Analysis And Research on User of Agricultural Products Live Streaming of E-Commerce Under the Background of China's Rural Revitalization

Xiaoliang Liu[1], Sheng Cao[2], Xiaoyu Wang[3]*

[1]First author's e-mail: 36510259@qq.com

[2]Second author's e-mail: caosheng@wdu.edu.cn

[3]*Corresponding author's e-mail: 1658492085@qq.com

[1,2,3]Wuhan Donghu University, Wuhan, Hubei, 430212, China

ABSTRACT. In the 14th Five-Year Plan, "digitization" appears more frequently in the full text. However, with the rapid development of digital economy, traditional industries are also carrying out industrial digital reform. This paper will collect and analyze the data of fresh electricity supplier industry in the live streaming of live streaming platform, and collect and analyze some agricultural fresh products data of the industry behind the scenes. This will help the fresh live personnel to better understand the consumption trend of consumers, provide guidance for rural village and individual businesses, help them establish and improve the live streaming system, and bring the live streaming standard to rural areas. While helping to open up the market for agricultural products, let farmers achieve sustained income growth, so as to help rural revitalization. This paper only investigates some data, which can be used as a reference to make a modest contribution to more relevant articles in the future.

Keywords: Fresh agricultural products E-commerce, Data collection, Information aggregation, Rural revitalization

1 INTRODUCTION

Fresh agricultural products E-commerce during the epidemic period to let people find its benefits, since then, fresh E-commerce business showed an explosive growth. Then, with the emergence of Orange Heart optimization, buy more vegetables and other forms, let the fresh E-commerce business development from the first and second tier cities to the third and fourth tier and other cities, increasingly close to people's lives, but also let more and more people trust and began to buy fresh food through this kind of online channels. In recent years, with the progress of China's information technology, online live streaming platforms have gradually emerged in people's vision. "Live streaming + fresh agricultural products" links rural agricultural products manufacturers with consumers, promoting rural revitalization and opening a new mode of live streaming with goods.

2 DATA COLLECTION

2.1 Platform profile

Douyin, is a leading music creative short video social software in China. The software, launched on September 20,2016, is a short video community platform for all ages, adding an algorithmic recommendation model at the product level to ensure content distribution efficiency.[1]In recent years, the overseas version of Douyin has also occupied the top overseas, leading the lead. Douyin is the most representative platform at home and abroad, so the data collected in this paper analyzed using Douyin platform as an example.

2.2 Project collection method

This article investigates the live streaming types of the main rural revitalization of graduate fresh e-commerce through the following four ways. The general method and flow are shown in Figure 1.
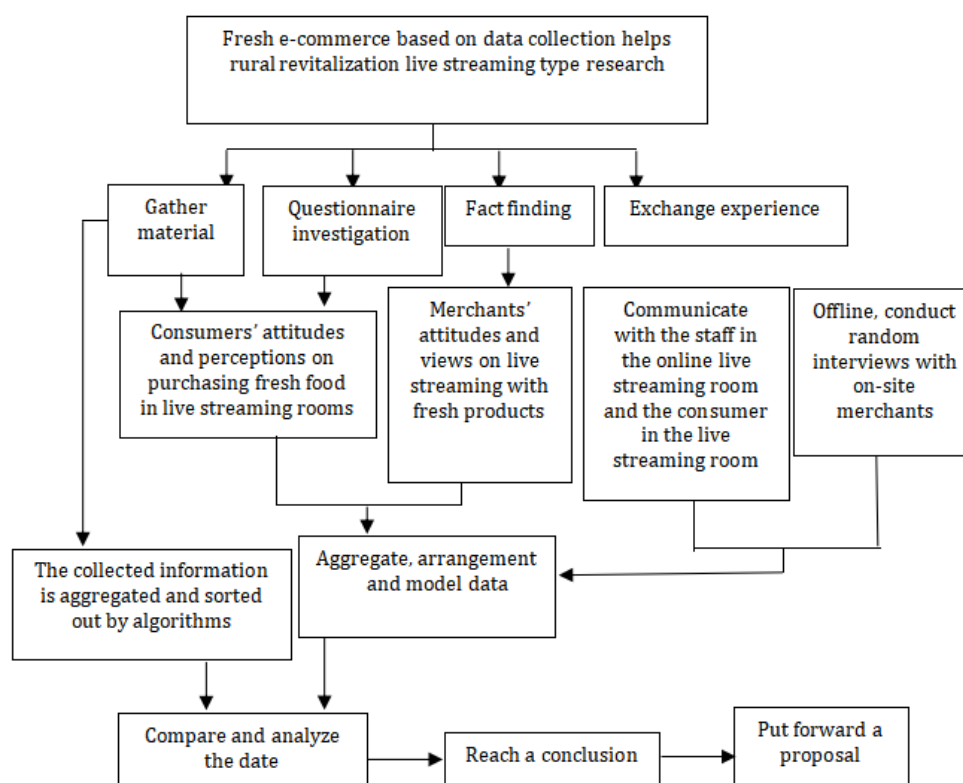
Figure 1 Flow chart of project research ideas

(1) Data collection. This article queries information through Baidu Encyclopedia, checks relevant journals and papers and other academic materials on authoritative websites such as CNKI, and simply grasps the status quo, policies, disadvantages, and development direction of Douyin platform. Hope to get a preliminary understanding through the preliminary data collection and grasp the situation of fresh e-commerce products.

(2) Questionnaire survey. In this project, the questionnaire was distributed to teachers in Wuhan, college students and other groups, as well as randomly distributed in major supermarkets and markets. The questionnaire survey includes "the number of ages watching live online fresh shopping, types of products, views of after-sales service" and other contents. We collected total 496 questionnaires.

(3) Exchange and interview. We divided steps into online and offline, randomly enter the broadcast room of fresh agricultural products sales, watch its live streaming interaction, and communicate online with live streaming staff and consumers online; offline, select large supermarkets with more people for random interview. Similar data integrated and processed, and the data preliminarily improved according to their own professional expertise.

(4) Field research. Go to the fresh market for field investigation, and have a discussion and exchange with offline merchants, to understand the merchants' views on fresh e-commerce and its live streaming.

2.3 Take data collection as a technical means

The main steps of using data collection technology include target determination, establishing data collection library, data collection by using appropriate algorithms, model detection and other processes. By mining and integrating the data of the anchors selling fresh products, we can not only understand the basic trend of the hot push trend and the sales trend in the live streaming room, but also analyze and predict the audience of the live streaming. At the same time, the K-means algorithm in the clustering algorithm is used to mine the data records (Figure 2 K-means algorithm mining)[3], to timely subdivide and classify the most effective analysis results.
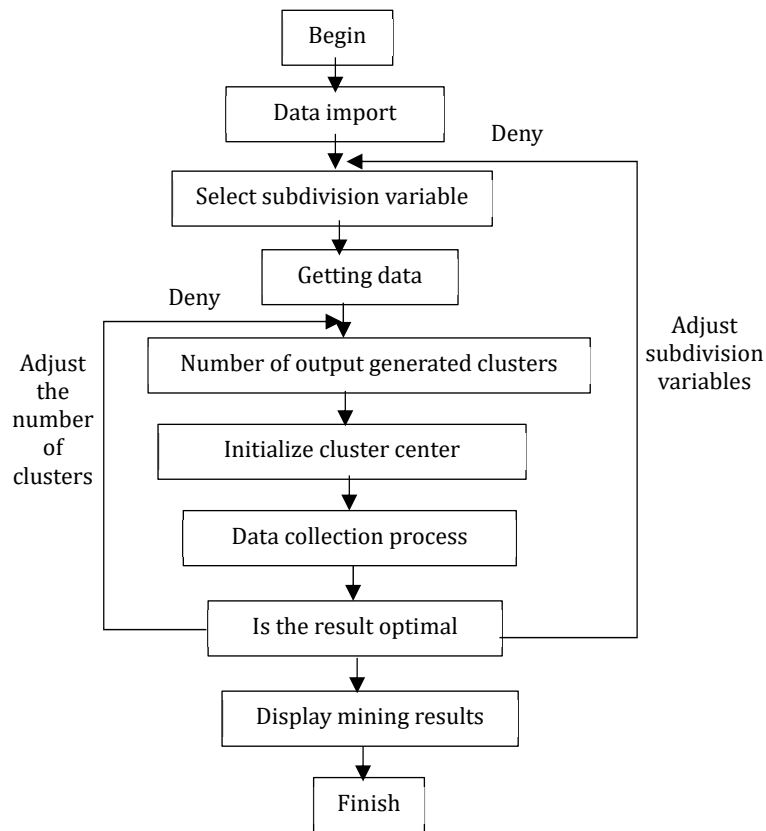
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Figure 2 Schematic diagram of data collection by the K-means algorithm

2.4 Take data collection as a technical means

The data analysis is mainly composed of two parts: data collection in the existing "Cicada Mother Data Network" and data summarized in 26 days through questionnaires, exchange interviews, etc. In the existing data, through the following figure shown in the four parts from left to right in turn arranged down from heavy to light, first from the live streaming sales in turn, in the case of live sales ranking is not much difference, if the number of views ranked larger that is, the overall ranking before the examination, thus examining the conversion rate and video sales in turn, this article only examines the data situation based on live streaming with goods, video sales are less or none, so "video sales" account for a relatively small proportion, ignored, including daily data transformation, After obtaining 26 days of data, the highest and lowest scores are removed through the ranking, the average score is taken and compared with the "most recent January data" summarized in the data network for comparative analysis, and the optimal value is taken; In the data obtained from the 26-day survey, through the recorded questionnaires and interviews, the ranking of the most purchased products in the live streaming room, the factors that most attract consumers to buy products, the number of live streaming and the

viewing time period were arranged[2]. Finally, the data of the two methods are summarized and analyzed, and the process shown in Figure 3 is obtained.
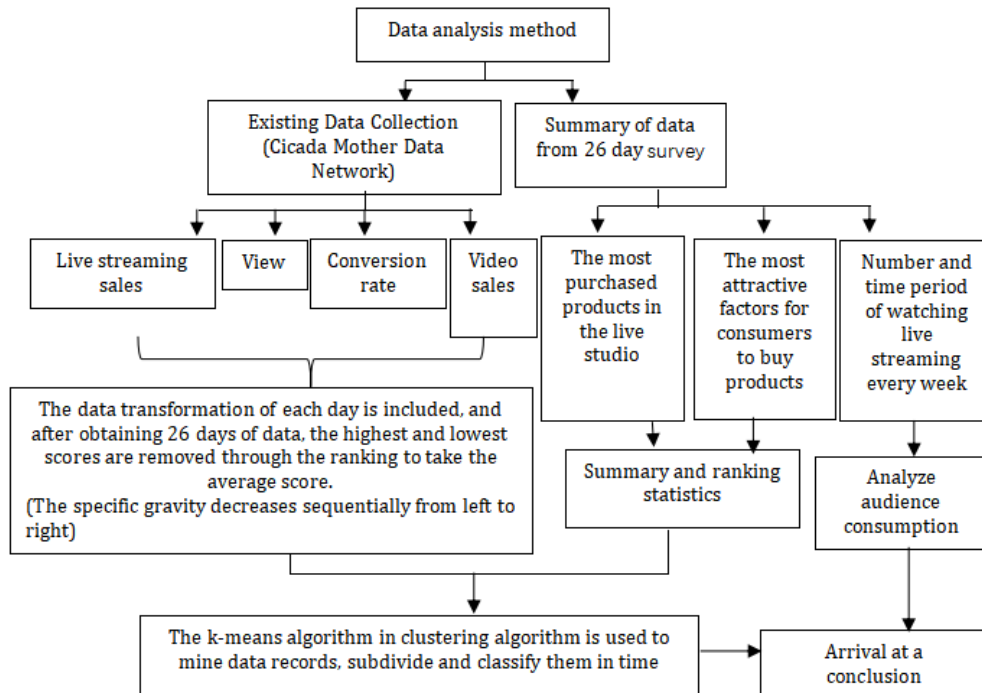

Figure 3 Schematic diagram of data analysis method

3DATA ANALYSIS AND RESEARCH

3.1 Summary of the comprehensive ranking of fresh agriculture products, with live streaming goods sale

This article integrates the data collected for 26 days and calculated and ranked, and obtains the following conclusions, The following data comes from the "Cicada Mother Data Network" [4]and the summary of the survey. The ranking situation comprehensively obtained through the live streaming sales volume, video sales volume, product reading volume and conversion rate respectively (because the anchors collected in this article are mostly prefer live streaming with goods, so the video sales volume ignored).

Table 1 Summary of the comprehensive situation of fresh products mainly on live streaming with goods (top 8)

Sort	Commodity	Live sales	Page view	Conversion Rate
1	Fresh mix package	2.5w	31.1w	10.08%
2	North red shellfish	3w	13.8w	21.6%
3	Seafood gift package	2.5w	13.5w	13.3%
4	Fresh yellow croaker	2w	8.6w	23.71%
5	Raw fresh yellow clam meat	2w	9.5w	20.6%
6	Hainan coconut chicken soup	1.9w	28.8w	6.78%
7	Angus barbecue	1.6w	10.2w	16.23%
8	Lobster tail	1.6w	8.7w	18.4%

According to the ranking results in Table 1, we can observe the importance of the views. The view volume defines the desire and direction of consumers to consume, and the conversion rate of the store is also more affected by it. Paying attention to consumer views is also equivalent to looking at the big direction of the market. However, from the individual data in the figure above, we can see that even if products have a high view, the transformation effect is still not good. This aspect is to wait for the large direction to determine, through various novel promotional activities, quality services and exquisite store decoration, so as to improve the conversion rate of goods. Thus, view volume is the basic condition of product conversion rate, but not a necessary condition for increased sales.

3.2 Key word situation ranking

The keyword ranking ranked the median of the 26 days by calculating the top one hundred keyword ranking of the daily comprehensive ranking and their frequency (the different rankings of the same product on the same day).

Table 2 Keyword Status (Top 5)

Ranking	Keyword	Frequency
1	fresh	0.56
2	Lianyungang delivery	0.18
3	Fresh gift package	0.16
4	Yang uncle recommended	0.12
5	North red shellfish	0.1

According to the Table 2 above，it is not difficult to find the following conclusions:

(1) There is no long term to pile up the product naming of live fresh products with goods. Therefore, first of all, the key word "fresh" is particularly important, it accounts for more than half, the business can be named, such as certain fresh, [fresh] certain products.

(2) Shipping by "Lianyungang", we can think carefully, people pay more attention to the origin of fresh seafood products, that is, the familiar "rational sign", such as coconut chicken, you will think of Hainan Wenchang, lobster, the first think is Qianjiang, seafood, we will consider the coastal port city will be better. Like that, which is why food brands want to give them a geographical indication. Businesses can take advantage of this when naming and use their characteristic "label" in place.

(3) About the "gift box category" products, it is also an inherent thinking. For consumers pursue product diversification at the same time and ensure the economic benefits, the word "gift box" can associate with discount, cheap, plus stronger incentives in the studio, such products may be more loved by those middle-aged groups, want to ensure quality and the pursuit of affordable psychology, gift package is the most appropriate.

(4) The influence of the "celebrity effect" factor can be seen in the fourth key words. In such fresh products, the customer group is inclined to middle-aged groups, and the general star recommendation does not have great advantages in such products, like "Uncle Yang comes" such a down-to-earth I P can be closer to the main consumers. At the same time, it can also be related video or related live streaming on the same type of IP, so that the traffic will be more efficient.

These integrated keyword data in the background can better let merchants understand the trend of consumer demand, and such keywords can increase the click rate of goods and improve the view volume of goods. To attract more traffic, you must get close to consumers and understand the "traffic needs" they need[5].

3.3 Douyin platform load timing characteristics

This article calculates the trill platform of fresh E-commerce from January 8,2022 to January 14,2022, a total of seven days studio audience, fresh products started earlier, some rural anchor in order to attract fans will live a day, but many consumers because of work will only watch live after work, so 17-18 will have an anchor, in the time period studio number will improve.

The statistics are shown in Table 3.The average daily sales of fresh products is about 2500 yuan, about 20000 views, conversion rate is about 11%; its average monthly sales is about 35000 yuan, about 300000 views, conversion rate is about 10%. It was observed that the audience of Friday to Sunday generally increased significantly during the week; but in the monthly effect, we observed a significant increase in the two days of each week. We learned before some research and psychological research shows that there is Wednesday "online shopping addiction", but now with the progress of technology and logistics, many products, especially fresh products in the second day of the order can receive products, just as we now investigate the data, whether there will be subsequent "Friday online shopping addiction" or "Saturday online shopping addiction"? These are unknown, and they are worth studying[5].

Table 3 Effect characteristics within days and within weeks of Douyin Platform

Date	Day effect	Weekly effect
1.8	The studio had the largest audience between 20:20-21	The audience number increased significantly from Friday to Sunday
1.9	From 19-20, the studio had the largest audience	

1.10	At 19:00, the studio had the largest audience
1.11	The studio had the largest audience between 20:20-21
1.12	At 20 PM, the studio had the largest audience
1.13	From 19-20, the studio had the largest audience
1.14	From 21-22 had the largest audience

3.4 Audience analysis

(1) Sex distribution of consumers

Male   63.11%   36.89%   Female

Figure 4 Consumer gender distribution characteristics

(2) Age distribution of consumers
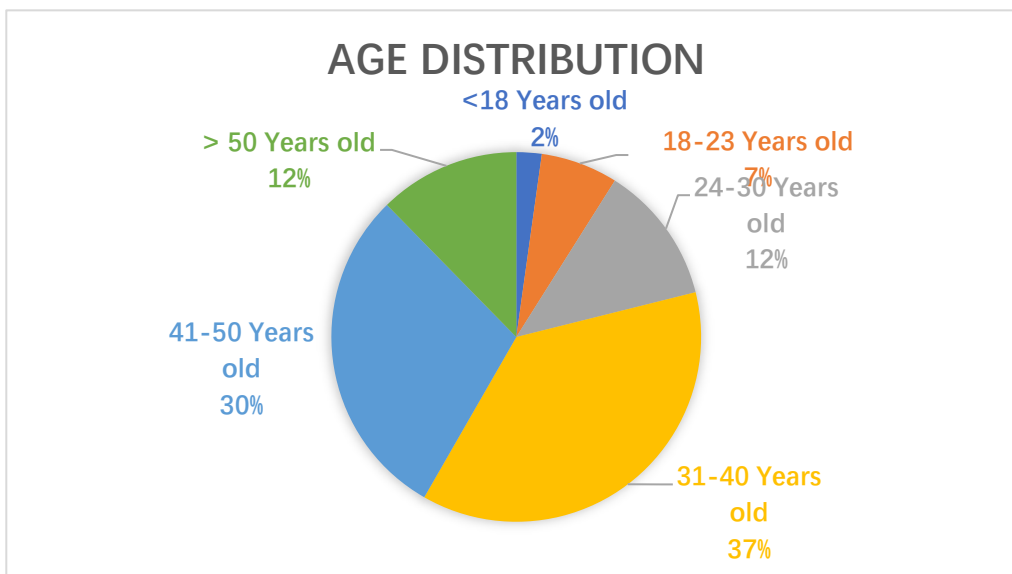
Figure 5 Consumer age distribution characteristics

According to the 496 questionnaires we collected and the consumer portraits summarized by online consumption data, the gender proportion and age distribution of the survey results are shown in Figure 4 and Figure 5. It can be seen that they are mainly male, and most of them are aged 31-50, belonging to the elderly, including those aged 24-30. It can be analyzed that they should mainly be families. The primary standard of fresh products is quality. To be fresh, the

quality must be guaranteed, The demand for quality assurance of the returned questionnaires accounted for 60.94%. About 32% of people are willing to go to the studio to buy fresh products, and most of them are men. On the contrary, women are more willing to spend more money in physical stores. They believe that offline purchases can guarantee quality problems and do not require returns and exchanges.

(3) Regional distribution of consumers

Table 4 Regional Distribution of consumers (Provincial level)

Regional, (Provincial)	Percentage	Regional, (Provincial)	Percentage
Jiangsu	13.11%	Guangdong	10.22%
Henan	8.72%	Shandong	8.42%
Anhui	6.55%	Zhejiang	5.17%
Hebei	4.81%	Sichuan	3.73%
Fujian	3.19%	Jiangxi	3.13%

Table 5 Regional Distribution of Consumers (City Level)

Regional, (City)	Percentage	Regional, (City)	Percentage
Beijing	2.59	Suzhou	2.47%
Shanghai	2%	Dongguan	1.76%
Nankin	1.59%	Chongqing	1.47%
Xuzhou	1.47%	Guangzhou	1.41%
Zheng zhou	1.29%	Qingdao	1.23%

Each background data summarizes the regional distribution of consumers (the collected regional distribution data are shown in Table 4 and Table 5). We can see that it is distributed in coastal areas, and some cities are close to the Yangtze River. The transportation is relatively developed, the fresh food transportation is convenient, the economic strength is strong, and the consumption proportion is relatively high.

According to the above analysis, it is better and convenient for live streaming merchants to accurately locate the corresponding sales group and geographical location of their products.

4 PROBLEMS AND COUNTERMEASURES IN LIVE STREAMING OF FRESH E-COMMERCE

4.1 The type of anchor is too single

At present, most of the rural anchors we see on the platform are "simple style", and the familiar types are as follows:

(1) The "Homesickness" series. Take the emotional route, by describing their own in the countryside is not easy, sell miserably and other ways to attract attention.

(2) Original ecological series. In video, by shooting the beautiful scenery, reflecting the original environment of rural areas, highlighting the geographical advantages of hometown, showing the

"original" of the product; such anchors are also "no added" in the live streaming, they will pile all the products to sell in front of the camera, live chat while doing their own things, like the fruit vendors in the garden to check the juice of the fruit.

(3) Fairy pastoral wind. The most classic image is Li Ziqi, the rural life shot as illusory as a paradise, and the protagonist Li Ziqi is like the fairy general free from the pressure, free to live in this paradise, live out what everyone wants.

The above and three types are the pure rural anchors that we know, and most people except for the third form, the rest may not have heard of. This is also the disadvantage of the current rural anchors: too single, not to be famous. Most the daily agricultural products purchased by many people come from the processed agricultural products sold by the big brand head IP[4]. However, the local live rural fresh agricultural products do not have push traffic, and they do not know how to improve the traffic.

In such a case, the rural anchors who want to develop fresh E-commerce business live streaming should first determine their own target user group, and then study the needs of the target users to locate their own "people", which is more targeted.

4.2 After-sales service is not perfect

For fresh products, because the Cold-chain transportation has not reached a high level yet, food quality problems are inevitable, but the rural anchors are different from the well-known IP with a special team operation. In terms of after-sales management, there is no way to deal with it properly, or even delay, which will very affect the evaluation of products, especially fresh products, what customers value most is quality clearance. User comments in online sales is the key factor in production and sales.

Therefore, fresh e-commerce anchors in the same region can form an after-sales alliance system, unified reply, timely delivery, control evaluation for poor product quality, etc., to eliminate the impact of bad reviews but also form "interaction", multiple fans to maintain each other, and even drive the local reputation.

4.3 Content homogenization is serious

In the live streaming of fresh products, due to the business mode, operation mode and consumption mode are much the same, resulting in serious content homogenization, no bright spots and breakthrough points, unable to grasp consumers for a long time[6].

For example, in the traditional live streaming marketing strategy, businesses can promote different marketing methods for people of different ages. For young groups, traffic videos can be suitable and favorite for their age. According to the seventh data of the national census, the ratio of men and women is unbalanced, which promotes the development trend of the single economy in the next few years, so fresh products can be mainly food, can also launch happy clothes, and can also enjoy happiness together in the case of friends gathering. As today's young people pursue the trend strongly, We can create web celebrity products through the new media matrix, At the same time, you can add a knowledge quiz reward game to the outer packaging of the product, Increase the interaction between products and customers, Live streaming can also do the "open the blind box" series of gameplay, In general, it is to grasp the "novel, unique" several characteristics; For the middle-aged groups, They belong to the pillar of a large family,

There are old, There are small ones below, So most of them are looking for products that are heavy in weight, cheap and cost-effective, This time s a home suit collection, Not only to meet the needs and attention of middle-aged people for nutrition, It also satisfies their fine character of thrift, Clean, hygienic, healthy features can be focused on the product packaging sold to them, For the middle-aged groups, The original ecological type of anchors can give full play to their own advantages; In the elderly population, The elderly pay attention to the concept of health preservation, So the product can be written on the bag and on the box effect, And offer different types of efficacy, Highlight the fresh and original ecological characteristics of fresh products, And you can give away recipes for different dishes, Each flavor offers a different type of dish, Older people have time to try, This greatly promotes the use of the elderly, here, The studio should be in the name of "fresh, no added, pure natural, health" and so on.

To sum up, other aspects of the pattern can also analyze according to this basis.

5CONCLUSION

In short, the fresh live streaming of e-commerce is gradually changing people's life and consumption habits. If online shopping is the first change, then streaming live e-commerce is the second. Through the analysis of the basic data of the live streaming industry of agricultural products, this paper provides a theoretical basis for the live streaming development of rural industrial parks and individual agricultural product merchants. In the next step, we will go deep into the countryside and further deepen it through practice, so as to formulate more detailed practical reference value for it. In order to "steadily combine theory with practice" in this field, we need to light up a new path of "continuous development" of e-commerce.

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