

Consumer Behavior and Purchase Intentions for Organic Rice: Empirical Evidence from Tianjin China

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Abstract

This study investigates the consumption characteristics and influencing factors of organic rice in Tianjin, China, based on 463 valid survey responses collected through an online questionnaire. Using chi-square tests and one-way ANOVA, the analysis reveals that consumers' purchase motivations are primarily driven by the green and pollution-free attributes of organic rice, while information channels are diverse, ranging from media to peer recommendations. The findings indicate that marital status, age, education level, and occupation significantly affect consumers' awareness and willingness to purchase organic rice. This research contributes to the literature by providing empirical evidence from Tianjin, a first-tier city in China, thereby filling a regional gap in organic food consumption studies. Practically, the results suggest that strengthening brand building, expanding marketing channels, and reinforcing trust mechanisms are essential strategies to enhance consumer recognition and purchasing power. The study offers valuable insights for policymakers and agribusiness practitioners aiming to promote sustainable development of the organic rice industry in China.

Keywords: Organic Rice, Consumer Behavior, Tianjin, Chi-Square Test, Anova, Sustainable Agriculture

Introduction

As China's economic development shifts from speed-oriented growth to quality-oriented growth, the consumption structure of its residents has also upgraded. Against the backdrop of frequent food safety incidents and increasingly prominent environmental pollution issues, nutritious, healthy, green and safe agricultural products have gradually become consumption hotspots. Organic agricultural products, with their characteristics of "high nutritional value and ecological friendliness", have attracted more attention from Chinese consumers. China's organic agriculture began to develop in 1990 and gradually got on the right track after 2003 with the promulgation of relevant laws and regulations. According to the "China Organic Product Certification and Organic Industry Development (2024)" released by the State Administration for Market Regulation of China, the sales of organic products in China reached

101.6 billion CNY in 2023, making it the third largest organic product consumption market in the world. As the most important staple food in the Chinese diet, the consumption of rice has remained stable for a long time. Compared with "selective consumption" of fruits, vegetables and snacks, rice is a "rigid demand". Therefore, organic rice is regarded by the Chinese government as an important entry point for promoting organic agricultural products. According to the "2025-2030 Organic Rice Market Planning Research and Future Potential Forecast Consulting Report" by the China Research and Analysis Institute, the market size of organic rice in China has grown rapidly, reaching 90.8 billion CNY in 2023, an increase of 18.6% compared with 2019. It can be seen from this that Chinese consumers hold a positive attitude towards organic rice. The research scope of this article mainly focuses on the consumer group in Tianjin, China, and an empirical analysis is carried out based on the data from the questionnaire survey. By analyzing the consumption characteristics of organic rice among Chinese consumers and exploring the influencing factors of their understanding and purchase intention, it is not only possible to guide consumers' consumption behavior of organic rice more reasonably and transform their positive attitude into effective purchasing power, but also further expand the market of organic rice in Tianjin, China. It can be seen that Chinese consumers have a positive attitude towards organic rice. The research scope of this article mainly focuses on the consumer group in Tianjin City, China. An empirical analysis is conducted based on the questionnaire survey data. By analyzing the consumption characteristics of Chinese consumers for organic rice and exploring the influencing factors of their understanding and purchase intention, it is not only possible to more reasonably guide consumers' consumption behavior towards organic rice, convert their positive attitude into effective purchasing power, but also further expand the organic rice market in Tianjin City. Although the consumption situation of organic rice has been studied in several cities in China, Tianjin, due to its unique population and economic characteristics, has not been fully explored. This study provides empirical evidence to fill this gap and offers insights into consumer behavior in first-tier cities.

Literature Review

Organic rice is produced through a natural organic cultivation method without the use of chemical synthetic pesticides, fertilizers, herbicides, etc. as agricultural chemicals throughout the entire planting process. With the improvement of Chinese consumers' awareness of food safety, organic rice has gradually become the focus of attention for Chinese consumers. However, compared to its consumption potential, the overall penetration rate of organic rice in China is not high, and its market share has not fully reached the expected level. By combining existing research results, it can be found that individual characteristics of consumers have a certain impact on their perception and purchase intention of organic rice. Therefore, the study of individual characteristics of consumers has become particularly important. This article mainly conducts analysis based on consumer behavior theory and agricultural economics-related theories. The consumer behavior theory indicates that consumers' purchase decisions are influenced by multiple factors such as their individual characteristics, cognitive level, and information acquisition methods, which jointly drive the acceptance and purchase tendency of products. The agricultural economics theory further emphasizes that the attributes of green and pollution-free, high nutritional value, etc. of agricultural products play an important role in shaping consumers' preferences.

A large number of empirical studies have shown that factors such as gender, marital status, age, education, occupation, and family income of consumers will affect their perception and purchase intention to varying degrees. Through a survey of urban consumers in Beijing, China, it was found that the main factors affecting consumers' perception level are purchase experience and experience, and education. The consumers' perception level has a direct impact on actual purchasing behavior (Ma Ji, 2009). Consumers in Changsha, China, have a positive correlation with factors such as gender, marital status, age, education, and monthly income with organic rice consumption (Li Lu et al., 2016). The age, occupation, education, and monthly income of consumers in Urumqi, China, are the main factors affecting consumers' perception and purchase intention (Pu Juan et al., 2016). The gender, education level, family structure in the sample individual characteristic variables have a significant impact on the purchase intention of organic agricultural products by Japanese consumers (Cao Bin et al., 2020). Organic rice is different from ordinary rice. High-income and health-conscious families are the main consumer groups (Wu et al., 2019), while consumers with children, older age, and higher education have a stronger purchase intention for organic rice (WAHIDA et al., 2013). In addition, compared to men, female consumers have a relatively stronger attention and purchase intention for organic rice (Chu Wenlu, 2025). To further verify the correlation between individual characteristics of consumers and their understanding and purchase intention, this study uses chi-square test to conduct statistical analysis of relevant variables. Previous studies have also confirmed the applicability of chi-square test in such analyses. The chi-square test analysis found that the understanding level of Huai'an rice by consumers and their purchase intention are significantly influenced by age, education level, and marital status (Wei Jie et al., 2021), and there are also significant differences in the purchase intention of organic millet by consumers with different marital statuses, income levels, and education levels (Yang Cheng et al., 2024).

In summary, individual characteristics of consumers are one of the main factors affecting the perception level and purchase intention of organic rice by consumers in Tianjin, China. The perception level and purchase intention of consumers are the key driving forces for the development of China's organic rice industry, which not only affects sales but also determines industrial upgrading and market structure changes. If the understanding and purchase intention of consumers can be effectively enhanced, it will be conducive to the optimization of the overall value chain and sustainable development of China's organic rice industry. Most prior studies highlight demographic factors such as age, education, and income, but few have examined the combined effects of marital status and occupation, which this study addresses.

Data Source and Descriptive Explanation

Data Source

From the perspective of food attributes and price positioning, organic rice in China is still considered a high-end food. The first and second-tier cities in China are the main consumer markets for organic rice. This article takes consumers in China's first-tier cities (Tianjin) as the research subjects. A questionnaire was created using the Qianliwang app, and questionnaires were randomly distributed to consumers in Tianjin, China through the internet. A total of 463 valid questionnaires were obtained. The questionnaire was divided into three parts: basic information of consumers, consumers' purchasing behavior of rice, and consumers' willingness to purchase organic rice. While conducting statistical analysis on the above three

parts, chi-square tests were also used to conduct one-way variance analysis on consumers' understanding of organic rice and their purchasing intentions.

Descriptive Explanation

Survey on the Basic Situation of Consumers in Tianjin City, China

The basic information survey of consumers includes: gender, marital status, age, educational background, occupation and the average monthly income per family member. As shown in Table 1: (1) Gender distribution: Female consumers account for 62.42% while male consumers account for 37.58%; (2) Marital status: Married individuals are the majority, accounting for 90.28%, while unmarried individuals account for 9.72%; (3) Age distribution: The majority of consumers are aged between 41-50 and 51-60, accounting for 28.51% and 31.32% respectively; (4) Educational attainment: The majority are college graduates and above, accounting for 33.48% and 20.95% respectively; the respondents generally have a relatively high level of education; (5) Occupation: Retirees and those working in government agencies and public institutions account for the highest proportion, together accounting for 58.32%, followed by employees of enterprises, accounting for 26.57%; (6) Income: The average monthly income per consumer's family is mainly within the range of 3500-5000 CNY and above 10000 CNY, accounting for 41.90% in total.

Table 1

Survey on the Basic Situation of Consumers in Tianjin City, China

| Basic Information | Grouping | Number of People | Percentage/% |
|--|---------------------------|------------------------------|--------------|
| Gender | Male | 174 | 37.58 |
| | Female | 289 | 62.42 |
| Marital Status | Spinsterhood | 45 | 9.72 |
| | Married | 418 | 90.28 |
| Age | Under 20 years old | 2 | 0.43 |
| | 20-30 years old | 46 | 9.94 |
| | 31-40 years old | 77 | 16.63 |
| | 41-50 years old | 132 | 28.51 |
| | 51-60 years old | 145 | 31.32 |
| | Over 61 years old | 61 | 13.17 |
| | Education Background | Junior High School and Below | 39 |
| High School / Vocational School / Technical School | | 81 | 17.50 |
| Junior College / Higher Vocational School | | 91 | 19.65 |
| Undergraduate College | | 155 | 33.48 |
| Master's Degree or Above | | 97 | 20.95 |
| Occupation | | Individual Operation | 43 |
| | Other: Housewife | 1 | 0.22 |
| | Other: Investor | 1 | 0.22 |
| | Other: Insurance Agent | 1 | 0.22 |
| | Other: Business Operation | 1 | 0.22 |

| | | | |
|-------------------|-------------------------|-----|-------|
| | Other: | | |
| | Truck Driver | 1 | 0.22 |
| | Others: Sales | 1 | 0.22 |
| | Other: | | |
| | Freelance Work | 3 | 0.65 |
| | Employees of the | | |
| | Enterprises | 123 | 26.56 |
| | Retirement | 133 | 28.73 |
| | Agriculture, Labor Work | | |
| | Personnel | 18 | 3.88 |
| | Government Agencies and | | |
| | Public Institutions | 137 | 29.58 |
| Family Per Capita | | | |
| Monthly Income | Under 3500 CNY | 62 | 13.39 |
| | 3500-5000 CNY | 95 | 20.52 |
| | 5000.01-6500 CNY | 81 | 17.49 |
| | 6500.01-8000 CNY | 61 | 13.18 |
| | 8000.01-10000 CNY | 65 | 14.04 |
| | Over 10000 CNY | 99 | 21.38 |

Survey on Consumers' Rice Purchasing Behaviors in Tianjin City, China

As shown in Table 2, the monthly rice consumption of consumer households mainly falls within the range of 1-5 kg, accounting for 53.13% of the total sample; the packaging specifications of purchased rice are mainly concentrated at 5 kg (56.16%) and 10 kg (23.54%). 28.08% of consumers tend to purchase rice within the price range of 3.01-4 CNY, and 19.22% of consumers tend to purchase rice within the price range of 4.01-5 CNY. Consumers mainly choose large supermarkets (60.91%) and farmers' markets (18.14%) for purchasing rice, and the proportion of consumers choosing direct sales from manufacturers and small and medium-sized stores is relatively small. When purchasing rice, consumers mainly consider: taste, freshness (fresh rice vs. old rice), brand, origin, price, variety, quality grade (divided by pesticide residue content), among which 29.16% of consumers pay more attention to the taste of rice, followed by freshness (24.62%) and price (18.79%). The taste and freshness of the current year's new rice are far superior to that of old rice, therefore, 59.61% of consumers prefer to purchase the current year's new rice, and 33.48% of consumers only purchase the current year's new rice. When there is high-quality and good taste rice with a slightly higher price, 78.62% of consumers express willingness to purchase.

Table 2

Survey on Consumers' Rice Purchasing Behaviors in Tianjin City China

| Research Content | Grouping | Number of People | Percentage/% |
|---|---|------------------|--------------|
| The monthly rice consumption of your family | Under 1kg | 51 | 11.01 |
| | 1-2.5kg | 103 | 22.25 |
| | 2.51-5kg | 143 | 30.89 |
| | 5.01-7.5kg | 88 | 19.01 |
| | 7.51-10kg | 36 | 7.77 |
| | Over 10.01kg | 42 | 9.07 |
| Which kind of packaged rice do you usually purchase? | 1kg | 21 | 4.53 |
| | 2.5kg | 53 | 11.45 |
| | 5kg | 260 | 56.16 |
| | 10kg | 109 | 23.54 |
| | Bulk Rice | 18 | 3.89 |
| | Other | 2 | 0.43 |
| The price range for your regular purchase of rice (500 grams) | Under 2.5 CNY | 16 | 3.46 |
| | 2.5-3 CNY | 88 | 19.01 |
| | 3.01-4 CNY | 130 | 28.08 |
| | 4.01-5 CNY | 89 | 19.22 |
| | 5.01-6 CNY | 76 | 16.41 |
| | Over 6.01 CNY | 64 | 13.82 |
| The channels through which you usually purchase rice? | Open Fair | 84 | 18.14 |
| | Large Supermarkets | 282 | 60.91 |
| | Small and Medium-Sized Stores | 17 | 3.67 |
| | Online Platform | 47 | 10.15 |
| | Factory Direct Sales on-site | 22 | 4.75 |
| | Other | 11 | 2.38 |
| Which type of fresh rice do you usually purchase? | Mainly Purchase the Rice on Sale at the Supermarket | 3 | 0.65 |
| | Only Enough to Buy Cheap Old Rice | 7 | 1.51 |
| | Tend to Purchase the New Rice of the Current Year. | 276 | 59.61 |
| | Only Purchase the New Rice of the Current Year. | 155 | 33.48 |
| | Both Old Rice and New Rice can be Used. | 22 | 4.75 |
| | Would you purchase rice that has better quality and taste, but at a higher price? | Willingness | 364 |
| | Unwillingness | 67 | 14.47 |
| | At present, it won't. | 32 | 6.91 |

Survey on Consumers' Purchase Intentions for Organic Rice in Tianjin City, China

As shown in Table 3, 53.13% of consumers have some knowledge about organic rice, while 33.69% have no knowledge at all. Only 13.18% are very familiar with it. Most consumers learn about organic rice through recommendations from friends or from news media. Among the

consumers who occasionally purchase and frequently purchase organic rice, 40.39% and 10.58% respectively. Although 227 consumers have never purchased organic rice, 78.85% of them are willing to try purchasing it. Among the 236 consumers who occasionally or frequently purchase organic rice, 81.36% believe that the most significant advantage of organic rice over ordinary rice is its green and pollution-free nature. Among the 415 consumers who have purchased or have not purchased but are willing to try purchasing organic rice, the highest acceptable price range for organic rice is mainly within 10 CNY per 500g and 10-11 CNY per 500g, accounting for 48.19% and 24.34% of the total sample respectively.

Table 3
Survey on Consumers' Purchase Intentions for Organic Rice

| Research Content | Grouping | Number of People | Percentage/% |
|---|---------------------------------------|---------------------|--------------|
| Do you know about organic rice? | General Understanding | 246 | 53.13 |
| | Know a Lot About | 61 | 13.18 |
| | Incomprehension | 156 | 33.69 |
| | Friend's Recommendation | 151 | 49.19 |
| Where did you learn about organic rice? | News Media | 91 | 29.64 |
| | Network Shopping Platform | 25 | 8.14 |
| | Factory Direct Sales on-site | 15 | 4.89 |
| | Open Fair | 2 | 0.65 |
| | Supermarket | 18 | 5.86 |
| | Other | 5 | 1.63 |
| | Have you ever purchased organic rice? | Occasional Purchase | 187 |
| | Regular Purchase | 49 | 10.58 |
| | Have not Purchased | 227 | 49.03 |
| Compared to regular rice, what do you think are the advantages of organic rice? | Green, Non-Harmful | 192 | 81.36 |
| | High Nutritional Value | 14 | 5.93 |
| | The Price is Acceptable | 8 | 3.39 |
| | The Aroma is Rich and Fragrant | 13 | 5.51 |
| | Unique in Taste Has a Chewy Texture | 9 | 3.81 |
| Would you like to consider purchasing organic rice? | Willingness | 179 | 78.85 |
| | Unwillingness | 28 | 12.34 |
| | At present, it won't. | 20 | 8.81 |
| The highest price you are willing to accept for organic rice (500g) | Under 10 CNY | 200 | 48.19 |
| | 10-11 CNY | 101 | 24.34 |
| | 11.01-12 CNY | 80 | 19.28 |
| | 12.01-13 CNY | 17 | 4.09 |
| | 13.01-14 CNY | 1 | 0.24 |
| | Over 14.01 CNY | 16 | 3.86 |

Data Analysis

Analysis of Variance of the Single Factor Influencing the Degree of Understanding of Organic Rice by Consumers in Tianjin City, China

The level of consumers' understanding of organic rice may be influenced by group differences. As shown in Table 4, among the consumers who are very familiar with organic rice, there are 30 men (49.2%) and 31 women (50.8%); 3 unmarried people (4.9%) and 58 married people (95.1%); 1 person under 20 years old (1.6%), 2 people aged 20-30 (3.3%), 7 people aged 31-40 (11.5%), 15 people aged 41-50 (24.6%), 29 people aged 51-60 (47.5%), and 7 people over 61 years old (11.5%); 13 people with education level of junior high school or below (21.3%), 2 people with high school/technical secondary school/vocational high school education (3.3%), 7 people with college/vocational college education (11.5%), 21 people with bachelor's degree or above (34.4%), and 18 people with master's degree or above (29.5%); 9 people with occupation as self-employed, 5 people as farmers or workers, 16 people as retirees, 9 people as enterprise employees, 21 people as government agencies and public institutions, and 1 person as others (1.6%); 7 people with per capita monthly income of less than 3500 CNY (11.5%), 16 people with income of 3500-5000 CNY (26.2%), 9 people with income of 5000.01-6500 CNY (14.8%), 7 people with income of 6500.01-8000 CNY (11.5%), 2 people with income of 8000.01-10000 CNY (3.3%), and 20 people with income of more than 10000 CNY (32.8%). The results show that the level of understanding of organic rice by consumers of different ages, education levels and occupations has certain influence ($P < 0.05$). In terms of age, consumers with a higher level of understanding of organic rice mainly concentrate in the age range of 31-60. In terms of education level, consumers who are very familiar with organic rice are mainly concentrated in those with a bachelor's degree or above. In terms of occupation, consumers who are very familiar with organic rice mainly concentrate in government agencies, public institutions and retirees.

Table 4

One-way ANOVA on the Degree of Understanding of Organic Rice by Consumers

| Items | Grouping | Do you know about organic rice? | | | χ^2 | P-Value |
|----------------|--------------------|---------------------------------|-----------------------|------------------|----------|---------|
| | | Incomprehension | General Understanding | Know a Lot About | | |
| Gender | Male | 54 (34.6%) | 90(36.6%) | 30 (49.2%) | 4.188 | 0.123 |
| | Female | 102 (65.4%) | 156(63.4%) | 31 (50.8%) | | |
| Marital Status | Married | 136 (87.2%) | 224(91.1%) | 58 (95.1%) | 3.481 | 0.175 |
| | Spinsterhood | 20 (12.8%) | 22(8.9%) | 3(4.9%) | | |
| Age | Under 20 years old | 0 | 1(0.4%) | 1(1.6%) | 30.249 | 0.001 |
| | 20-30 years old | 25 (16.0%) | 19(7.7%) | 2(3.3%) | | |
| | 31-40 years old | 32 (20.5%) | 38(15.4%) | 7 (11.5%) | | |
| | 41-50 | 41 | 76(30.9%) | 15 | | |

| | | | | | | |
|----------------------------------|--|------------|-----------|------------|--------|-------|
| | years old | (26.3%) | | (24.6%) | | |
| | 51-60 years old | 47 (30.1%) | 69(28.0%) | 29 (47.5%) | | |
| | Over 61 years old | 11(7.1%) | 43(17.5%) | 7 (11.5%) | | |
| Education Background | Junior High School and Below | 14(9.0%) | 12(4.9%) | 13 (21.3%) | 37.464 | 0.000 |
| | High School / Vocational School / Technical School | 22 (14.1%) | 57(23.2%) | 2(3.3%) | | |
| | Junior College / Higher Vocational School | 34 (21.8%) | 50(20.3%) | 7 (11.5%) | | |
| | Undergraduate College | 61 (39.1%) | 73(29.7%) | 21 (34.4%) | | |
| | Master's Degree or Above | 25 (16.0%) | 54(22.0%) | 18 (29.5%) | | |
| Occupation | Individual Operation | 15(9.6%) | 19(7.7%) | 9 (14.8%) | 37.457 | 0.021 |
| | Other: Housewife | 0 | 1(0.4%) | 0 | | |
| | Other: Investor | 1(0.6%) | 0 | 0 | | |
| | Other: Insurance Agent | 1(0.6%) | 0 | 0 | | |
| | Other: Business Operation | 1(0.6%) | 0.0% | 0 | | |
| | Other: Truck Driver | 0 | 1(0.4%) | 0 | | |
| | Others: Sales | 1(0.6%) | 0 | 0 | | |
| | Other: Freelance Work | 2(1.3%) | 0 | 1(1.6%) | | |
| | Employees of the Enterprises | 58 (37.2%) | 56(22.8%) | 9 (14.8%) | | |
| | Retirement | 34 (21.8%) | 83(33.7%) | 16 (26.2%) | | |
| | Agriculture, Labor Work Personnel | 5(3.2%) | 8(3.3%) | 5(8.2%) | | |
| | Government Agencies and Public Institutions | 38 (24.4%) | 78(31.7%) | 21 (34.4%) | | |
| Family Per Capita Monthly Income | Under 3500 CNY | 19 (12.2%) | 36(14.6%) | 7 | 16.592 | 0.084 |

| | | | |
|-------------------|---------------|------------|---------|
| | | | (11.5%) |
| | | | 16 |
| 3500-5000 CNY | 33 (21.2%) | 46 (18.7%) | (26.2%) |
| | | | 9 |
| 5000.01-6500 CNY | 29 (18.6%) | 43(17.5%) | (14.8%) |
| | | | 7 |
| 6500.01-8000 CNY | 23 (14.7%) | 31(12.6%) | (11.5%) |
| | | | 2(3.3%) |
| 8000.01-10000 CNY | 18 (11.5%) | 45(18.3%) | (%) |
| | | | 20 |
| Over 10000 CNY | 34 (21.8%) | 45(18.3%) | (32.8%) |

Analysis of Variance of the Single Factor Influencing the Purchase of Organic Rice by Consumers in Tianjin City, China

As shown in Table 5, whether consumers choose to purchase organic rice may be influenced by differences in consumer groups. Among consumers who frequently purchase organic rice, there are 21 males (42.9%) and 28 females (57.1%); 1 person is unmarried (2.0%), and 48 people are married (98.0%); 1 person is aged 20-30 (2.0%), 6 people are aged 31-40 (12.2%), 11 people are aged 41-50 (22.4%), 20 people are aged 51-60 (40.8%), and 11 people are over 61 years old (22.4%); 10 people have a junior high school education or below (20.4%), 9 people have a high school/technical secondary school/vocational high school education (18.4%), 9 people have a college/vocational college education (18.4%), 15 people have a bachelor's degree (30.6%), and 6 people have a master's degree or above (12.2%); 7 people have an individual business as their occupation, 4 people are farmers or workers, 20 people are retired, 8 people are enterprise employees, and 10 people are from government agencies and public institutions; 10 people have a monthly per capita income of less than 3500 CNY (20.4%), 12 people have a monthly per capita income of 3500-5000 CNY (24.5%), 10 people have a monthly per capita income of 5000.01-6500 CNY (20.4%), 3 people have a monthly per capita income of 6500.01-8000 CNY (6.1%), 6 people have a monthly per capita income of 8000.01-10000 CNY (12.2%), and 8 people have a monthly per capita income of more than 10000 CNY (16.3%). The results show that different marital statuses, ages, educational levels, and occupations of consumers have certain influences on their willingness to purchase organic rice ($P < 0.05$). In terms of marital status, consumers who have purchased organic rice are mainly in the married group. In terms of age, consumers who have purchased organic rice are mainly concentrated in the 51-60 age group. In terms of educational level, most consumers who have purchased organic rice have a bachelor's degree. In terms of occupation, consumers who have purchased organic rice are from government agencies, public institutions, and retirees.

Table 5

One-way ANOVA on the Purchasing of Organic Rice by Consumers

| Items | Grouping | <i>Have you ever purchased organic rice?</i> | | | χ^2 | P- Value | | |
|--|-------------------------|--|-------------------------|-------------------------|------------|-------------|---------------|------------|
| | | Have not Purchase d | Occasiona l Purchase | Regular Purchas e | | | | |
| Gender | Male | 83 (36.6%) | 70(37.4%) | 21 (42.9%) | 0.683 | 0.71 1 | | |
| | Female | 144 (63.4%) | 117 (62.6%) | 28 (57.1%) | | | | |
| Marital Status | Married | 198 (87.2%) | 172 (92.0%) | 48 (98.0%) | 6.323 | 0.04 2 | | |
| | Spinsterhood | 29 (12.8%) | 15(8.0%) | 1(2.0%) | | | | |
| Age | Under 20 years old | 0 | 2(1.1%) | 0 | 33.59 | 0.00 0 | | |
| | 20-30 years old | 34(15.0%)) | 11(5.9%) | 1(2.0%) | | | | |
| | 31-40 years old | 47(20.7%)) | 24(12.8%) | 6(12.2%)) | | | | |
| | 41-50 years old | 67 (29.5%) | 54 (28.9%) | 11 (22.4%) | | | | |
| | 51-60 years old | 61(26.9%)) | 64(34.2%) | 20 (40.8%) | | | | |
| | Over 61 years old | 18(7.9%) | 32(17.1%) | 11 (22.4%) | | | | |
| | Education Background | Junior High School and Below | 21(9.3%) | 8(4.3%) | | | 10 (20.4%) | 22.77 1 |
| High School / Vocational School / Technical School | 31(13.7%)) | 41(21.9%) | 9(18.4%)) | | | | | |
| Junior College / Higher Vocational School | 41(18.1%)) | 41(21.9%) | 9(18.4%)) | | | | | |
| Undergraduate College | 87(38.3%)) | 53(28.3%) | 15 (30.6%) | | | | | |
| Master's Degree or Above | 47(20.7%)) | 44(23.5%) | 6(12.2%)) | | | | | |
| Occupation | Individual Operation | 21(9.3%) | 15(8.0%) | 7(14.3%)) | 36.36 6 | 0.02 8 | | |
| Other: Housewife | 1(0.4%) | 0 | 0 | | | | | |
| Other: Investor | 1(0.4%) | 0 | 0 | | | | | |
| Other: Insurance Agent | 1(0.4%) | 0 | 0 | | | | | |
| Other: Business Operation | 1(0.4%) | 0 | 0 | | | | | |
| Other: Truck Driver | 0 | 1(0.5%) | 0 | | | | | |
| Others: Sales | 1(0.4%) | 0 | 0 | | | | | |
| Other: Freelance Work | 2(0.9%) | 1(0.5%) | 0 | | | | | |

| | | | | | | |
|----------------------------------|---|-----------|-----------|-----------|------|------|
| | Employees of the Enterprises | 79(34.8%) | 36(19.3%) | 8(16.3%) | | |
| | Retirement | 47(20.7%) | 66(35.3%) | 20(40.8%) | | |
| | Agriculture, Labor Work Personnel | 9(4.0%) | 5(2.7%) | 4(8.2%) | | |
| | Government Agencies and Public Institutions | 64(28.2%) | 63(33.7%) | 10(20.4%) | | |
| Family Per Capita Monthly Income | Under 3500 CNY | 32(14.1%) | 20(10.7%) | 10(20.4%) | 8.71 | 0.56 |
| | 3500-5000 CNY | 42(18.5%) | 41(21.9%) | 12(24.5%) | | |
| | 5000.01-6500 CNY | 40(17.6%) | 31(16.6%) | 10(20.4%) | | |
| | 6500.01-8000 CNY | 33(14.5%) | 25(13.4%) | 3(6.1%) | | |
| | 8000.01-10000 CNY | 28(12.3%) | 31(16.6%) | 6(12.2%) | | |
| | Over 10000 CNY | 52(22.9%) | 39(20.9%) | 8(16.3%) | | |

Conclusion and Suggestion

Research Conclusion

First, in terms of consumers' personal characteristics, the level of understanding of organic rice varies among consumers of different ages, educational levels, and occupations; and the willingness to purchase organic rice also varies among consumers with different marital statuses, ages, educational levels, and occupations. This study shows that consumers aged 31-60 have a higher level of understanding of organic rice, and those aged 51-60 are the main purchasers of organic rice; married consumers have a stronger purchasing power for organic rice than unmarried consumers. Laroche (2001) proposed that consumers who are married and have underage children in their families have a higher willingness to pay for organic rice. Among the respondents, 74.08% have a college/higher vocational school education or above, of which 54.43% have a university degree or above. The higher the educational level, the stronger the awareness and acceptance of organic rice, and the opposite is true.

Secondly, consumers tend to purchase organic grains and other agricultural products due to the positive impact of organic agriculture on the environment and food safety. The theory of consumer behavior states that consumers, as "social beings", not only pay attention to their own interests in the process of making consumption decisions, but also undertake certain responsibilities for society. Therefore, when there are rice varieties in the market that are more green, safe, nutritious, etc. compared to ordinary rice, among the 227 consumers who have never purchased organic rice, 78.85% are willing to try purchasing organic rice. And consumers who have purchased organic rice even more value its green, pollution-free and superior taste characteristics.

Thirdly, organic rice has the attribute of being a "luxury product", and its production cost is relatively high. The price of organic rice sold in the market is higher than that of ordinary rice. However, most consumers indicate that they can accept a certain premium for organic agricultural products. From the perspective of rice purchases, consumers mainly purchase rice within the price range of 3.01-4 CNY, followed by rice priced between 4.01-5

CNY. 48.19% of consumers consider the highest acceptable price for organic rice to be below 10 CNY. As a necessity for daily life, the taste and quality of rice are important factors influencing Chinese consumers' purchase of rice. The additional value of organic rice, such as its nutritional health and ecological environmental protection, makes consumers in Tianjin, China willing to pay a certain premium to purchase it. However, due to the substitutability between organic rice and ordinary rice, when the price of organic rice is too high or the supply channels are limited, consumers will prefer to purchase ordinary rice with better appearance and taste and with pesticide and fertilizer dosages in line with national standards. Thus, it can be seen that efforts should be focused on improving the quality, price, and sales channels of organic rice.

Countermeasure and Suggestion

Strengthen Brand Building

Tianjin is not a major agricultural province in China, but its agricultural history has a long tradition. "Tianjin Xiaozhan Rice" is not only the first geographical indication trademark for grain crops in China, but also possesses rich historical value. The development of organic rice industry in Tianjin can be based on traditional rice farming culture, combined with Tianjin's unique "Jin Gu Culture" and "Haier River Ecology" image, to create a "Tianjin Special Organic Rice" brand. Regular brand promotion activities can be held, and different packaging and measurement methods can be implemented according to the needs of different consumer groups. At the same time, through channels such as online media, public media, and personal self-media, the differences between traditional rice and organic cultivation can be introduced to consumers. When consumers have a certain understanding of the ecological value and planting standards of organic rice, they will be more inclined to purchase related organic agricultural products, thereby enhancing the product's popularity and core competitiveness.

Expand Marketing Channels

Organic rice is usually only available for purchase in large supermarkets, organic product specialty stores, etc. The convenience of purchasing goods is an important factor influencing consumers' purchasing decisions. The sales of organic rice can utilize a combination of online and offline methods to attract various consumer groups. Online channels include: first, conducting promotional activities through platforms such as live streaming and short videos to shorten the distance between producers and consumers; second, placing orders via WeChat and delivering organic rice to customers' homes promptly. Offline channels include: first, entering traditional large shopping malls for promotion and holding irregular consumer experience activities; second, collaborating with educational institutions or travel agencies to launch family tours, such as experiencing farm work and making specimens, allowing them to participate as much as possible and enhancing consumers' sense of participation.

Strengthen the Trust Mechanism

The quality of agricultural products is the prerequisite for winning the loyalty of consumers. The rice from Heilongjiang Wuchang, China, and Liaoning Panjin, China, have gained popularity due to their high quality. The development of organic rice in Tianjin should implement the strategy of promoting agriculture through quality. Guided by the agricultural department of Tianjin, the organic rice production enterprises and individual farmers in Tianjin will participate together. They will integrate the existing resources, establish a standardized and regulated production model, unify product names, product packaging, etc.,

and clearly mark anti-counterfeiting codes and traceability codes on the outer packaging to facilitate consumers' inquiries and achieve traceability of the quality of organic rice. On the one hand, this can reduce the production costs of organic rice and lower consumers' sensitivity to the price of organic rice; on the other hand, it can make the entire process from production to sale of organic rice transparent, thereby attracting more consumers in Tianjin, China to purchase organic rice.

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