



## **World Food Prize Youth Institutes**

### **Research on Influencing Factors of Consumer Community Group Buying Fresh Agricultural Products**

Student's name: Pan Qiuhan

Teacher's name: Wang Xianting

Shijiazhuang Foreign Language School

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**Abstract:**As digital technology continues to advance, e-commerce is becoming increasingly integrated into people's daily lives.And the online community group buying model for fresh agricultural produce is gaining increasing popularity.Therefore,this paper aims to examine the factors that influence consumers' engagement with community group purchases of fresh agricultural products.Through the method that involved the distribution of questionnaires and subsequent analysis with SPSS software, we discovered that approximately 80% of consumers have engaged in this emerging consumption model. Notably, variables such as gender, age, and income levels were found to exert a substantial influence. Building upon these findings, this paper proceeds to examine the present state of community group buying,to provide practical recommendations for the sustainable development of the "Internet + Fresh Food" sector and contribute to enhancing the momentum of agricultural modernization.

**Keywords:**online community group buying;purchasing intention;fresh food e-commerce

## **1. Introduction**

In the context of the promotion of various social e-commerce platforms, the stratification of consumption, and the emergence of lower-tier markets, community group purchasing—particularly of fresh products—has effectively responded to market demands,thereby establishing itself as a burgeoning business model.

### *1.1. Definition of community group buying Fresh Agricultural Products*

Community group buying represents an innovative online shopping model centered around residential communities.In this framework,a community leader serves as the central figure for the distribution of goods,facilitating the pre-sale of products through various platforms, including WeChat groups, mini-programs,and mobile applications.Subsequently,the group leader consolidates the purchasing needs of residents within a specific community or subgroup and coordinates the delivery of these orders to a designated pickup location following online payment,which typically surpasses the needs of each community.The group leader then organizes the distribution process, allowing consumers to retrieve their purchases at the community's designated pickup point.

This model is primarily anchored in the residential community, utilizing online platforms such as WeChat groups to effectively disseminate pertinent information through digital networks. Currently,there exists a multitude of popular group buying platforms,including Duoduo Grocery Shopping,Meituan Preferred,and various WeChat mini-programs, alongside a range of group buying collectives of differing sizes.

Furthermore, community group buying specifically addresses the daily consumption needs of households, offering users access to a range of high-frequency product categories, which encompass

agricultural products, everyday necessities, and household items. Notably, data from platform surveys indicate that the sales of fresh agricultural products constitute the largest segment, representing more than 60% of total sales across most platforms.

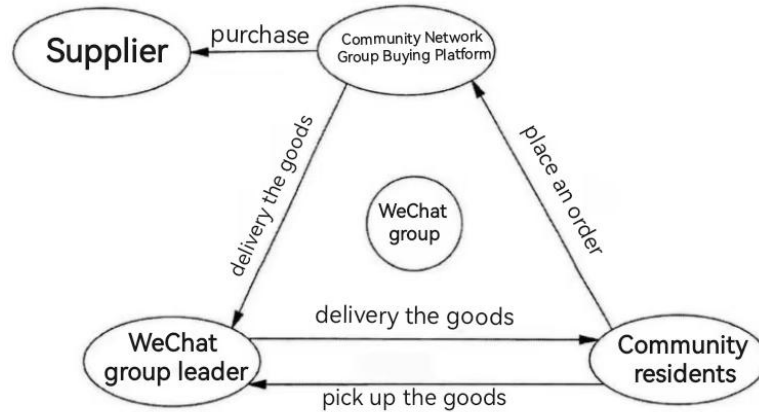


Figure 1 Community group buying process model diagram

Fresh agricultural products encompasses a diverse range of items, including vegetables, fruits, meat, eggs, dairy products, and seafood. Due to the absence of secondary processing, these products are characterized by their limited shelf life and perishability. Consequently, consumers' purchasing intentions are significantly influenced by the freshness of these items.

### 1.2. The advantages of community group buying of fresh agricultural products

First of all, it can reduce web traffic costs and improve traffic utilization. As consumer preferences evolve, there is an increasing emphasis on the experiential aspects of the consumption process. Fresh community group buying represents an innovative shopping model that is grounded in community dynamics. This model fosters a robust trust relationship among its members, facilitating sustained and meaningful interactions. Such interactions not only diminish transaction costs but also enhance customer engagement. Furthermore, community members have the opportunity to exchange shopping experiences, collaborate in flash sales, and engage in various activities together. This interplay of social interaction and consumption effectively cultivates strong user loyalty, thereby enhancing repurchase rates and lowering the costs associated with customer retention.

Moreover, it can lower logistics expenses while enhancing logistical efficiency. Fresh agricultural products are inherently perishable and subject to deterioration, necessitating promptness and safety in their logistics. To mitigate losses and maintain the quality of these products, traditional e-commerce firms typically rely on cold chain transportation throughout the entire process when dealing with perishables, which significantly escalates their logistics costs. Consequently, many traditional e-commerce companies may opt to forgo the fresh agricultural sector in pursuit of greater economic viability. In contrast, the fresh community group purchasing model operates as a

point-to-point direct sales framework, minimizing intermediary steps from the procurement source to consumer pickup. This streamlined process markedly enhances logistical efficiency, ensures the superior quality of agricultural products, and reduces logistics costs.

Additionally, it helps to decrease the sales costs while promoting innovative sales models. Traditional e-commerce typically relies on immediate sales of perishable goods through the warehouses and physical retail outlets, which incurs substantial initial expenses. Also, the limited inventory capacity of physical stores restricts their ability to offer a diverse range of products, thereby diminishing their attractiveness to consumers. On the contrary, fresh community group buying takes the form of pre-sale and distributes goods on demand according to consumer order needs, without the need to establish warehouses and physical stores, which alleviates the financial pressure of enterprises. Moreover, the drainage ability of online communities is stronger than that of physical stores, coupled with the price advantage of the direct sales model of origin, which improves the user's consumption experience and consumption stickiness. Therefore, the sales model of community group purchase of fresh agricultural products has been rapidly expanded.

## **2.Literature Review**

Currently, research pertaining to community group buying predominantly emphasizes its novel retail business model, while also examining its marketing strategies and optimization pathways. Existing papers primarily concentrate on the foundational community group buying platforms, investigating enhancements in product supply chains and logistics efficiency. Additionally, studies have addressed consumer shopping behavior, delving into the psychological motivations and influencing factors that shape these behaviors.

This paper aims to investigate consumers' willingness to engage in community group buying, alongside the various factors that influence this willingness. To achieve this, a questionnaire will be designed to identify specific elements that affect the social group purchase of fresh agricultural products. The research will employ SPSS for empirical analysis to derive meaningful insights.

## **3.Research Design**

This study employed a questionnaire survey method to collect data. The survey was conducted in May 2024, with the main focus on urban residents in Shijiazhuang City, Hebei Province, China. A random sampling method was used, with a total of 450 questionnaires distributed. Among them, 100 were paper questionnaires, and 350 were online questionnaires. A total of 423 valid questionnaires were collected. The paper questionnaires were distributed on-site, while the online questionnaires were disseminated through social media platforms such as WeChat. After collecting the data, SPSS 27.0 software was used to perform univariate analysis and cross-analysis.

## **4.Empirical Analysis**

#### 4.1. Statistical Analysis of Respondent Characteristics

Table 1 Respondent characteristic statistical analysis

| Respondent Statistics     | Options                  | Frequency | Percentage(%) |
|---------------------------|--------------------------|-----------|---------------|
| Gender                    | Male                     | 133       | 31.44         |
|                           | Female                   | 290       | 68.56         |
| Age                       | 24 and under             | 76        | 17.97         |
|                           | 25–35 years old          | 59        | 13.95         |
|                           | 36–55 years old          | 257       | 60.76         |
|                           | 55 years old and above   | 31        | 7.33          |
| Education                 | Primary school and below | 41        | 9.69          |
|                           | Middle and high school   | 112       | 26.48         |
|                           | University and above     | 270       | 63.83         |
| Profession                | Food service industry    | 20        | 4.73          |
|                           | Medical industry         | 26        | 6.15          |
|                           | Civil servant            | 94        | 22.22         |
|                           | General class company    | 80        | 18.91         |
|                           | Individual operation     | 54        | 12.77         |
|                           | Student                  | 52        | 12.29         |
|                           | Other jobs               | 97        | 22.93         |
| Marital status            | Unmarried                | 85        | 20.09         |
|                           | married                  | 338       | 79.91         |
| Fertility status          | Have children            | 318       | 75.18         |
|                           | No children              | 105       | 24.82         |
| Number of family members  | 1                        | 8         | 1.89          |
|                           | 2                        | 45        | 10.64         |
|                           | 3~4                      | 269       | 63.59         |
|                           | 5 and above              | 101       | 23.88         |
| Monthly disposable income | 2000-3000                | 86        | 20.33         |
|                           | 3000-5000                | 67        | 15.84         |
|                           | 5000-10000               | 176       | 41.61         |
|                           | Above 10000              | 94        | 22.22         |

According to the survey results, the gender proportion of the respondents is balanced. The age distribution is relatively concentrated in 36 to 55 years old, accounting for 60.76% of the total surveyed population. Moreover, this sample has high average education level and the surveyed industries are widely distributed. Besides, the sample indicates a high proportion of married individuals and those with children, with the majority of family sizes being 3 to 4 persons, accounting for 63.59% of the total sample. And the respondents' monthly income levels are relatively balanced and widely distributed across various income brackets. In general, the sample data is sourced from legitimate and extensive sources, with a high level of credibility and great analytical value.

#### 4.2. Data analysis of respondents who did not use community group buying

Table 2 Consumer community group purchase of fresh agricultural products usage

| Variable                   | Index | Frequency | Percentage (%) |
|----------------------------|-------|-----------|----------------|
| Have you ever bought fresh | Yes   | 327       | 77.3           |

|   |    |    |      |
|---|----|----|------|
| agricultural products by community group buying | No | 96 | 22.7 |
|---|----|----|------|



Chart 1 Factors that hinder consumer community group-buying of fresh agricultural products

As can be seen from the table, there are 96 respondents who have never used community group buying for fresh agricultural products, accounting for 22.7% of the total. The main factors hindering consumers from participating in community group buying include concerns about product quality and safety, and a lack of understanding of online shopping. It is evident that as a new consumption model, community group buying of fresh agricultural products still faces many restrictions in promoting to a wide consumer base. These restrictions are due both to consumers' inherent perceptions and to the need for the community group buying model to prove its standardization.

#### 4.3. Data analysis of community group buying users

##### 4.3.1. Single-variable data analysis

Table 3 The main reason for choosing community group buying fresh agricultural products

| Variable  | Index                        | Frequency | Percentage (%) |
|---|------------------------------|-----------|----------------|
| Have you ever bought fresh agricultural products by community group buying        | Yes                          | 327       | 77.3           |
|   | No                           | 96        | 22.7           |
| What prompted you to choose community group buying of fresh agricultural products | product quality              | 104       | 43.33          |
|   | Product freshness            | 130       | 54.17          |
|   | Convenience to pick up goods | 185       | 77.08          |
|   | The low price of the product | 148       | 61.67          |
|   | Other reasons                | 12        | 5.0            |

① As can be seen from the table, the frequency of using community group buying to purchase fresh agricultural products is 327, accounting for 77.3%. Among the factors that prompt consumers to choose community group buying, convenience of pickup and low product prices have a relatively high proportion. In addition, other factors such as good product quality and freshness also influence. This indicates that consumers' shopping motivations for community group buying of fresh

agricultural products are diverse, but most are based on the special advantages of community group buying over traditional retail formats.

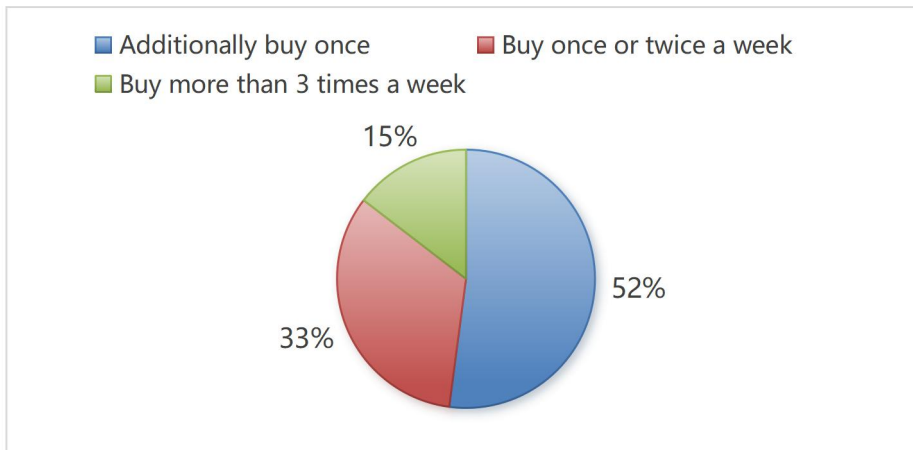


Chart 2 Frequency of respondents' community group purchase of fresh agricultural products

②The frequency of community group purchases of fresh agricultural products among the surveyed consumers is generally low, with most people only purchasing occasionally, and only 15% are high-frequency consumers. This indicates that consumers are mostly exploratory, and this new shopping model has not yet been integrated into their daily habits.

Table 4 Main platforms for consumer community group buying of fresh agricultural products

| Variable   | Index                     | Frequency | Percentage |
|--|---------------------------|-----------|------------|
| What platform do you mostly use for community group buying of fresh agricultural products? | Meituan Optimal Selection | 71        | 29.58%     |
|  | Temu                      | 17        | 7.08%      |
|  | WeChat Group              | 127       | 52.92%     |
|  | Others                    | 25        | 10.42%     |

③As can be seen from the table, consumers use a diverse range of community group purchase platforms for fresh agricultural products, among which WeChat communities are the main battlefield for communication and promotion of community group purchases, accounting for 52.92%.

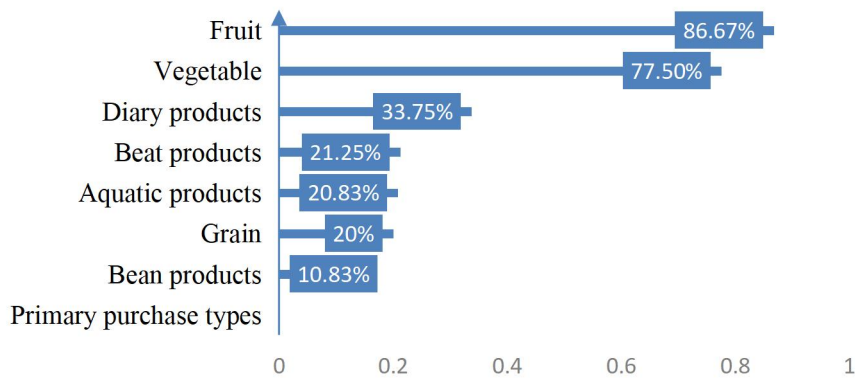


Chart 3 Main types of fresh agricultural products purchased by consumers through community group buying

④ According to the data shown in the table, among the seven categories of fresh agricultural products, fruits and vegetables are the most favored by consumers. Following that are categories such as dairy products and meat products, while soy products are less frequently purchased. This indicates that consumers still prefer to buy meat and aquatic products offline, and community group buying platforms still need to find a breakthrough in the promotion of soy products.

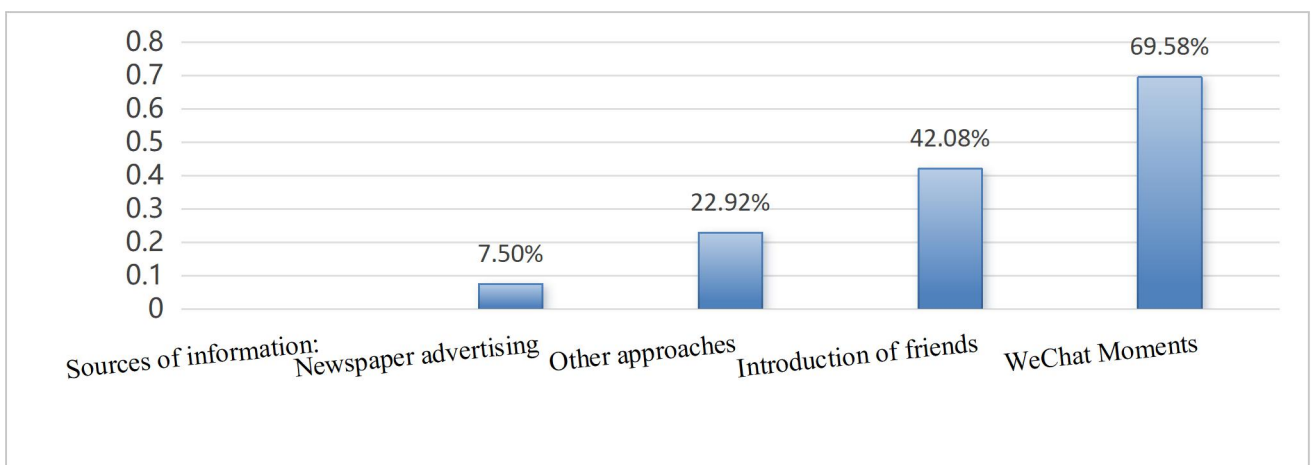


Chart 4 Ways consumers obtain group buying information

⑤ As can be seen from the table, the sources from which consumers obtain community group buying information are quite diverse, with a relatively high proportion coming through WeChat friends and introductions from relatives and friends. This is in line with the special social attributes of community group buying.



Table 5 Whether consumers encounter quality issues when participating in community group buying

| Variable  | Index | Frequency | Percentage |
|---|-------|-----------|------------|
| Have you encountered quality issues during community group buying | Yes   | 115       | 47.92%     |
|   | No    | 125       | 52.08%     |

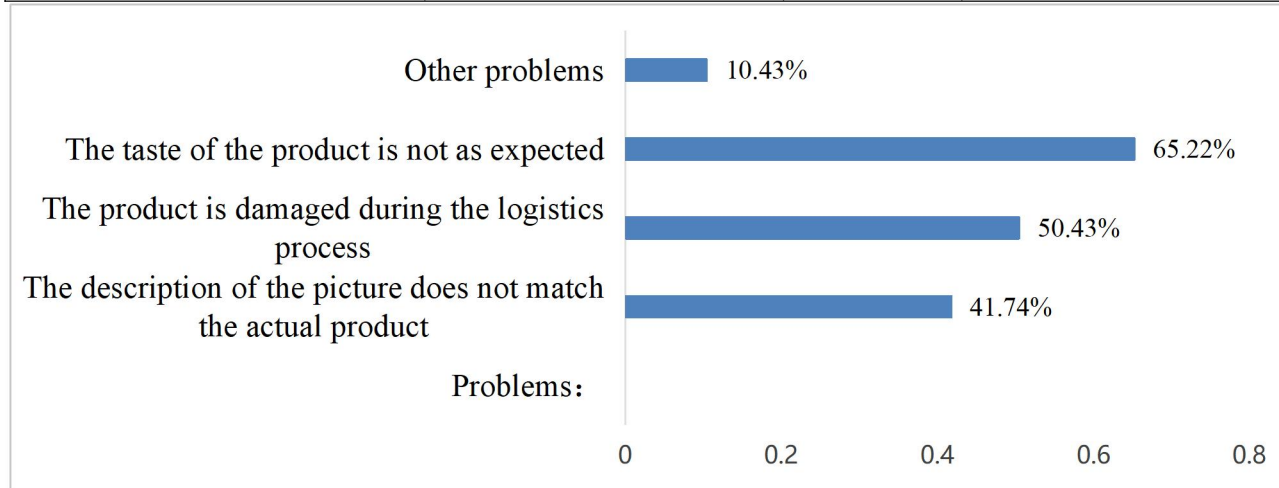


Chart 5 Product issues encountered by consumers

| Variable  | Index                       | Frequency | Percentage |
|---|-----------------------------|-----------|------------|
| How do you handle product issues when they arise? | Request to resend the goods | 7         | 6.09%      |
|   | Request a refund.           | 60        | 52.17%     |
|   | No process                  | 39        | 33.91%     |
|   | Other ways                  | 9         | 7.83%      |

Table 6 Main measures consumers take to deal with product issues

⑥ Consumers encounter various product issues during the community group buying process of fresh agricultural products, among which the main problems are the differences between consumers' psychological expectations and the actual products, as well as logistics issues. Most consumers choose to refund when encountering problems, but some opt to ignore, indicating that the after-sales service for community group buying of fresh agricultural products is still not sufficiently improved, and the sales system is not yet complete and mature, urgently needing improvement.

### 4.3.2. Cross-analysis of influencing factor data

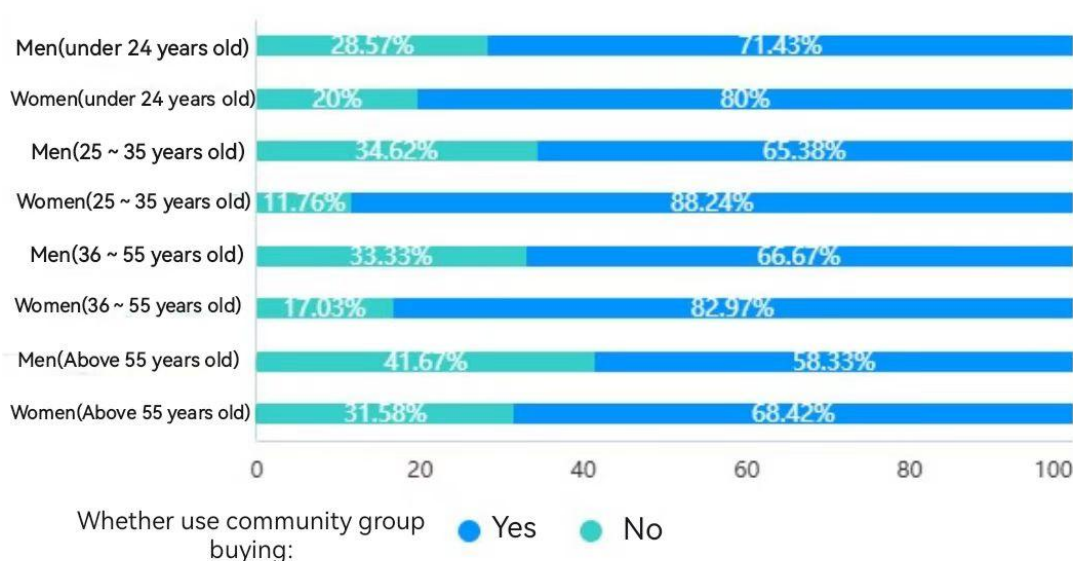


Chart 6 The impact of gender and age on consumer community group buying of fresh agricultural products

① From the cross-analysis of gender and purchase intention, it is observed that a larger proportion of women use community group buying for fresh agricultural products. In China, women often bear more responsibility for dietary life within the family, which leads to a stronger purchasing power in the field of community group buying for fresh agricultural products. However, male consumers also constitute a substantial and not to be underestimated consumer base.

② From the cross-analysis of age and purchase intention, age is an important factor influencing consumers' willingness to purchase fresh agricultural products through community group buying. The proportion of people aged 36-55 using this method is higher, while the proportion of those under 24 and between 25 to 35 years old is relatively balanced. People over 55 years old have less consumption. Respondents indicated that they are not adept at using the smart electronic devices that community group buying relies on, hence they participate less in its consumption activities. This suggests that the new sales model of community group buying, which relies on the internet information industry, should focus on improving the adaptability of electronic products for the elderly in order to expand its consumer base and make it more inclusive for all age groups.

Table 7 The impact of marital and fertility status on consumer community group purchases of fresh agricultural products

| Community group purchase consumers of fresh agricultural products |                  |
|---|------------------|
| Single  | Married          |
| 62(18.96%)  | 265(81.04%)      |
| With children   | Without children |

|                    |            |                      |                     |
|--------------------|------------|----------------------|---------------------|
| 246(75.23%)        |            | 81(24.77%)           |                     |
| One person at home | Two people | Three to four people | Five people or more |
| 8(2.45%)           | 37(11.31%) | 203(62.08%)          | 79(24.16%)          |
| 0(0.00%)           | 8(8.33%)   | 66(68.75%)           | 22(22.92%)          |

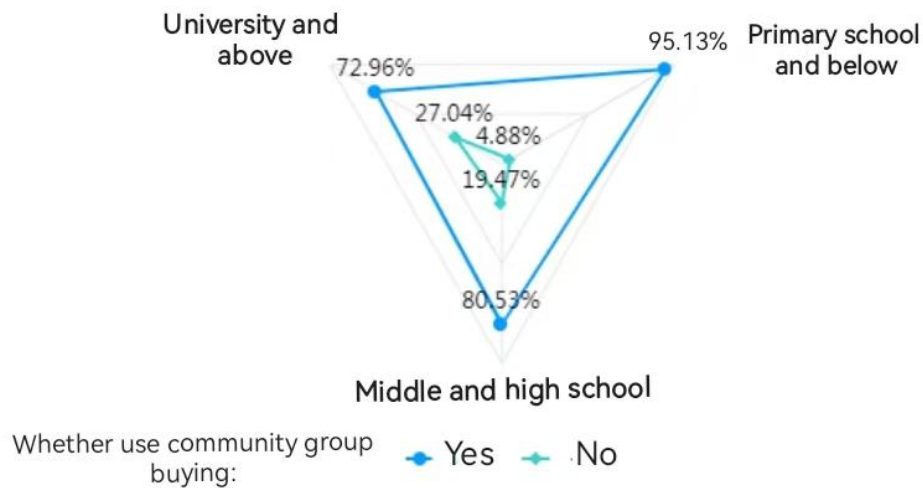


Chart 7 The impact of educational background on consumer community group buying of fresh agricultural products

③From the cross-analysis of marital status and purchase intention, consumers who are married with children tend to use community group buying for fresh agricultural products, and consumers with a larger number of family members use community group buying at a higher proportion. The size of families in our country is mainly 3 to 4 people, with a large demand for fresh agricultural products, thus community group buying has become the preferred choice for many families due to its advantages of low price and convenience.

④From the cross-analysis of educational background and purchase intention, consumers with a college degree or above have a higher proportion of using community group buying for fresh agricultural products. This group has a higher level of education, a greater acceptance of the new community group buying business model, and is also more proficient in the use of electronic devices. Therefore, this group of consumers should be the main focus for future long-term development plans of community group buying.

Table 8 The impact of occupation on consumer community group purchases of fresh agricultural products

| Community group purchase consumers of fresh agricultural products |                  |               |                       |                      |           |            |
|---|------------------|---------------|-----------------------|----------------------|-----------|------------|
| Food service industry   | Medical industry | Civil servant | General class company | Individual operation | Student   | Other jobs |
| 18(5.50%)   | 21(6.42%)        | 63(19.27)     | 60(18.35)             | 46(14.07)            | 38(11.62) | 81(24.77%) |

⑤The environmental factors exhibited a minor correlation in the study's findings. The surveyed consumers were found to have a diverse range of occupations and lacked a strong affinity with community group buying of fresh agricultural products. Concurrently, the convenience of purchasing fresh agricultural products offline near the community did not necessarily correlate with community group buying of such products. This is because offline retail stores and community group buying represent two distinct sales models, each targeting different scenarios and consumer groups, resulting in a current lack of strong market competition between the two.

## **5.Conclusions and Suggestions**

### *5.1.Conclusions*

This article focuses on consumers' willingness to participate in community group buying of fresh agricultural products and the factors influencing this willingness, using a survey questionnaire as the medium for sampling and employing SPSS empirical analysis to conduct the research, with the following conclusions obtained.

① Community group buying of fresh agricultural products has become a new channel for residents' consumption, but the consumer group still needs to be cultivated. Consumers have a high level of participation in community group buying of fresh agricultural products, but the frequency of purchases is low. Consumers have not yet turned this new business model into a habit, but rather have a more spontaneous trial mentality.

② The new sales model of community group buying of fresh agricultural products has distinct advantages over traditional offline retail of fresh agricultural products, such as lower prices, convenient pickup, good product quality, and freshness. Data indicates that these differential advantages are the main factors influencing consumers to choose community group buying of fresh agricultural products.

③ Community group buying of fresh agricultural products has a distinct audience. Its main consumer group consists of middle-aged women who are married, pregnant, and have larger families. Data shows that this group has a high level of participation and purchase frequency in community group buying of fresh agricultural products. In the future, community group buying platforms should not only target the main consumer group but also expand their audience to achieve long-term development.

④ Community group buying of fresh agricultural products is still in the development stage. Consumer satisfaction needs to be improved, and the industrial service system is yet to be perfected. Consumers' risk perception of community group buying and its inadequate after-sales service are important factors affecting consumer willingness to participate and continuous purchasing.

Meanwhile, frequent quality issues during the community group buying process, along with immature after-sales service, hinder consumers from making long-term purchases.

⑤ Social networking media play a significant role in the dissemination of information and the purchasing platform for community group buying of fresh agricultural products. Whether it's online WeChat chat groups or offline personal communication, consumers tend to combine group buying consumption with interpersonal socializing in a warm business model.

## *5.2.Suggestions*

### *5.2.1.Suggestions from the perspective of group-buying platform construction*

It is imperative to enhance the supervisory framework governing the supply chain of fresh agricultural products, in order to ensure the highest standards of product quality. To mitigate consumer concerns regarding product safety, group buying platforms must implement robust mechanisms for supply chain oversight. Furthermore, it is essential to carefully curate product selections that align with the diverse preferences and needs of consumers. Ultimately, the establishment of a distinctive, independent brand will facilitate the expansion of market share.

Moreover, to enhance retail experiences, it is essential to further integrate social interactions with consumption practices, thereby fostering a temperature retail environment. Group buying platforms ought to prioritize user experience by emphasizing detailed product descriptions, which can significantly enhance consumer satisfaction. Concurrently, these platforms should leverage social media to attract new customers, creating a communication-driven effect that can amplify brand influence.

### *5.2.2.Suggestions from the perspective of improving the logistics system*

Strengthen the construction of the logistics system to ensure that consumers have timely access to information. Logistics is one of the main factors affecting the group purchase of fresh produce by consumers. Therefore, in order to promote the development of community group buying mode, it is necessary to establish a complete logistics real-time monitoring system to track and find product problems in the logistics process and deal with them in a timely manner. In addition, it is also necessary to choose the right cold chain logistics equipment and establish a safe transportation environment to improve logistics efficiency and reduce product loss. Logistics information should also be disclosed to consumers in a timely manner, so as to exchange logistics transparency for consumer trust and reduce consumers' concerns about logistics risks.

## **6.Prospects**

In conclusion, the community group purchasing model for fresh agricultural products is well-aligned with the contemporary societal trends characterized by the rapid advancement of e-commerce, the ongoing promotion of smart agriculture, and the increasing sophistication of consumer market demands. This model effectively integrates social dynamics with innovative retail

approaches, thereby catering to the refined shopping preferences of consumers. The benefits of community group purchasing in this context are significant, offering products that are cost-effective, facilitating efficient logistics, providing transparent product information, and leveraging social networks for rapid promotion. However, challenges remain, including issues related to product transportation, discrepancies between product offerings and consumer expectations, and an inadequate after-sales support system. These factors currently hinder the model's development and necessitate prompt attention for improvement.

Looking ahead, the evolution of community group purchasing will increasingly focus on addressing the diverse needs of consumers, emphasizing a 'people-centered' development philosophy. There will be a continued commitment to enhancing convenience and benefiting the populace, thereby improving overall quality of life. Concurrently, the community group purchase of fresh agricultural products will adapt to emerging trends and market demands, seeking to establish new organizational structures for the future. This initiative is poised to significantly advance the integration of the Internet with agriculture and contribute to the revitalization of rural areas.

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