improve and access to information on healthy and scientific lifestyles becomes easier, people are becoming more conscious of their health. The production and consumption of organic food are gaining attention not only in developed countries but also in developing countries like Vietnam.

From an academic perspective, according to Icek (1991), intention is considered the motivation leading to behavior and is also an indicator of willingness to purchase. Customers derive benefits from what they desire to have. If customers like something because they feel satisfied when using it, they are willing to pay for it. The amount of money a person is willing to pay for a good or service they prefer is a true measure of its value or the benefits obtained from the related product. In recent years, willingness to pay (WTP) has been a widely used concept in consumer behavior research, particularly regarding consumers' intentions in the organic food sector, which has garnered attention from scholars worldwide. In general, most studies using the contingent valuation method (CVM) examine consumer characteristics as the main variables affecting WTP, such as the studies by Bhattarai (2019); Nandi et al. (2017); Owusu & Anifori (2013); Shi et al. (2013); Wahida et al. (2013); Wang et al. (2019). CVM is suitable for predicting market behavior and demand for new or not widely available products in the market, identifying potential markets, and designing optimal products. However, recent studies on organic food in Vietnam mainly focus on studying the intention to consume organic food and using structural equation modeling (SEM) to test theoretical models of behavior and assess the impact of factors (Nguyen et al., 2019; Nguyen et al., 2021; Nguyen et al., 2021; Le et al., 2022), but the specific amount (or potential price) that consumers are willing to pay has not been determined. Recently, the majority of studies applying CVM to measure

willingness to pay only focused on organic vegetable products in central cities of Vietnam (Hai et al., 2013; Ha et al., 2019; Khai, 2015), organic rice (Khoi & Vy, 2016), and safe pork (Khai et al., 2018) indicating that the CVM method and organic food consumption are topics of great interest and discussion among scholars, but research on willingness to pay for organic beef in the area of Long Xuyen city in particular is still limited. Overall, relevant studies show that demographic and cognitive characteristics of consumers influence WTP for organic food. Some studies such as Declare (2015), Jin et al. (2017), and Ha et al. (2019) show that income has a positive effect on WTP. The studies have also confirmed that people with higher education are more likely to be willing to pay (Bhattarai, 2019; Khai, 2018). Research by Owusu & Anifori (2013), Wahida et al. (2013), and Khai et al. (2018) demonstrate that households with more children and older adults are more interested in organic food. In addition, Bhattarai (2019), Kokthi et al. (2021) also showed that individuals with better knowledge and awareness of food safety issues are more willing to pay for organic products. Some studies show that household size has a negative and significant effect on WTP (Bhattarai, 2019; Khai et al., 2018). Age has a positive effect on WTP for organic products (Khai et al., 2018). Most research studies show that high prices are the main barrier affecting WTP for organic foods (Cai et al., 2019; Curtis et al., 2020; Denver et al., 2019).

Therefore, a study was conducted to understand the WTP for food among Vietnamese people in general and the Mekong Delta region in particular. However, researching the aforementioned issue for all organic food products in the entire market of a country is an ambitious task that is difficult to achieve. Hence, we focused on studying the WTP for a specific group of products, such as organic meat, in a specific market that is feasible and suitable from both academic and practical perspectives. The objective of this study is to determine the influence of consumer characteristics and health

risk perceptions on WTP and estimate the willingness to pay for organic beef by households in Long Xuyen City, An Giang Province, within the Mekong Delta region.

2. Data collection and analysis method

The study utilizes CVM to determine the willingness to pay and factors influencing the willingness to pay of individuals for organic beef products. CVM is one of the commonly used approaches to revealing preferences and assessing willingness to pay (Dan et al., 2020). The fundamental theories of the CVM approach were proposed by Hanemann (1984). This method requires respondents to answer a closed-ended question, specifically whether they would be willing to pay a certain amount of money to obtain a specific change in their current situation (Khai, 2020). In this study, individuals are asked about their WTP for a change in the provision of goods (organic beef), and these levels are collected through a survey questionnaire.

2.1. Data collection method

This is a study on the food consumer market, so like other consumer goods market studies, it is difficult to determine the population and the sampling frame, so the study applied the convenient sampling method. Interviewers will have access to face-to-face interviews at the homes of potential respondents. The sample size determined in the absence of the study population is presented as follows:

$$n = z^2 \frac{p \times (1 - p)}{e^2}$$

In there:

n: sample size to be determined.

z: the value of looking up the z distribution table based on the selected reliability. Typically, the confidence level used is 95% for $z = 1.96$ and 90% for $z = 1.65$, respectively

p: percentage of successful n sample size estimation. Usually we choose $p = 0.5$ so that the product $p \times (1-p)$ is the largest, this ensures safety for the sample n estimates.

e: allowable error.

If $e = 0.1$, then $n = 68$, and if $e = 0.05$, then $n = 384$. According to Roscoe (1975), a suggested sample size of 30 to 500 is suitable for most studies; in cases where the samples are divided into subsamples, the minimum sample size is 30 for each type (see Sekaran & Bougie, 2016). Therefore, the study conducted a survey using direct interview techniques with 340 households living in urban areas of My Long, My Binh, My Xuyen, Dong Xuyen, My Qui, and Binh Khanh wards, representing the urban area of Long Xuyen City, from March 2023 to May 2023. Out of a total of 340 respondents, 320 were willing to answer and provide all the necessary information.

The survey started with a description of food safety issues, recent food safety scandals affecting consumer health and economic damages. In recent times, there has been an increase in the mixing of contaminated meat with unclear origins. Additionally, the production process, slaughter, and poor product quality, as well as inadequate preservation during transportation, do not comply with food safety regulations. The proposed price level was presented and the WTP for the product was examined. The reasons for agreeing or disagreeing to pay were also considered.

Next, an introduction to organic beef was provided, emphasizing its certification as a safe and quality food product. The safety attributes that certified organic beef possesses include traceability labels, organic certification labels, and animal welfare certification labels. The benefits of organic beef were highlighted, such as health safety, a safe choice for consumers, a clear origin, and the potential to build consumer trust in the product.

According to Hanemann (1984), the CVM question formats include open-ended and closed-ended questions, bidding games, payment cards, single-bounded dichotomous choice, and double-bounded dichotomous choice. Based on the pros and cons of each question type of the CVM method, this study chose the single-bounded dichotomous choice to collect data on people's

WTP for organic beef. Because making a decision to accept or not accept a given bid level of organic beef is similar to the way that respondents make a decision to buy or not to buy a commodity at a given price under conditions of constraints on budget. In addition, although the single-choice question only collects little information from each respondent, only knowing whether the willingness to pay is greater or less than a certain bid level, this type of question helps studies reduce no-response and avoid aberrant responses. The question asked whether households were willing to pay a higher price for organic beef compared to conventional beef typically consumed by their families. The study proposes four gradually increasing prices per kilogram (kg) of organic beef, respectively: 480,000 VND (100%), 600,000 VND (150%), 720,000 VND (200%), and 840,000 VND (250%) compared to conventional beef filets sold in the market (240,000 VND/kg²), based on the results of qualitative research conducted in-depth interviews with 15 experts who are producers and researchers in the field of organic food, as well as the results of pilot testing of consumers. At each price level, interviews were conducted with about 25% of the respondents in the study sample.

2.2. Data analysis method

The main objective of the study is to analyze the influence of consumers' perceptions and characteristics on the WTP for organic beef, thereby revealing the preferences and behaviors of buyers. The behavioral patterns of consumers are described by Kotler and Armstrong (2020), including purchasing decisions as well as internal processes deemed appropriate for this goal. The consumer's physical and social environment influences internal processes, which in turn affect the perception and evaluation of stimuli. Marketers are particularly interested in converting stimuli into responses; they want to understand the reasons for consumer

buying behavior hidden in the so-called "black box" (Kotler & Armstrong, 2020). According to Kotler & Armstrong (2020), consumer behavior is influenced by cultural factors (subculture, social status, etc.); social factors (norm group, family, role in family, etc.); personal factors (age, occupation, income, lifestyle, education level, etc.); and psychological factors (motives, attitudes, beliefs, experiences, etc.). Combining the theoretical basis with the results of the review of previous studies applying CVM to measure WTP for organic food, the study examines the influence of variables such as income, education level, age, the presence of children and older adults in the household, the total number of household members, and food safety perceptions on the acceptability of organic beef.

The CVM method estimates the mean and median values of WTP based on the coefficients of the regression model and the bid variable, along with the coefficients of perception variables and socio-economic characteristics of the respondents. The Probit and Logit models are commonly used to analyze factors influencing WTP in the CVM method (Khai, 2015). Since the study chose the single-bounded dichotomous choice question format, the Logit method is used for analysis with the estimation formula as follows:

$$\begin{aligned} \text{Logit} &= \ln\left(\frac{\text{pr(Yes)}}{1 - \text{pr(Yes)}}\right) \\ &= \beta_0 + \beta_1 X_1 + \dots + \beta_k X_k \end{aligned}$$

In this case, the mean and median values of WTP are the same and are calculated using the following formula:

$$WTP = -\frac{(\hat{\alpha} + \hat{\beta}_k \bar{X})}{\hat{\beta}_1}$$

The estimated model for WTP for organic beef takes the form of a Logit function, which is presented as follows:

$$\text{Logit}(WTP) = \beta_0 + \beta_1 * \text{price} + \beta_2 * \text{income} + \beta_3 * \text{dependent} + \beta_4 * \text{age} + \beta_5 * \text{education level} + \beta_7 * \text{family size} + \beta_8 * \text{food safety perception} + \varepsilon$$

² Beef fillet prices are popularly sold at Bach Hoa Xanh, VinMart, Coopmart, MM Mega supermarkets, and traditional markets. Combined daily listed prices

on the market information page of the An Giang Department of Agriculture and Rural Development from February 2023 to March 2023

In this equation, *WTP* is the dependent variable, representing the decision to be willing to pay the proposed price (Bid). This variable takes the value of 1 if the consumer is willing to pay (*WTP*) and 0 if the consumer is not willing to pay. *Price, income, dependents, age, education level, family size, and food safety perception* are the independent variables in the Logit model.

3. Research findings and discussion

The results in Table 1 show that a total of 48.13% of respondents agreed to *WTP* for

organic beef, while 51.87% of respondents did not agree to *WTP* for organic beef at all price levels. The majority of respondents agreed to *WTP* at the price level of 480,000 VND/kg, accounting for over 74.12%, while they did not agree to *WTP* at the price level of 840,000 VND/kg, accounting for over 83.56%. Overall, as the price increases, the *WTP* for organic beef decreases, which aligns with economic theories and practical observations.

Table 1: Number of respondents willing to pay and not willing to pay for organic beef

No.	Price level	Number of Observations	Willing to Pay		Not Willing to Pay	
			Frequency	Percentage (%)	Frequency	Percentage (%)
1	480,000	85	63	74.12	22	25.88
2	600,000	84	43	51.2	41	48.80
3	720,000	78	36	46.15	42	53.85
4	840,000	73	12	16.44	61	83.56
	Total	320	154	48.13	166	51.87

Source: Analysis results from 320 respondents

From the descriptive statistics in Table 2, the average age of the respondents is around 39 years old and the average number of years of education is about 14 years, indicating that the majority of selected respondents have a relatively high educational level. The average household income is approximately 24 million VND per month, and the average perception of food safety is quite high, reaching 7 out of 10 points. These

findings are consistent with the nature of the study on organic products.

Before estimating logit regression, the problem of multicollinearity was tested to detect the strong correlation of two or more explanatory variables with each other. The results showed that the models did not exhibit multicollinearity, as the VIF coefficients of the independent variables were all below 2.

Table 2: Multicollinearity test

Variable	VIF	1/VIF
Income	1.04	0.96
Dependents	1.74	0.57
Age	1.13	0.88
Education Level	1.13	0.89
Family Size	1.73	0.58
Food Safety Perception	1.05	0.95
Price	1.07	0.94
Mean VIF	1.27	

Source: Analysis results from 320 respondents

Table 3: Descriptive statistics of variables in the Logit model

No.	Factor	Unit of Measurement	Description	Mean	Standard Deviation
1	Willingness to Pay	Yes = 1 No = 0	Willingness to pay for organic beef at different price levels by households	0.48	0.5
2	Income	Thousand VND/month	Total income of all members in the household in one month	24,615	19,946
3	Dependents	-	Presence of children under 16 years old and elderly individuals over 60 years old in the household	1.09	1.23
4	Age	-	Age of the respondent	39.26	10.77
5	Education Level	Ranging from 1 to 18	Number of years of education	14.64	3.32
6	Family Size	-	Total number of members in the household	4.39	1.4
7	Food Safety Perception	0-10	Total score from questions about food safety	6.88	2.34
8	Price	Values of 480, 600, 720, 820 (thousand VND)	Proposed price level	698,17	140,86

Source: Analysis results from 320 respondents

The results of Table 4 show that today's consumers frequently follow news about food safety and scandals in the food business process.

The average score of the food safety perceptions scale is about 6.88 points.

Table 4: Descriptive statistics of consumers' food safety perceptions

No.	Item	Mean	Standard Deviation
1	The issue of food hygiene and safety is not guaranteed today because there have been many food scandals recently.	1.33	0.70
2	Currently there are many foods on the market of unknown origin.	1.24	0.72
3	Many foods contain preservatives that are contrary to the regulations of the Ministry of Health.	1.57	0.57
4	Every year there are many food poisoning cases that result in many deaths and property damage.	1.38	0.66
5	Some vegetables, tubers, fruits, and meat contain banned substances in excess of the allowed limit.	1.35	0.70

Source: Analysis results from 320 respondents

Table 5 presents the results of the analysis for the two Logit models. Model 1 shows the estimated WTP with a single independent variable, which is the price (Bid); Model 2

presents the estimated WTP with independent variables including price, food safety perceptions, and consumer characteristics.

Table 5: Results of Logit model analysis

Variable name	Model 1		Model 2	
	Coefficient	Standard Error	Coefficient	Standard Error
<i>Price (Bid)</i>	-0.006***	0.001	-0.007***	0.001
<i>Income</i>			0.447e ⁻⁴ ***	0.111e ⁻⁴
<i>dependents</i>			0.301**	0.147
<i>age</i>			-0.0298**	0.013
<i>Education level</i>			0.192***	0.048
<i>Family size</i>			-0.006	0.128
<i>food safety perceptions</i>			0.138**	0.064
<i>Constant</i>	3.865***	0.631	0.300	1.125
Log-Likelihood value	-198.74		-160.139	
LR	45.68		122.89	
Prob > chi2	0		0	
Pseudo R ²	0.103		0.277	
% Correct Prediction	62.81		77.81	
n	320		320	

Note: ***, **, * indicate statistical significance at 0.01, 0.05, and 0.1 levels, respectively.

The results show that the Log-likelihood value in Model 2 is higher than in Model 1. In addition, the Swait-Louviere log-likelihood Ratio test was used to select the appropriate model. The test statistic $LR = -2(-198.74 - (-160.139)) = 77.202$ is much larger than the critical value of the Chi-square distribution at significance level 0.001 with 7 degrees³ of freedom (24.322). Furthermore, the percentage of correct predictions is 62.81% for Model 1 and 77.81% for Model 2. This indicates that both models have reasonably good predictive capabilities, with Model 2 performing better than Model 1. To explain the final results of the CVM model, Model 2 will be used to estimate the WTP for organic beef.

The analysis result of Model 2 reveals that the coefficients of the income and education variables are positive and statistically significant at the 99% confidence level. This indicates that

these variables have a positive impact on the WTP for organic beef among households in Long Xuyen City. These findings are consistent with other studies such as Jin et al. (2017); Skreli et al. (2017); Wang et al. (2019); Khai et al. (2018). In practice, it is evident that higher income allows for higher spending. When consumers have a higher disposable income, they have more opportunities to spend on premium products. Additionally, the results show that as the level of education increases, the willingness to pay for organic beef also increases. This has been confirmed by other studies such as Bhattarai (2019), Owusu & Anifori (2013), and Wahida et al. (2013). Higher education levels contribute to a more advanced and modern consumer trend, with greater emphasis on aesthetics, quality, brand, packaging, safety, and health considerations.

³ The degrees of freedom are given by the difference in the number of parameters estimated in the two models

Similar to the findings of several studies (Owusu & Anifori, 2013; Wahida et al., 2013; Khai et al., 2018), the presence of older adults and children in households indicates a higher concern for health, thus positively impacting the WTP for organic food. This is reflected in the positive coefficient of the dependent variable with a 95% confidence level. The research results also demonstrate that consumers with higher awareness of food safety are more likely to accept WTP for organic food. Studies by Adams et al. (2018); Bhattarai (2019); Kokthi et al. (2021); Wang et al. (2019) and Khai et al. (2018) have also shown that individuals with higher knowledge and better awareness of food safety issues are more willing to pay for organic products.

Additionally, the estimation of a negative and significant coefficient on the price variable at a 99% confidence level indicates that, as predicted, individuals are less likely to purchase organic beef as the price increases, holding all else constant. Numerous recent studies have also highlighted that high prices act as a primary barrier that makes organic products less attractive to consumers (Cai et al., 2019; Curtis et al., 2020; Denver et al., 2019; Mazzocchi et al., 2019; Wang et al., 2019). It can be inferred that the purchasing

power of organic food in Long Xuyen City is low and heavily influenced by its price. This is an important consideration for managers and marketers when developing organic food market development programs.

One interesting finding in this study is that younger consumers in Long Xuyen City are more concerned about organic products, which contradicts the theories of consumer behavior that suggest older individuals are more health-conscious (Kotler & Armstrong, 2020). This can be explained by the fact that younger individuals are active workers with higher incomes compared to other age groups and have better access to advanced information. This finding is consistent with studies by Mazzocchi et al. (2019), Shi et al. (2013), and Yue & Tong (2009). However, some other studies have found the opposite result, indicating that older adults are more concerned about nutrition and have a higher WTP for certified organic food products, such as the research conducted by Wahida et al. (2013), Akgüngör et al. (2010), and Haghiri et al. (2009). Therefore, the relationship between age and WTP for organic food needs further empirical research to thoroughly discuss this issue, particularly in the context of a transitioning economy like Vietnam.

Table 6: Estimated willingness to pay

Measure	WTP	Lower bound	Upper bound	Unit: 1,000 VND/kg	
				ASL*	CI/MEAN
Mean/Median	647.23	601.70	692.56	0.0000	0.14

Krinsky and Robb (95 %) Confidence Interval for WTP measures (Nb of reps: 5000)

**: Achieved Significance Level for testing H0: WTP≤0 vs. H1: WTP>0*

Lastly, the Krinsky and Robb method (95%) was used to estimate the average WTP of consumers for organic beef. The results show that the average WTP of consumers is around 650,000 VND/kg of organic beef (ranging from 600,000 VND/kg to 700,000 VND/kg). Thus, the WTP for organic beef is relatively high (about 2.4 times higher than the price of normal beef). This indicates that consumers are willing to pay a

higher price for organic beef due to its superior qualities compared to normal beef, as expected.

4. Conclusion

The research findings indicate a relatively low acceptance rate for WTP for organic beef. The Logit model revealed that consumer characteristics such as income, education level, age, presence of children and older adults in the household, food safety awareness, and price are important factors influencing WTP for organic

beef. The analysis of consumer characteristics and perception factors affecting organic beef WTP helps sellers segment the market and choose the correct target market. Determining the right target market helps businesses direct their resources precisely to achieve the expected results. The research results show that the target customers of organic beef businesses are those with good incomes, higher education levels, good awareness of food safety issues, and a lot of care about their health, as well as young people with good jobs and high access to healthy lifestyle information.

In particular, price acts as a significant barrier impacting the choice of organic food, and the average willingness to pay is around 650,000 VND per kg of organic beef. Price is considered one of the decisive factors in the success or failure of businesses. In a competitive environment, customers can compare and choose products with suitable prices. Therefore, the pricing must meet the needs of the customer while ensuring the profitability of the business. The price information assists businesses in devising strategies or production plans to develop the organic food market in the future.

Within a rather tiny research scope, the study's focus was restricted to consumer characteristics, perceptions of food safety, and their influence on WTP for organic beef. Future research might concentrate on organic product attributes such as product quality, organic content, and provenance, as these factors have significant effects on consumer perceptions of organic products. Additionally, a larger sample size would provide a greater understanding of consumer behavior and a more in-depth analysis of that behavior. Besides, This study chose the single-bounded dichotomous choice to collect data by setting fixed prices to collect consumers' WTP, but this setting limits other possible WTP levels. Therefore, a major limitation of this method is that alternative price offers may change the consumer's mean WTP. Therefore, we recommend that future studies combine many different valuation methods to compare or combine before coming up with a more reasonable scenario. For example, choice modeling (CM), such as choice experiments (CE), conjoint analysis, etc., needs attention.

REFERENCES

- [1]. Adams, A., K. Agbenorhevi, J., Alemawor, F., E. Lutterodt, H., & O. Sampson, G. (2018). Assessment of the Consumers' Awareness and Marketing Prospects of Organic Fruits and Vegetables in Techiman, Ghana. *Journal of Food Security*, 6(2), 55–66. <https://doi.org/10.12691/jfs-6-2-2>
- [2]. Akgüngör, S., Miran, B., & Abay, C. (2010). Consumer willingness to pay for organic food in urban Turkey. *Journal of International Food and Agribusiness Marketing*, 22(3), 299–313. <https://doi.org/10.1080/08974431003641455>
- [3]. Bhattarai, K. (2019). Consumers' willingness to pay for organic vegetables: Empirical evidence from Nepal. *Economics and Sociology*, 12(3), 132–146. <https://doi.org/10.14254/2071-789X.2019/12-3/9>
- [4]. Cai, Z., Gold, M., & Brannan, R. (2019). An exploratory analysis of US consumer preferences for North American pawpaw. *Agroforestry Systems*, 93(5), 1673–1685. <https://doi.org/10.1007/s10457-018-0296-5>
- [5]. Curtis, K. R., Drugova, T., Knudsen, T., Reeve, J., & Ward, R. (2020). Is organic certification important to farmers' market shoppers or is eco-friendly enough? *HortScience*, 55(11), 1822–1831. <https://doi.org/10.21273/HORTSCI15291-20>
- [6]. Dan, T. Y., Dung, K. T., Thi, H. A., Huong, T. T. K., & Hanh, B. L. T. (2020). Study on willingness to pay for BRT bus service in Can Tho city: Approach using contingent valuation and inferential pricing. *Can Tho University Journal of Science*, 56(6D), 302-312.
- [7]. Denver, S., Jensen, J. D., Olsen, S. B., & Christensen, T. (2019). Consumer Preferences for 'Localness' and Organic Food Production. *Journal of Food Products Marketing*, 25(6), 668–689. <https://doi.org/10.1080/10454446.2019.1640159>

- [8]. Ha, T. M., Shakur, S., & Do, K. H. P. (2019). Rural-urban differences in willingness to pay for organic vegetables: Evidence from Vietnam. *Appetite*, 141, 104273.
- [9]. Haghiri, M., Hobbs, J. E., & McNamara, M. L. (2009). Assessing consumer preferences for organically grown fresh fruit and vegetables in eastern New Brunswick. *International Food and Agribusiness Management Review*, 12(4), 81–100.
- [10]. Hai, N. M., Moritaka, M., & Fukuda, S. (2013). Willingness to pay for organic vegetables in Vietnam: An empirical analysis in Hanoi capital.
- [11]. Hanemann, W. M., & Kanninen, B. J. (1998). *The statistical analysis of discrete-response contingent valuation data. Contingent Valuation of Environmental Preferences: Assessing Theory and Practice in the USA, Europe and Developing Countries*. Oxford University Press, Oxford.
- [12]. Icek, A. (1991). The Theory of Planned Behavior Organizational Behavior and Human Decision Processes. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- [13]. Jin, S., Li, H., & Li, Y. (2017). Preferences of Chinese consumers for the attributes of fresh produce portfolios in an e-commerce environment. *British Food Journal*, 119(4), 817–829. <https://doi.org/10.1108/BFJ-09-2016-0424>
- [14]. Khai, H. V. (2015). Assessing Consumer Preferences for Organic Vegetables: A Case Study in the Mekong Delta, Vietnam. *Information Management and Business Review*, 7(1), 41–47. <https://doi.org/10.22610/imbr.v7i1.1137>
- [15]. Khai, H. V., Duyen, T. T. T., & Xuan, H. T. D. (2018). The demand of urban consumers for safe pork in the Vietnamese mekong delta. *Journal of Social and Development Sciences*, 9(3), 47-54.
- [16]. Khoi, P. D. & Vy, N. U. (2016). Consumers' willingness to pay for organic rice in Can Tho city. *Can Tho University Journal of Science*, 4(04), 44-54
- [17]. Khai, H. V., & Phuong, H. M. (2020). Willingness to pay of local people in Khanh An commune for U Minh Ha forest conservation project. *Can Tho University Journal of Science*, 56(2), 178-184.
- [18]. Kokthi, E., Canco, I., & Topulli, E. (2021). Whose salad is organic? An attribute segmentation perspective-evidence from Albania. *Economia Agro-Alimentare*, 23(2), 1–26. <https://doi.org/10.3280/ecag2-2021oa12285>
- [19]. Kotler, P., & Armstrong, G. (2020). Principles of Marketing (Fifteenth Edition). In *The great impulse challenge*.
- [20]. Krinsky, I., & Robb, A. L. (1986). On approximating the statistical properties of elasticities. *The review of economics and statistics*, 715-719.
- [21]. Le, M. H., & Nguyen, P. M. (2022). Integrating the theory of planned behavior and the norm activation model to investigate organic food purchase intention: evidence from Vietnam. *Sustainability*, 14(2), 816.
- [22]. Mazzocchi, C., Ruggeri, G., & Corsi, S. (2019). Consumers' preferences for biodiversity in vineyards: A choice experiment on wine. *Wine Economics and Policy*, 8(2), 155–164. <https://doi.org/10.1016/j.wep.2019.09.002>
- [23]. Nandi, R., Bokelmann, W., Gowdru, N. V., & 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*, 23(4), 430–451. <https://doi.org/10.1080/10454446.2015.1048018>
- [24]. Nguyen, H. V., Nguyen, N., Nguyen, B. K., Lobo, A., & 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*, 16(6), 1037.
- [25]. Nguyen, H. V., Nguyen, N., Nguyen, B. K., & Greenland, S. (2021). Sustainable food consumption: Investigating organic meat purchase intention by Vietnamese consumers. *Sustainability*, 13(2), 953.
- [26]. Nguyen, T. M., Park, J. H., & Choi, W. L. (2021). Factors influencing consumer purchase intention

- toward organic food products: an empirical study in Vietnam market. *Journal of Channel and Retailing*, 26(1), 127-147.
- [27]. Owusu, V., & Anifori, M. O. (2013). Consumer willingness to pay a premium for organic fruit and vegetable in Ghana. *International Food and Agribusiness Management Review*, 16(1), 67–86.
- [28]. Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.
- [29]. Shi, L., House, L. A., & Gao, Z. (2013). Impact of purchase intentions on full and partial bids in BDM auctions: Willingness-to-pay for organic and local blueberries. *Journal of Agricultural Economics*, 64(3), 707–718. <https://doi.org/10.1111/1477-9552.12022>
- [30]. Skreli, E., Imami, D., Chan, C., Canavari, M., Zhllima, E., & Pire, E. (2017). Assessing consumer preferences and willingness to pay for organic tomatoes in Albania: A conjoint choice experiment study. *Spanish Journal of Agricultural Research*, 15(3). <https://doi.org/10.5424/sjar/2017153-9889>
- [31]. Vietnam Fatherland Front. (2016). *Using banned substances in livestock: Cold numbers*. Accessed 20/7/2023, from <http://daidoanket.vn/xa-hoi/su-dung-chat-cam-trong-chan-nuoi-nhung-con-so-lanhnguoi-tintuc98785>
- [32]. Wahida, Toiba, H., Umberger, W. J., & Minot, N. (2013). Exploring Indonesian consumers' willingness to pay for high-value agricultural products. *Acta Horticulturae*, 1006, 397–404. <https://doi.org/10.17660/ActaHortic.2013.1006.50>
- [33]. Wang, L., Wang, J., & Huo, X. (2019). Consumer's willingness to pay a premium for organic fruits in china: A double-hurdle analysis. *International Journal of Environmental Research and Public Health*, 16(1). <https://doi.org/10.3390/ijerph16010126>
- [34]. Yue, C., & Tong, C. (2009). Organic or local? investigating consumer preference for fresh produce using a choice experiment with real economic incentives. *HortScience*, 44(2), 366–371. <https://doi.org/10.21273/hortsci.44.2.366>

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