Analysis of Critical Factors Affecting the Sales of Live Broadcast with Goods on Short Video Platform

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Abstract: With the rise of social media and the change in consumers' purchasing methods, the e-commerce live delivery industry has developed rapidly, and live sales have hit record highs. The key influencing factors behind it are worth exploring. This industry has gradually become popular, but it may also prompt the public to have excessively optimistic expectations for it. Therefore, through questionnaire survey, this paper widely disseminated and recycled questionnaire data on social media and analyzed it to explore the public's views on the industry. In addition, through platform data collection and case analysis, the key factors affecting live broadcast sales are explored. It is found that the public's understanding of the industry has limitations and good imagination. The current industry situation shows that there may be better choices for a star to transform into a blogger with goods. Online celebrity anchors focusing on bringing goods on platforms such as TikTok are more suitable to give full play to the advantages of bringing goods. There is an apparent positive correlation between the total sales of anchors and the number of fans. A positive correlation exists between the average online number and the total sales. There is a positive correlation between the number of fans and the peak number of online people per game; A medium-sized online peak can gain a larger market share in terms of sales.

Keywords: business analysis, e-commerce live broadcast with goods, business analysis of short video platform, public opinion, social media

1. Introduction

Nowadays, live shopping through e-commerce has become one of the main purchase methods of consumption. Webcast shopping has the characteristics of solid interactivity, accurate delivery, diversified content, convenience, and rapidity, which reduces the time cost for users to obtain relevant information, dramatically improves the shopping efficiency of users, and gives users a better experience [1]. Starting in 2020, the first batch of online celebrities began to try to live broadcast with goods on short video platforms such as TikTok and achieved excellent sales performance. Since then, major online platforms, all kinds of stars, and all kinds of e-commerce and offline businesses have started live e-commerce broadcasts with goods mode. Through the "live e-commerce" sales model, various businesses interpret the original products in a content-based way so that users can quickly understand the basic situation of product value and quality and quickly realize the rapid circulation of sellers' goods while taking care of buyers' demand for three-dimensional feelings of products [2]. The scale of e-commerce live broadcasts has expanded rapidly. According to the 47th Statistical

Report on the Development of China's Internet published by China Internet Network Information Center (CNNIC), the number of users of live webcasts in China increased by 57.03 million from March to December 2020, reaching 617 million, accounting for 62.4% of all network users. Among them, the number of users with live broadcast accounts for more than half of the scale, reaching 388 million, an increase of 123 million compared with March 2020, accounting for 39.2% of all network users. The transaction volume of live e-commerce from January to June 2020 was as high as 327.4 billion yuan, a year-on-year increase of 62.5%. This shows that the e-commerce live broadcast has developed rapidly, and the market scale has increased significantly [3]. With the time coming to 2023, e-commerce live broadcast rooms with goods have created one sales record after another and gained massive media exposure and public attention. In recent years, many literature papers have focused on live broadcast e-commerce. However, most of them analyze the commercial value, current situation, and development trend of the whole industry and rarely discuss the key factors affecting commodity sales and the views of various social groups on the industry. With live e-commerce's normalization, the industry has penetrated all aspects of public life, from mature industries to emerging blue ocean industries, and has joined the live e-commerce industry. By 2020, many industries engaged in education, finance, automobile, medical care, IT Internet, media, and real estate joined the large army of live e-commerce services. In addition, the online platform has exposed the sales of various large-scale live broadcast rooms, and e-commerce live broadcast has become a profitable industry in the eyes of the public.

More and more people from all walks of life choose to try to contact and join this industry. At the same time, however, the influx of many social groups has also brought a lot of hidden dangers to the development of the industry. Because the live broadcast industry does not need special conditions, the entry threshold is low, and even a mobile phone is needed to start broadcasting immediately. In addition, the network user base on the Internet is enormous, market supervision makes it difficult to reach the designated position, and the anchor's quality and education level are different. Under the rendering of the live broadcast atmosphere, consumers are highly prone to impulsive consumption and buy back many goods that are not needed or even of poor quality, resulting in a return rate [4]. The interaction between the anchor and consumers in the live broadcast room is also significant. The anchor's understanding of the product and personal charm will also affect the purchase conversion rate of consumers to a great extent, thus affecting the sales data of the whole live broadcast [5]. The media and the public usually pay attention to the income and influence of those head anchors, thus ignoring the key factors affecting their sales, forgetting to think: 1. Can those head anchors with huge fan bases and exposure represent the current situation of this industry anchor? 2. Does the public's view and understanding of the industry conform to the current situation of the industry? 3. Can normal people achieve successful sales with a fan base and influence? 4. What are the key factors that affect the sales of a live broadcast room? 5. How do people treat the industry's stereotype as the public correctly and objectively? The research and discussion on these issues are significant for the industry to meet public cognition, development conditions, and success factors.

The profit mode of the anchor with e-commerce goods is not commercial promotion, and there is a perfect business measurement index system behind them. After each live broadcast with goods, relevant data and information will be counted, including but not limited to the number of viewers, sales volume, word-of-mouth with goods, order volume, and often the sales situation of the anchor with goods in various categories [6]. Most anchors with goods may have only a few thousand or no fans to support them. With the increasing competitive pressure in the industry, e-commerce live broadcast anchors with goods have begun to develop into a more professional and diversified profession, and anchors have also noticed the critical influence of "people," "goods," and "number of live broadcasts with goods and live broadcast time" on sales [7]. The e-commerce live broadcast industry not only carries anchors and talents but also needs more professionals related to the living

broadcast, including but not limited to planning, operation, and after-sales service. The composition of a live broadcast is not only as simple as an anchor but also has a massive team behind it. In a word, some colleges and universities are aiming at the demand and prospect of talent in this industry and have started to open related professional colleges [8].

There are only a few successful head anchors, and the media and the public are usually more concerned about the income and influence of head anchors. However, these successful cases do not represent the general situation of the entire anchor group. The effect of hiring stars to bring goods is not satisfactory, and the personal value is often far greater than the value of the goods [9]. Network celebrity anchors focusing on bringing goods on platforms such as TikTok are more suitable for giving full play to the advantages of bringing goods and achieving better commercial results by cooperating with stars. Therefore, merchants should also select the appropriate anchor with goods according to their product characteristics, publicize according to their product characteristics, and enhance consumers' willingness to buy. At the same time, in addition to answering the barrage, we can arrange interactive forms such as a lottery according to the actual situation in the live broadcast room to enhance the audience's stickiness and maintain the number of online viewers [10]. The number of fans and the peak number of people in each game will affect sales, and they are all positively related. That is, the greater the number of fans or the higher the peak number of fans in each game, the higher the total live broadcast sales, the higher the number of fans, and the higher the peak number of fans in each game, indicating that the total sales are directly related to the number of fans. Stars and online celebrities have high popularity and influence, which can attract the attention of many fans. However, celebrities and online celebrities may face challenges when they transform into bloggers with goods. They may lack relevant experience and professional knowledge, and the fans of stars are more extensive, so it is not easy to meet the needs of specific products or brands.

Based on the analysis of the current situation and development of the whole industry of live broadcast e-commerce, this paper makes a more detailed analysis from two aspects: the public's views on the industry and the key factors affecting the sales volume of live broadcast rooms, and try to find out the actual industry situation and the living space and conditions of anchors through the data collection and analysis of specific cases and sort out the key factors affecting the sales volume. This paper adopts the form of a questionnaire survey to solicit public opinions: The questionnaire set up four sections: educational background, work income and characteristics, understanding of the live broadcast e-commerce industry and how to develop it, and views on the transformation of online celebrities. To analyze key influencing factors, four representative categories, namely, food, beauty, digital, and women's clothing, were selected by classifying different categories of goods. Twenty anchors with different numbers of fans were selected from each category to make statistics and comparative analyses of their live broadcast data in the past seven days. Ten online celebrity stars with a fan base are selected to count their live sales data and then compared with the sales data so that the single-game delivery time of the platform head anchor is as consistent as possible with that of the online celebrity stars. The research found that although the public generally thinks that the anchor with goods is very profitable, most anchors are facing a difficult living situation, which is different from other online celebrities on the Internet.

This paper deeply analyzes the key factors that affect the sales of e-commerce live broadcast goods. Through the analysis of questionnaire data, it is found that there is a particular realistic gap between the e-commerce live broadcast goods industry and the public, which has a specific warning effect on people who unthinkingly follow the transformation trend. Finally, the case analysis expounds on the industry's current situation, and even if there is a transformation of the fan base, it may need to achieve better results.

2.   Methods

This paper used a questionnaire survey to collect people from all walks of life's views, understanding, and attitudes towards the cross-industry transformation of e-commerce delivery. This questionnaire is designed from the following aspects: the respondents' education background, the industry they are engaged in, their income, whether they are satisfied with the income level, their work characteristics, their understanding of the industry of live broadcast, what they think is the development of this industry, what are the critical factors for the success of live broadcast, and their views on the transformation of online celebrity stars to bring goods, and spread it in society through major social platforms. Finally, the questionnaire was collected, and the data were statistically analyzed. Secondly, through the platform data collection method, from food, beauty, and digital. Select 20 anchors from each of the four categories of women's wear, totaling 80 anchors with different fans, and collect and sort out their live broadcast sales data for nearly seven days to analyze the collected data and explore the current situation of the live broadcast industry and the factors affecting sales. Finally, through specific case analysis, ten online celebrities and stars with a fan base who have transformed live broadcasts with goods are selected. Their single live broadcast with goods data is compared with those of the head anchor with goods on the TikTok platform (in the case of similar delivery time) to analyze whether their delivery situation is ideal and whether the transformation is successful and smooth.

3.   Experiment Results and Analysis

3.1.   Questionnaire Data Results and Analysis

At present, a total of 100 valid questionnaires have been collected, of which 55% are undergraduates, 12% are specialists, 7% are doctors, 5% are masters, and 21% are other academic qualifications covering services, education, catering, students, catering, freelancing and other industries.

Through the questionnaire information, we can find that income below 3,000 accounts for 27%, 3,000-5,000 accounts for 19%, 5,000-8,000 accounts for 9%, 8,000-10,000 accounts for 8%, and other income levels account for 37%, among which 69% people express dissatisfaction with their current income level.

(1). Among them, 84% of the respondents said that their work has the characteristics of fixed working hours, fixed workplace, and low freedom of work.

(2) 26% and 25% of the people said they knew and did not know about the live delivery industry, and nearly half said they knew a little.

(3). More than half (61%) of the respondents think that the live broadcast of online celebrity stars is a good choice.

(4).83% of the respondents think that the most important thing for a successful anchor with goods is good eloquence, followed by a fan base (82%), significant influence (80%), good luck (65%), being able to bear hardships (60%) and others (16%).

(5) Want to have higher income is the main reason for respondents to consider live broadcast with goods, accounting for 63%, followed by relative freedom (50%), low threshold (49%), dissatisfaction with current income (44%), the possibility of getting rich (44%), significant social employment pressure (41%) and low cost (36%).

3.2. Platform Data Collection Results and Analysis

Table1: Fan volume VS total sales.

Count item: total sales		Total sales					
Fun quantity	Goods category	<1K	1-10K	10K-1M	1M-10M	>10M	Grand total
>10M	Food					1	1
	Beauty cosmetics				1		1
1M-10M	Food				1	1	2
	Beauty cosmetics				1	1	2
	Womenswear			2	3		5
	Digital					3	3
500K -1M	Food				1		1
	Womenswear			3			3
	Digital			1			1
100 K-500K	Food	3		6	1		10
	Beauty cosmetics			4	1		5
	Womenswear		3	9			12
	Digital	1		1			2
50K-100K	Food	1	2	1			4
	Beauty cosmetics		2	2			4
	Digital	1		2			3
<50K	Food	1	1				2
	Beauty cosmetics	2	3	3			8
	Digital	2	5	4			11
Grand total		11	16	38	9	6	80

As shown in Table 1:

(1) When the total sales exceed 10 million, all anchors have more than 1 million fans. It shows that high sales are closely related to the huge fan base.

(2) About 78% of the anchors, whose sales range from 1 million to 10 million, have more than 1 million fans, while the other 22% have between 100,000 and 500,000 fans. It shows that even in the higher sales range, anchors with many fans still occupy an absolute advantage.

(3) Among the anchors with sales in the range of 10,000 to 1 million, more than 50% of the orders come from anchors with fans between 100,000 and 500,000. This means that even if the number of fans is not particularly large, it can achieve considerable sales to a certain extent.

(4) The remaining orders are evenly distributed among anchors with over 10 million fans and between 100,000 and 500,000 fans. Explain that these anchors are relatively balanced in their contribution to sales.

(5) The total sales of less than 10,000 are all distributed among the anchors, with fans between 0 and 500,000. It shows that the increase of fans is significant to the growth of total sales, and this rule has been confirmed in any category.
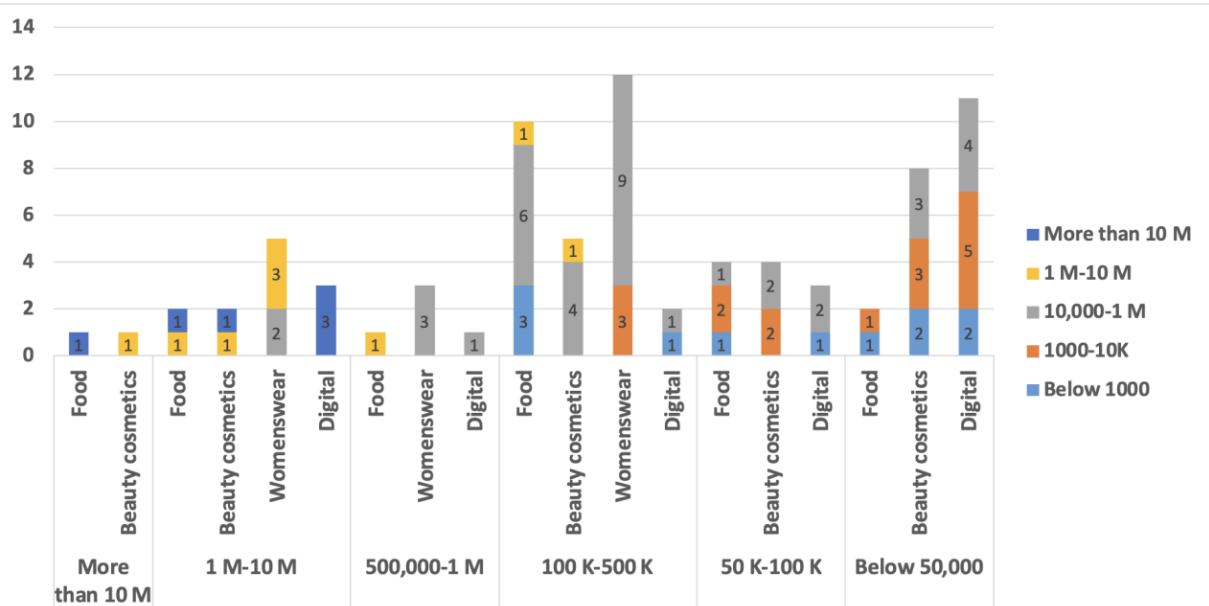

Figure 1: Bar chart produced by the number of fans and total sales.

As shown in Figure 1, the bar chart also clearly shows that most of the total sales of more than 1 million are concentrated in the anchors with more than 1 million fans. The fewer anchor fans, the more low-value sales.

As shown in Table 2:

(1) Among the anchors whose average online audience is less than 1,000, more than 90% of the anchors have less than 500,000 fans. This means that most anchors have a relatively small fan base;

(2) 80% of the live broadcasts have less than 1,000 online users. This shows that the number of viewers of most live broadcasts is relatively small;

(3) Among the remaining 20% of live broadcasts, with a peak of more than 1,000 people, the proportion of fans exceeding 1 million reached 69%. This shows that although some anchors have a high peak online number, their fans are correspondingly large;

Besides, the peak number of online people in most live broadcasts is small, and only a few specific cases will have an unusually high peak. The data does not present a normal distribution but a right-biased distribution. This means that most data points are concentrated on small values, while very few show very high peaks. Therefore, the mode (the value with the highest frequency) is less than the median (the value in the middle after sorting the data), and the mean value is affected by these extremely individual peak values.

Table 2: The amount of silk powder VS the peak value of the number of people present.

Counting item: Peak number of online people per field		Peak number of online people per game				
Fun quantity	With goods category	<100	100-1k	1-10K	10k-50k	Grand total
>10M	Food				1	1
	Beauty cosmetics			1		1
1M-10M	Food				2	2
	Beauty cosmetics				2	2
	Womenswear		2	3		5
	Digital		1	2		3
500K -1M	Food	1				1
	Womenswear		1	2		3
	Digital	1				1
100 K-500K	Food	8	1		1	10
	Beauty cosmetics	1	2	1	1	5
	Womenswear	7	5			12
	Digital	1	1			2
50K-100K	Food	3	1			4
	Beauty cosmetics	3	1			4
	Digital		3			3
<50K	Food	2				2
	Beauty cosmetics	8				8
	Digital	9	2			11
Grand total		44	20	9	7	80

As shown in Table 3:

(1) When the average online number of people on the spot is below 100, 98% of the total sales are below 1 million. This means that most live broadcasts with a low average online number contribute relatively little to sales.

(2) The distribution of total sales has changed obviously when the average number of online people on the spot exceeds 10,000. About 69% of the total sales are concentrated in the range of 10,000 to 10 million, while 21% exceed 10 million yuan. This shows that the live broadcast with a high number of online users is more prominent in terms of sales.

The total sales of 31,000 to 1 million yuan accounted for the highest proportion, about 48%. This means that the medium-sized online peak can gain a larger market share in terms of sales.

Table 3: Average online number per game VS total sales.

Count item: total sales		Total sales					
Peak number of online people per field	With goods category	<1K	1-10K	10K-1M	1M-10M	>10M	Grand total
10K-50K	Food				2	2	4
	Beauty cosmetics				2	1	3
1k-10k	Beauty cosmetics			1	1		2
	Womenswear			2	3		5
	Digital					2	2
100-1000	Food			2			2
	Beauty cosmetics			3			3
	Womenswear			8			8
	Digital	1		2		1	7
<100	Food	5	3	2	1		14
	Beauty cosmetics	2	5	5			12
	Womenswear		3	4			7
	Digital	3	5	3			11
Grand total		11	16	38	9	6	80

As shown in Figure 2, for women's wear and beauty products, the total sales have an absolute influence on the average online audience peak: high sales (1 million-10 million) all appear in live broadcasts with a peak of more than 1000 people. Due to the product characteristics (very likely high customer unit price), the total sales of digital products also exceeded 10 million in the peak range of 100-1000 people.
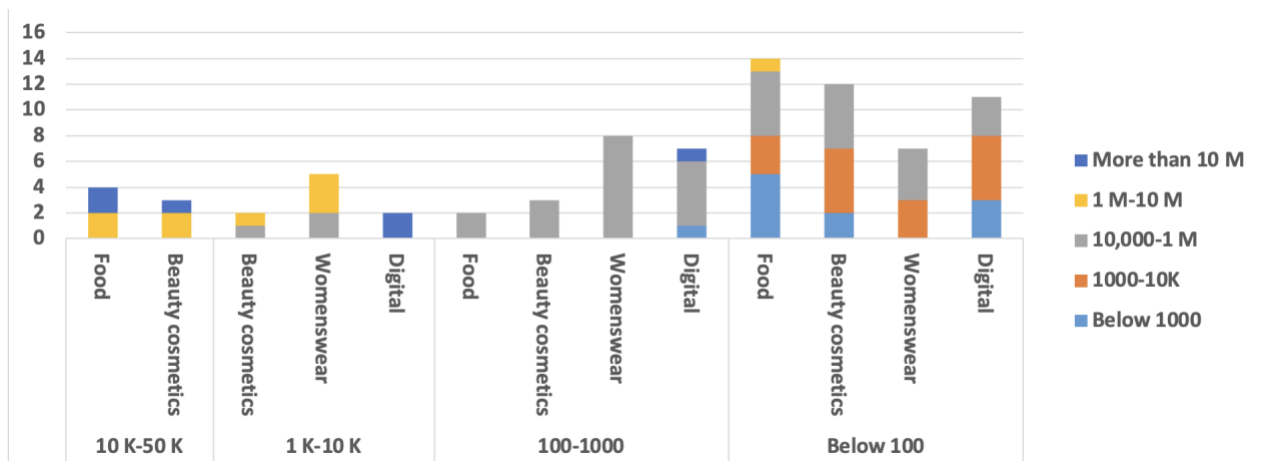

Figure 2: the bar chart made by the average online audience peak and total sales.

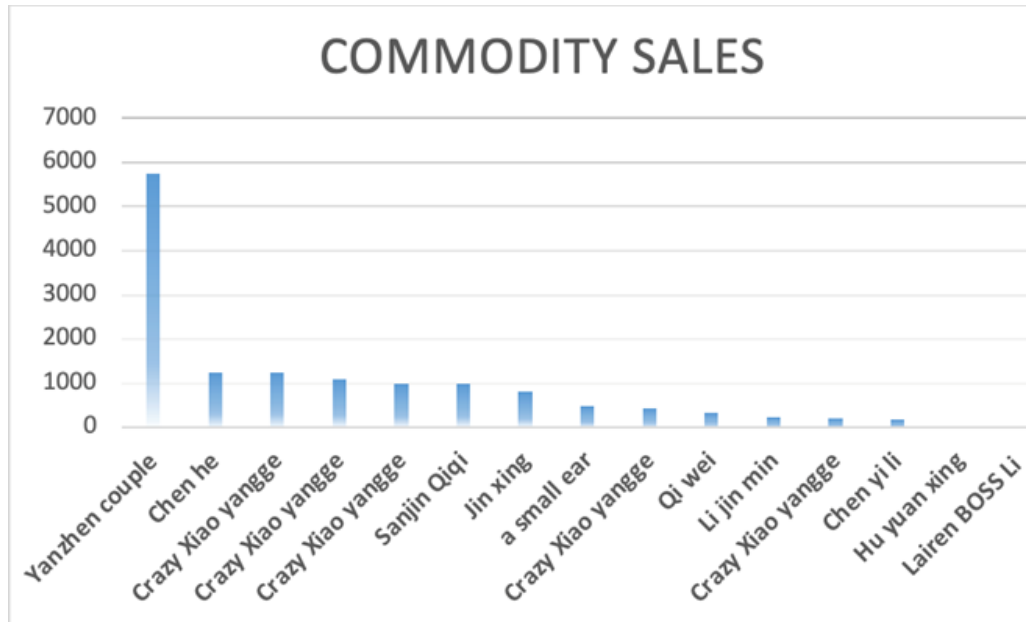### 3.3. Analysis of Typical Sample Survey Data

Figure 3: Sample sales comparison histogram.

As shown in Figure 3, the anchor with the highest sales volume is "Yanzhen Couple," its sales reached 57.5512 million, far exceeding other anchors. The anchor "Crazy Brother Xiao Yang" is very stable in sales, ranking second. Other anchors with higher sales include "Michael Chen," "Three Golden July 7th," and "Venus." The sales of Chen He and Sanjin Qiqi are equal, while the sales of Venus are slightly lower. Sales of anchors such as "One Little Ear" and "Stephy" are relatively low. "Journey to the Lake" and "Idle Li Laoban" have the lowest sales.

As shown in Figure 4, by January 2023, the number of users on TikTok was 809 million. According to statistics, there are about 1.5 million accounts with over 10,000 fans, accounting for 0.19% of the total number of users in TikTok. Among the 1.5 million accounts with over 10,000 fans, 562 accounts with over 10 million fans, accounting for about 0.038%; There are 5,300 accounts with 5-10 million fans, accounting for about 0.2%; There are about 20,000 accounts with 1 million to 5 million fans, accounting for about 1.34%; There are about 70,000 accounts with 100,000-1 million fans, accounting for about 4.69%; There are about 1.4 million accounts with 10,000-100,000 fans, accounting for about 93.73%.As shown in figure 4, by January 2023, the number of users in TikTok was 809 million. According to statistics, there are about 1.5 million accounts with over 10,000 fans, accounting for 0.19% of the total number of users in TikTok. Among the 1.5 million accounts with over 10,000 fans, 562 accounts with over 10 million fans, accounting for about 0.038%; There are 5,300 accounts with 5-10 million fans, accounting for about 0.2%; There are about 20,000 accounts with 1 million to 5 million fans, accounting for about 1.34%; There are about 70,000 accounts with 100,000-1 million fans, accounting for about 4.69%; There are about 1.4 million accounts with 10,000-100,000 fans, accounting for about 93.73%.
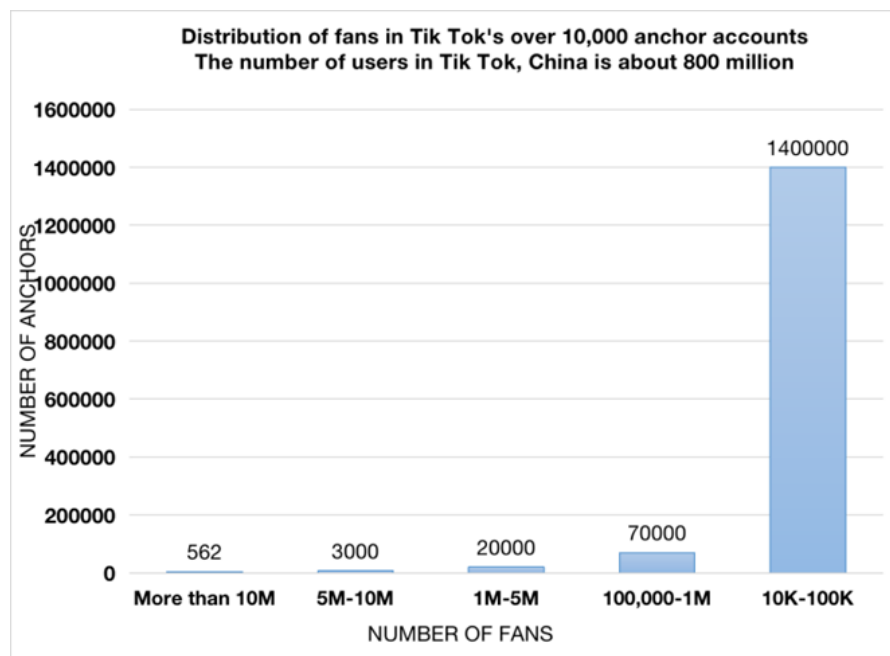
Figure 4: Distribution of accounts with more than 10,000 fans on TikTok.

4. Conclusion

This paper shows that the public's understanding of this industry has limitations and beautiful imagination through the recycled questionnaire. There is an apparent positive correlation between the total sales of anchors and their fans. A positive correlation exists between the number of fans and the peak number of online people per game. Specifically, the more fans there are, the higher the average online number per game will be and the higher the sales will be, which is in line with this law in all categories. There is a positive correlation between the average online number and the total sales. This rule applies to different categories. The current industry situation shows that the live sales data of an online celebrity, a star, or other non-goods-carrying field, transformed into a goods-carrying blogger is not ideal.

To sum up, both the number of fans and the peak number of people per game will affect sales, and they are all positively correlated. That is, the larger the number of fans or the higher the peak number of fans per game, the higher the total live broadcast sales, and the higher the number of fans, the higher the peak number of fans per game, which shows that the total sales are directly related to the number of fans. The head anchor in the live broadcast industry is more likely to get high exposure and sales. Although it is generally believed that anchors with goods are very profitable, most are facing a difficult living situation. They may have only a few thousand or even no fan support. Successful head anchors are only a few examples, and the media and the public are usually more concerned about their income and influence. However, these successful cases do not represent the general situation of the entire anchor group. For most anchors, survival and economic benefits are a huge challenge. The current industry situation shows that there may be better choices for a star to transform into a blogger with goods. TikTok and other platforms focus on the online celebrity anchor with goods, which is more suitable to give full play to its advantages.

References

[1]   Yan, X, et al,. Study on the influence of live broadcast on consumers' buying behavior-with perceived value as the intermediary [J]. Price Theory and Practice, 2021(6):137-140.

[2]   *Zhang Y. Development Status, Problems and Countermeasures of Live Broadcasting and Cargo Delivery Industry in Post-epidemic Period [J]. China Business Theory, 2022(8):4.*

[3]   *Xu M. "Opportunity" or "Trap"? -sustainability analysis of live broadcast with goods under the short video outlet [J]. Art and Technology, 2021,34(9):118-119.*

[4]   *Qiu X. Current situation, existing problems and optimization path of live broadcast [J]. Economic and Technical Cooperation Information, 2021(22):2.*

[5]   *Song Xg, Zhou Jian. Factors affecting consumers' purchase decision under the online live broadcast mode [J]. Science Journal of Normal University, 2022, 42(12):27-33.*

[6]   *Fan D. Self-cultivation of online celebrity with phenomenal live broadcast [J]. Satellite TV and Broadband Multimedia, 2020 (7): 2. Doi: CNKI: Sun: WSDS.0.2020-07-094.*

[7]   *Ye L. Research on the current situation and development optimization of e-commerce live broadcast [J]. Market Weekly Theory Edition, 2021(23):2.*

[8]   *Wang R. With the rise of e-commerce live broadcast, live broadcast talents have become a hot profession [J]. Labor and Social Security World, 2020(22):2.*

[9]   *Lin H. On the fact that a star with goods does not mean a star with goods-taking the phenomenon of sales gap of live broadcast with goods as an example [J]. China Market, 2022(1):2.*

[10]   *Liu F, et al. Study on the influence of live broadcast in online celebrity on consumers' purchase intention and its mechanism [J]. Journal of Management, 2020 (1): 11. Doi: CNKI: Sun: glxb.0.2020-01-011.*