

The Influence of Live Streaming on Consumer Behavior: An Analysis of the 'Blind Box Game of Chance' Mechanism

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Abstract: This paper traces the origins and introduces the factors behind the explosion of the blind box game of chance in live broadcasting. It examines the impact on consumer behavior through psychological, social, and individual differences dimensions. Psychological factors such as scarcity, the framing effect, herd mentality, and the specific live streaming mechanisms of blind box game of chance create addiction closed loop, influencing consumer behavior. Additionally, the paper analyzes and discusses contradictions and ethical dimensions such as transparency, age threshold, product quality, timely gratification versus delayed gratification, and impulse consumption versus rational decision-making. The psychological factors driving instant gratification and impulsive consumption during online live broadcasts stand in stark contrast to the delayed gratification and rational consumption that occur when waiting for the delivery of purchased items. Simultaneously, this paper delves into ethical concerns such as the transparency of live broadcast opportunities, the consumption and protection of minors, and product quality standards.

Keywords: blind box, live streaming, consumer behavior, consumer psychology, Blind box game

1. Introduction

In China, from 2019 to 2026, the gross merchandise volume (GMV) has increased significantly, from 60.8 billion to 1137.7 billion yuan. Concurrently, the proportion of Internet users watching online live broadcasts has risen from 39.2% in 2020 to 54.7% in 2023. As a result, online live selling has gradually captured a larger share of the market in China [1]. In early August 2024, amidst a wide variety of live broadcasts, the "blind box game of chance" gained immense popularity. The trend was initially sparked by Quan Hongchan, the Chinese diving champion at the Paris Olympic Games in France. During the competition, she purchased numerous toy turtles from a live broadcast room. On August 12, she shared pictures of these toy turtles from the "blind box game of chance" live broadcast on Chinese TikTok. The video garnered 11.862 million likes and 3.096 million retweets, making the live broadcast an instant sensation. Live products range from toy turtles and crystal bracelets to hand cream, socks, fruit tea, and more. Regardless of the product being sold, the game mechanics are similar, employing the "small and broad" approach to encourage purchasing multiple items. While the rules may vary, the essence remains consistent. For example, with crystal bracelets, participants spend a portion of their money to buy a specified number of blind box items. If someone buys ten

packages of bracelets, each package will come with a special-colored button. Upon opening the packages, every time a color is repeated, they can open another package of crystal bracelets. The newly opened package will still contain random colored buttons until no color is repeated. Additionally, the same approach can be applied to cards or colored products [2].

2. Analysis of the Influence Mechanism of Blind Box Chance Game Live Broadcasting

2.1. Psychological dimension

First of all, the blind box itself is a unique item with specific psychological factors that directly stimulate consumer purchase decisions. These factors include the scarcity effect, framing effect, and matching effect [3]. In the live broadcast of the blind box game of chance, additional factors enhance psychological influences. They are summarized as follows:

2.1.1. Scarcity

According to commodity theory, scarcity increases the value of any item that can be owned [4]. In the system of live chance games, this includes product scarcity, frequency scarcity, and price deviation. Product scarcity is evident in that most products sold have relatively rare styles, such as the classic toy turtle's various hidden styles. The probability of drawing a hidden style is usually low, leading customers to continue placing orders to collect these rare styles. Frequency scarcity is reflected in the small probability that a customer will receive more opportunities to open blind boxes than initially expected. For example, customers may buy 20 bags of toy turtles and, due to good luck, end up with 60 bags, while others buying the same 20 bags may only receive around 40 bags. In terms of price bias, the assumption of expensiveness mediates the increase in value resulting from scarcity [5]. In live games of chance, most products, including hidden items, are actually very low cost. Since consumers are unaware of these costs, scarcity enhances the perceived price and desirability of these blind boxes. For instance, the most common prices for toy turtles in the live broadcast room are 19.8 yuan for 9 packs, 39.8 yuan for 17 packs, and 99.8 yuan for 45 packs. However, the same product costs only 1 dime RMB in Yiwu, the origin in China, or from Pinduoduo, China's cheapest shopping website. These three principles—product scarcity, frequency scarcity, and price deviation—attract customers to participate in the game.

2.1.2. Framing Effect

Firstly, a sign is usually prominently displayed in the live broadcast room with phrases such as "Order now and get 5 bags free," giving customers the illusion of receiving additional discounts if they choose to buy these products. For example, the original price of 39.9 yuan may open 22 packages, but the store advertises it as 39.9 yuan for 17 packages plus 5 additional packages, which distorts the buyer's perception and judgment. Secondly, the loss aversion aspect of the framing effect is entirely avoided. People value certain benefits more than potential benefits and actively seek to avoid the pain of loss [7]. For a blind box game of chance, participants must receive more than they initially purchased. In the toy turtle game, for instance, the minimum purchase option in all live broadcast rooms is to open 8 blind boxes. Assuming 8 blind boxes are purchased, the game features ten colors of turtles, each with a 10% probability of being drawn. Additionally, there is a chance to make a wish once or even twice before opening the blind box. If the wished-for color is drawn, participants can open another bag. Given the limited number of color types and the high number of draws, the probability of drawing at least one pair of turtles with the same color is approximately 96.37%. The calculation process is as follows: There is a one-tenth probability of winning the wish color with each draw. In addition, all shops ensure that even if a customer is unlucky and does not win the prize, the

host will provide two to five unconditional gifts, almost guaranteeing a 100% probability of additional rewards. Additionally, the following rules apply: Three turtles of the same color can be exchanged for five more packs, four turtles of the same color can be exchanged for five more packs, and clearing all turtles in a nine-square grid allows for drawing five more times. This setup ensures that almost every purchase provides the opportunity to experience the game of chance multiple times.

2.1.3. Addiction Closed Loop

Variable ratio reinforcement strengthens behavior through unpredictable rewards after varying response numbers, fostering consistent and persistent actions [8]. In the game of chance, the phenomenon of variable reinforcement has three characteristics: 1. Unpredictable Reward Frequency: The reward is obtained after an unpredictable number of attempts, making it unclear when it will be eliminated. This could occur after three tries, five tries, or another number. 2. Pause Between Results: There is a pause before the result is achieved. In fact, the game of chance can be viewed as multiple reinforcements. It takes time for consumers to wait for the same color to appear. For instance, during the elimination process, before getting the result, the host first removes items from the blind box and then checks for color matches. 3. A high and stable response rate: When you don't know when you will be rewarded, you will continue to respond. The result of each chance game is based on a certain level of uncertainty. Although this seems to reduce the "uncertainty" because the customer is assured of receiving something, the real reward that drives people to participate in games of chance rather than shopping directly is the anticipation of more "opportunities". Even though the amount of goods received is variable, according to the optimistic bias [9], people tend to believe they have more "opportunities" than others. The definition of "more" is relative to the number of other consumers in the live broadcast room. Therefore, after receiving the result, if an individual does not achieve the desired number of "opportunities," or rewards, variable reinforcement prompts the customer to continue responding, resulting in a lasting action to place an order. Conversely, according to the partial reinforcement [10] involved in variable-ratio schedules in operant conditioning reinforcement schedules, if the customer is very lucky in a purchase and obtains more "opportunities," it strengthens their buying behavior and increases the number of purchases. Therefore, whether it is due to good luck or bad luck, it creates a highly addictive closed loop. This is why many people feel addicted after participating in these shopping games.

2.1.4. Herd Mentality

The following aspects will play a role: 1. Comment Section Influence: In the comment section of the live broadcast room, viewers often post messages such as "want to buy" or "got lucky." 2. Visible Orders: When a customer places an order, the relevant order is displayed on the host's desk, and sometimes the number of orders continues to increase. This visibility makes it easy for new customers entering the live broadcast room to be influenced by the comments of other viewers and the growing number of orders. As a result, their perception and judgment may change, leading them to want to integrate into the group.

2.2. Social Dimension

In the current global economic environment, which is not favorable [12], China's economic growth is also slowing down. This slowdown has led to a decline in the profitability of Chinese enterprises, resulting in a reduced demand for employees and even layoffs in some companies [13]. Consequently, the intensification of employment competition has accelerated the depreciation of academic qualifications, and the increased internal pressure in the workplace has extended working hours. These pressures are significant for both young people and workers in the workplace. Additionally,

since China officially introduced the one-child policy in January 1979 and began to relax it in 2013 [14], the impact of support pressure has affected individuals from the post-80s generation (36-45 years old) to the post-90s and post-00s generations (15-35 years old). The post-80s generation is now the first group to face the pressure of being the sole provider for their elderly parents, which also increases the stress on many working individuals. Therefore, for the blind box game of chance, there are several aspects to consider: First, the meaning: According to the theory of symbolic consumption, people consume the symbolic value behind goods [15]. Even seemingly meaningless items can be given meaning through their use [16]. In games of chance, consumers find social value and identity in items like cheap resin turtles. They can share pictures through online communities and use terms like "ou qi" (very lucky) as a virtual identity tag. Second, the dopamine brought by "gambler's psychology": As mentioned earlier, there is an addiction mechanism that occurs regardless of luck. The brain releases dopamine when it perceives a beneficial stimulus according to the Brain Reward System [17]. This makes games of chance enjoyable for participants. Third, interaction and emotional value: The host creates an "emotional resonance" with the customer. When a customer wins, the host rings a bell and exclaims "you are so lucky" in an infectious tone, arousing the audience's emotions.

2.3. Individual Differences

As time goes on, there are more and more live broadcasts featuring various types of chance games, including not only toy turtles, but also mobile phone shells, key pendants, socks, snacks, eyelashes, collectible figures, and dolls. These diverse products are targeted at potential customers with different needs. When a person becomes accustomed to and enjoys the "game of chance" format, they may search for fixed items they want to buy and continue to participate in purchases through this method.

3. Discussion

3.1. Contradictory Findings

Timely Gratification vs. Delayed Gratification and Impulse Consumption vs. Rational Decision-Making: Games of chance offer short-term and immediate results in the live broadcast room, which, as mentioned earlier, will make customers excited and addicted in the short term. At the same time, according to the concept of sunk costs, when individuals invest money, time, or effort in an action, they tend to invest additional resources to continue the action [18]. As a result, a customer may place multiple orders, possibly even from different shops. However, the process of waiting for delivery after the lottery is lengthy. According to the concept of delay discounting, as the reward becomes more distant, its present value decreases [19]. Therefore, if the consignment of the goods is late, the customer may perceive that the value does not match and request a refund. Even with a faster consignment, transportation time still plays a role, causing customers to reconsider their impulsive purchases or compare the value of the goods. Additionally, due to the characteristics of the game of chance itself—low cost dominated by "emotional value" (the lower the cost, the higher the emotional value can be provided), high profit, and lack of quality certification—Post Purchase Dissonance [20] is more likely to occur after the customer receives the actual product, leading to negative emotions.

3.2. Ethical Dimension

3.2.1. Transparency Issues

Unlike the earlier resin turtle game of chance, many items derived from it are not packed in sealed blind bags. Some can be opened in advance, while others are pasted with different color stickers on one side of the package, with the stickers facing the desktop. When a customer places an order, the

host will open the products that have been arranged accordingly. There may be instances where transparency is compromised; for example, certain items can be eliminated several times in advance. Additionally, at times, the host may place a "fake order," which is their own order, and it will appear extremely lucky, thereby confusing people's judgment and increasing their desire to buy live.

3.2.2. Age Threshold

Minors have a weak ability to resist temptation and are more likely to consume irrationally. There are still many unresolved loopholes in the game of chance. Firstly, cheaper products are relatively easier to attract minors. Secondly, all platforms do not have a face verification mechanism, allowing minors to complete payments using their parents' identity information. Finally, some anchors may use verbal inducements to encourage minors to participate. In this regard, the platform should improve the regulatory system accordingly, and businesses should more strictly adhere to the Law on the Protection of Minors and the Measures for the Management of Live Network Marketing. They should act ethically and prioritize the well-being of minors over immediate profits.

3.2.3. Quality Problems

For live games of chance, the host usually declares "no refund, no exchange" in the live broadcast room. If someone returns the goods after placing an order, they are added to a "blacklist." As a result, the customer will be unable to place orders normally in other live broadcast rooms on the platform, and their printed order will be automatically marked as belonging to a blacklisted person. Establishing such rules makes it difficult to balance the rights and interests of both anchors and consumers. From the standpoint of the anchor, there are indeed many people who place orders maliciously. This can consume the anchor's time, energy, income, and reputation, and the sales and traffic of the anchor's account may be limited due to the platform's mechanism. Conversely, from the consumer's perspective, not all anchors' personalities and the quality of goods can be guaranteed. As mentioned earlier, due to the mechanism of chance games and the lack of quality supervision, product quality cannot be effectively guaranteed, and consumers cannot safeguard their rights and interests by returning goods. Simultaneously, writing the slogan "no refund, no exchange" violates Article 26 of the Consumer Rights and Interests Protection Law of the People's Republic of China, which limits consumer rights [21]. Addressing quality problems remains an issue that needs resolution.

4. Suggestions on Marketing Strategies

Firstly, increase transparency in the operation process. For example, a recent live game similar to a coin pusher machine has made the operation more transparent. Items for sale are placed at the bottom, with three tracks on top, allowing people to place a fixed number of products on the desired track. This type of game is interactive with the audience, and the products themselves are not very expensive, making it a derivative game of the blind box chance game. Secondly, diversify the forms of play. People easily tire of the same format over time. Maintaining the entertainment nature of the games and introducing new forms of play can continue to attract consumers. Thirdly, ensure product quality and improve relevant laws and regulations. Fourthly, cooperate with popular intellectual properties (IP) or create original IP. Combining products with film and television works or hot topics can further enhance the product's value.

5. Conclusion

In conclusion, Psychological and social dimensions, such as the scarcity effect and framing effect generated by the characteristics of blind box chance game live broadcasting, act on consumers with

different individual differences. These factors significantly enhance consumers' purchase and participation in blind box chance game live broadcasting. Given this development, the popularity of this type of live broadcast is likely to increase, but considering the characteristics of blind box games of chance, the low value of commodities, the short-term nature of the addiction mechanism, and the imperfections in platform norms, it is inevitable that this type of live broadcasting will decline in the future. After purchasing, many people have shared their feelings of emptiness, regret, and doubts about the transparency of live broadcasts on Internet platforms once the novelty wears off. However, the fact that blind box games of chance are currently popular on the Internet, combining blind boxes with various psychology-related mechanisms, is an innovation in itself. In the future, there may be even more innovative live broadcasts waiting to be discovered.

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