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The Blind Box Economy: Exploring Consumer Behavior, Marketing Strategies, and Economic Drivers of Its Popularity

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Abstract. This paper investigates consumer behavior toward blind box products, emphasizing psychological drivers such as excitement, anticipation, and uncertainty. It begins by tracing the origins and evolution of blind box marketing, highlighting its widespread adoption across industries due to unique hedonic experiences and emotional engagement. A detailed case study of Pop Mart illustrates how strategic implementation of scarcity, intellectual property collaborations, emotional connectivity via social media, and omni-channel distribution have propelled extraordinary growth and profitability. Employing a discrete choice framework complemented by rigorous statistical analyses—including correlation tests, Chi-square, ANOVA, and logistic regression—on original survey data, this study uncovers significant determinants of consumer spending behaviors. Empirical findings reveal that consumers' desire to complete collections, gender-specific motivations, purchase frequency, and income levels notably influence purchasing decisions and overspending tendencies. Practical marketing recommendations derived from these insights emphasize strategies focused on enhancing collectability, crafting gender-targeted promotional activities, and delivering tailored incentives for frequent and high-intensity collectors. These targeted strategies offer actionable guidance for businesses seeking sustained growth and deeper consumer engagement in the competitive blind box market.

Keywords: Blind box, Consumer behavior, Psychological drivers, Pop Mart, Marketing strategies

1. Introduction

Blind boxes, as a novel sales model, have evolved into a global consumer phenomenon in recent years, triggering widespread popularity. Originating from Japan's Fukubukuro—a marketing strategy designed to clear warehouse inventory at discounted prices—this concept was later adapted into capsule toys and collectibles, laying the foundation for today's blind box economy. Characterized by sealed packaging that conceals all product information, blind boxes transform purchases into a game of probability, where buyers only discover the specific item upon unboxing [1]. Characterized by sealed packaging that conceals all product information, blind boxes transform purchases into a game of probability, where buyers only discover the specific item upon unboxing [1].

In China, early iterations of blind boxes, featuring collectible hero cards bundled with instant noodles, primarily targeted student demographics. Their appeal stemmed from low unit prices,

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diverse character designs, and the challenge of completing sets, which capitalized on the thrill of uncertainty.Over time, shifting consumer preferences and the rise of experiential entertainment elevated blind box marketing into a powerful tool [2].

The blind box model has expanded far beyond toys, now penetrating industries from gaming and cosmetics to snacks and travel. Its fundamental appeal stems from the powerful "surprise factor" - the thrilling anticipation of unboxing anything from rare collectibles to mystery experiences. This psychological mechanism creates an information gap that actively engages consumers' curiosity [3]. Research by Qiu et al [4]. confirms this blend of uncertainty and anticipation enhances purchasing enjoyment even before product revelation. However, this very structure promotes repeated purchases as consumers chase elusive items, potentially leading to compulsive spending behaviors. Through strategic scarcity tactics and emotionally charged unboxing moments, blind boxes maintain strong popularity among youth demographics while driving continuous innovation across global markets.

Compared to regular products, blind boxes offer a unique hedonic benefit. The excitement of surprise, the thrill of chance, and the emotional reaction when opening the box make the experience more fun and engaging. This emotional satisfaction is something traditional products—where buyers know exactly what they're getting—don't offer in the same way. For many people, the joy of the reveal and the hope of getting something special are just as important as the item itself.

This paper investigates consumer behavior toward blind box products, emphasizing psychological drivers such as excitement, anticipation, and uncertainty. Section 1 provides background on the rising popularity of blind boxes and associated consumer psychology. Section 2 presents a case study on Pop Mart, highlighting its successful use of psychological triggers, scarcity strategies, IP collaborations, and omni-channel marketing to enhance consumer engagement. Section 3 introduces a utility-based framework comparing consumer choices between blind boxes and ordinary goods, focusing on excitement, uncertainty, and pricing factors. Section 4 describes the survey-based data collection method and statistical analyses, including correlation tests, Chi-square, ANOVA, and logistic regression. Section 5 reports key empirical findings, identifying significant factors influencing consumer spending and overspending tendencies. Section 6 outlines marketing implications, recommending strategies such as emphasizing collectability, gender-specific campaigns, and targeted promotions. Finally, Section 7 concludes.

2. Case study: the success of Pop Mart

Pop Mart is a leading blind box company in China, widely recognized for its effective implementation of the blind box business model. Founded in 2010, Pop Mart initially specialized in traditional toys and accessories but strategically pivoted toward blind boxes in 2015, capitalizing on the growing popularity of collectible culture. Its flagship "Molly" series, featuring designer vinyl figurines, quickly became a cultural sensation, significantly accelerating the company's growth and culminating in a successful IPO on the Hong Kong Stock Exchange in 2020 [5].

Pop Mart's notable success can be attributed to several key strategic initiatives. First, the company collaborates extensively with renowned artists and secures licenses for popular intellectual properties (IP), continually introducing unique and highly sought-after blind box collections. This strategy maintains consumer interest through continuous innovation. Additionally, by deliberately limiting the production of rare or "hidden" characters, Pop Mart creates scarcity and exclusivity, enhancing the collectible appeal and encouraging repeat purchases.

Another core strategy involves emotional engagement: Pop Mart actively employs social media and encourages user-generated unboxing videos, creating a vibrant community atmosphere and building emotional connections among collectors. Furthermore, Pop Mart operates through an omni-

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channel presence, maintaining both physical retail stores and robust online platforms, significantly expanding its consumer reach and enhancing the sensory and visual appeal of its products.

Financially, Pop Mart has experienced exceptional performance. In 2024, the company's revenue reached RMB 13.04 billion (approximately USD 1.78 billion), marking a 106.9% increase year-over-year, while net profit grew by 185.9%, reaching RMB 3.4 billion [6]. The extraordinary success of its Labubu plush series, which alone generated RMB 2.83 billion due to a sales spike exceeding 1,200%, underscores the company's impressive growth trajectory. Moreover, Pop Mart's aggressive global expansion drove overseas revenue to rise 375% year-over-year, contributing around 39% of total earnings [6]. High-profile celebrity endorsements further amplified its international profile, propelling its stock price nearly 570% higher and increasing its market capitalization to approximately USD 43 billion, surpassing traditional toy industry leaders such as Hasbro and Mattel [5].

Through these innovative and psychologically insightful strategies, Pop Mart has solidified its dominant position in the blind box industry and provided a benchmark for other companies aiming to leverage consumer curiosity, emotional engagement, and collectability to foster sustained growth and customer loyalty.

3. Framework

This section utilizes a discrete choice framework to analyze consumer decision-making between purchasing blind box products and ordinary goods. Consumers are assumed to evaluate products based on factors including price, excitement associated with the purchase, and uncertainty about product contents. The framework captures how psychological attributes—specifically, excitement derived from anticipation and uncertainty related to product reveal—influence consumer utility and ultimately their purchasing decisions. By modeling these choices using a random utility approach and a logistic regression structure, this analysis aims to quantify the relative importance of price and psychological factors in driving consumer preference toward blind boxes versus conventional products.

Assume consumer i can choose between alternative j, where $j \in \{B,O\}$. Where B represents Blind Box product, and O is the ordinary good. Then the utility for consumer i choosing product j would be the following:

$$U_{ij} = \beta_0 + \beta_1 Price_j + \beta_2 X_{1j} + \beta_3 X_{2j} + \epsilon_{ij}$$

$Price_j$ is the price for good j, X_{1j} is the measure of excitement, and X_{2j} is the measure of uncertainty.

For the Blind box product B, the deterministic utility would be:

$$V_{iB} = \beta_0 + \beta_1 Price_B + \beta_2 X_{1B} + \beta_3 X_{2B}$$

Where $Price_B$ is the price of the blind box product, and X_{1B} is the measure of excitement for blind box, and X_{2B} is the measure of uncertainty for blind box.

For the ordinary good O, the deterministic utility is:

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$$V_{iO}=\beta_0+\beta_1 Price_O+\beta_2 X_{1O}+\beta_3 X_{2O}$$

Where $Price_O$ is the price of the ordinary good, and X_{1O} is the measure of excitement for ordinary good, and X_{2B} is the measure of uncertainty for ordinary good.

Consumer i chooses the alternative with the higher overall utility, formally:

Consumer i will choose Blind Box if $U_{iB}\geq U_{iO}$, else choose Ordinary Good.

Specifically,

$$U_{iB}=\beta_0+\beta_1 Price_B+\beta_2 X_{1B}+\beta_3 X_{2B}+\epsilon_{iB}$$

$$U_{iO}=\beta_0+\beta_1 Price_O+\beta_2 X_{1O}+\beta_3 X_{2O}+\epsilon_{iO}$$

$$U_{iB}-U_{iO}=\beta_1(Price_B-Price_O)+\beta_2(X_{1B}-X_{1O})+\beta_3(X_{2B}-X_{2O})+\epsilon_{iB}-\epsilon_{iO}\geq 0$$

The probability of choosing Blind Box B is:

$$P(U_{iB}-U_{iO}>0)=P(\beta_1(Price_B-Price_O)+\beta_2(X_{1B}-X_{1O})+\beta_3(X_{2B}-X_{2O})+\epsilon_{iB}-\epsilon_{iO}\geq 0)$$

Under the logit model, assuming ϵ_{ij} are i.i.d. with a Gumbel distribution.

Then the probability of choose Blind Box B is:

$$P(U_{iB}-U_{iO})=P_{iB}=\frac{\exp(V_{iB})}{\exp(V_{iB})+\exp(V_{iO})}$$

4. Methodology

To explore the factors driving consumer preferences and purchasing behaviors regarding blind box products, this study employed a structured online survey. The survey collected data on participants' purchasing patterns, budget constraints, demographic characteristics, and their attitudes toward blind box consumption. A total of 250 valid responses were gathered and subsequently analyzed using several statistical methods to uncover meaningful insights.

Specifically, Pearson correlation tests were conducted to examine the relationship between the intensity of consumers' desire to complete blind box collections and their spending behavior. Additionally, a Chi-square test was employed to determine whether there was a significant association between gender and spending behaviors, particularly focusing on tendencies to overspend. ANOVA analyses were utilized to assess if consumer purchasing behaviors differed significantly based on demographic segments such as age, income, and purchase frequency. Lastly,

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logistic regression was implemented to predict the likelihood of consumers overspending on blind boxes based on purchase frequency, income levels, and the intensity of their collection desires.

5. Results

Table 1. Correlation between desire level and spending behavior

Variables	Correlation Coefficient	P-value
Desire Level vs. Spending Level	0.332	<0.001

According to Table 1, the Pearson correlation coefficient is 0.332, with a highly significant p-value which is smaller than 0.001. This indicates a statistically positive relationship between consumers' desire levels to complete the blind box sets and their spending levels. This suggests that consumers who have stronger desires to collect complete sets are significantly more likely to exceed their budget.

Table 2. Chi-square test of gender vs. spending behavior

Statistic	P-value
6.436	0.040

The Chi-square test result, which is 6.436 with a p-value of 0.040, reveals a statistically significant association between gender and spending behavior. This implies significant differences in spending habits between genders, which reflects variations in purchasing motivations and attitudes toward blind boxes.

Table 3. ANOVA tests on budgets

ANOVA Test	F-value	P-value
Budget by Age Group	0.969	0.439
Budget by Income	0.574	0.633
Budget by Purchase Frequency	1.798	0.133

ANOVA results examining the purchase budget across different demographic and behavioral segments – age group ($F = 0.969$, $p= 0.439$), income ($F=0.574$, $p=0.633$), and purchase frequency ($F= 1.798$, $p=0.133$)- indicate no statistically significant difference among these groups. This lack of significant variation implies that consumer spending of blind box remains relatively consistent, irrespective of age, income, or purchasing frequency.

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Table 4. Logistic regression predicting overspending behavior

Variable	Coefficient	Std. Error	Z-value	P-value
Intercept	0.358	0.566	0.632	0.527
Freq: bought in 6 months	0.599	0.541	1.107	0.268
Freq: once or twice a week	1.429	0.614	2.325	0.020
Freq: more than 3 times a week	0.948	0.573	1.655	0.098
Freq: one to three times a month	1.348	0.552	2.440	0.015
Income (monthly): 5001-8000 yuan	-1.226	0.471	-2.604	0.009
Income (monthly): ＜2000 yuan	-1.641	0.529	-3.102	0.002
Income (monthly): ＞8000 yuan	-0.987	0.460	-2.147	0.032
Desire: not really	-1.090	0.708	-1.539	0.124
Desire: strong but rational	1.336	0.503	2.657	0.008
Desire: extensively strong and willing to collect the set	0.914	0.465	1.963	0.050

Table 4 summarizes the logistic regression analysis, identifying factors significantly influencing the likelihood of consumer overspending on blind boxes. Frequent purchasers, specifically those buying once or twice a week (p=0.020) and those purchasing one to three times a month (p=0.015), exhibited a notably higher propensity to overspend. Conversely, lower-income groups (monthly income below 2000 yuan, p=0.002) were significantly less likely to overspend due to financial limitations. Additionally, consumers expressing a strong but rational desire (p=0.008) and those with an extensively strong desire and willingness to complete collections (p=0.050) were significantly more prone to overspending. These insights underline the critical role of targeted marketing strategies addressing specific consumer segments to optimize engagement and manage consumer spending behaviors effectively.

6. Marketing implications

The findings of this study offer several strategic implications for businesses seeking to optimize their blind box marketing approaches. The significant positive correlation between consumer desire levels and spending behaviors (Table 1) highlights the effectiveness of emphasizing the collectible and completist nature of blind box products. Companies can enhance marketing campaigns by clearly communicating the thrill and emotional rewards of completing collections and by offering incentives or exclusive rewards to dedicated collectors. Providing transparent information regarding the probabilities of obtaining rare items could further enhance consumer trust and appeal to a broader audience.

Furthermore, the significant association between gender and spending behavior (Table 2) underscores the need for gender-tailored marketing strategies. Firms should consider developing targeted promotional materials and product designs aligned with gender-specific preferences, potentially collaborating with influencers or content creators who resonate effectively with distinct demographic segments.

Additionally, the logistic regression results (Table 4) highlight critical insights regarding consumer segmentation based on purchase frequency and desire intensity. Enterprises should prioritize retaining high-value consumer groups, particularly frequent purchasers and individuals exhibiting strong collection desires, through tailored loyalty programs, early-access opportunities, or

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exclusive limited-edition offerings. Conversely, for lower-income consumer groups, companies might introduce more affordable blind box alternatives or flexible payment plans to enhance product accessibility without exacerbating financial stress.

By adopting these targeted strategies, businesses can more effectively enhance consumer satisfaction, drive sustainable sales growth, and foster long-term customer loyalty within the competitive blind box market.

7. Conclusion

The emergence of blind boxes has significantly reshaped contemporary consumer behavior by combining elements of surprise, collectability, and emotional engagement, effectively transforming this model into a powerful marketing tool. This study has identified critical determinants of consumer purchasing decisions, notably the intensity of desire to complete collections, gender-specific behaviors, and the influences of purchase frequency and income levels. Companies such as Pop Mart have successfully leveraged these insights, employing strategic product design, intentional scarcity, and targeted marketing campaigns to achieve substantial commercial success. Moving forward, enterprises should prioritize consumer-centered innovation, transparency, and inclusivity to sustain and expand their market positions. By strategically addressing both psychological drivers and practical considerations associated with blind box consumption, businesses can forge deeper connections with their audiences while mitigating potential adverse effects, such as overspending.

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Appendix

Question 1. Gender[single choice]

option	subtotal	scale
woman	125	50%
man	123	49.2%
I dont want to say	2	0.8%
Number of valid entries for this question	250	

Question 2. What is your age? [single choice]

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option	subtotal	scale
Under 14	12	4.8%
14-18	22	8.8%
18-25	58	23.2%
26-30	63	25.2%
31-40	55	22%
More than 40	40	16%
Number of valid entries for this question	250	

Question 3. What is your education? [single choice]

option	subtotal	scale
Junior high school and below	34	13.6%
High school/technical secondary school	35	14%
junior college	66	26.4%
undergraduate college	99	39.6%
Postgraduate or above	16	6.4%
Number of valid entries for this question	250	

Question 4. Your monthly disposable income [single choice]

option	subtotal	scale
< two thousand yuan	31	12.4%
2000-5000 yuan	122	48.8%
5001-8000 yuan	44	17.6%
> eight thousand yuan	53	21.2%
Number of valid entries for this question	250	

Question 5. How often do you buy blind boxes? [single choice]

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option	subtotal	scale
At least 3 times per week	54	21.6%
Once or twice a week	53	21.2%
Once or three times a month	57	22.8%
I bought it within six months	50	20%
Never bought	36	14.4%
Number of valid entries for this question	250	

Question 6. What is the reason why you did not buy a blind box? (Multiple choice)

option	subtotal	scale
Think its cost-effective	16	44.44%
No interest in the product	20	55.56%
Worried about addiction risks	20	55.56%
Lack of access to goods	13	36.11%
Value dissonance (e.g. overconsumption)	20	55.56%
other	6	16.67%
Number of valid entries for this question	36	

Question 7. What is your usual budget for a blind box purchase? [single choice]

option	subtotal	scale
< fifty yuan	84	33.6%
50-100 yuan	100	40%
101-200 yuan	46	18.4%
> two hundred yuan	20	8%
Number of valid entries for this question	250	

Question 8. Which channel do you prefer to buy blind boxes? (Multiple choices)[Multiple-choice question]

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option	subtotal	scale
Offline brick-and-mortar stores	192	76.8%
Official online shopping mall (such as Popmart APP)	157	62.8%
E-commerce platform (Taobao/jd.com, etc.)	163	65.2%
Second-hand trading platforms (Xianyu, etc.)	114	45.6%
Social platforms (WeChat group, Xiaohongshu, etc.)	96	38.4%
other	49	19.6%
Number of valid entries for this question	250	

Question 9. What are your main driving forces to buy blind boxes? (Multiple choices) [Multiple-choice question]

option	subtotal	scale
Save specific IP/series	170	68%
Enjoy the surprise of unpacking	170	68%
Pursue hidden/limited edition items	150	60%
Social sharing (circle of friends/social discussion)	99	39.6%
Relieve stress/entertainment □ Follow the trend	133	53.2%
Make a profit on second-hand trading	128	51.2%
other	44	17.6%
Number of valid entries for this question	250	

Question 10. How do you feel when you remove a style you dont like? [Single choice]

option	subtotal	scale
Very disappointed and think its a waste of money	102	40.8%
Some disappointment but acceptable	64	25.6%
Never mind, keep buying	52	20.8%
Active resale/exchange	18	7.2%
Trigger a repeat purchase to make up for the regret	14	5.6%
Number of valid entries for this question	250	

Question 11. How much do you want to "collect the whole set of blind boxes"? [single choice]

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option	subtotal	scale
Very strong, will continue to buy until the collection	104	41.6%
Stronger, but will control the budget	88	35.2%
Generally, collect by chance	40	16%
Totally unconcerned	18	7.2%
Number of valid entries for this question	250	

Question 12. What do you think is the core reason for the popularity of blind boxes? (Multiple choice) [Multiple choice question]

option	subtotal	scale
IP co-design appeal	173	69.2%
Gambling psychology (betting small for big)	166	66.4%
Social media marketing (unboxing videos, etc.)	140	56%
Community belonging (fan base)	127	50.8%
The impulse to spend with a low price	139	55.6%
Emotional companionship attributes (e.g. wave play characters)	132	52.8%
other	41	16.4%
Number of valid entries for this question	250	

Question 13. Have you ever bought a blind box beyond your budget? [single choice]

option	subtotal	scale
be of common occurrence	117	46.8%
Occasionally	73	29.2%
Never happened	60	24%
Number of valid entries for this question	250	

Question 14. How do you view the "addictiveness" of blind box consumption? [single choice]

option	subtotal	scale
Totally agree, there is a cycle of impulse buying	58	23.2%
Partly yes, but self-controlled	90	36%
Disagree, rational consumption decision	77	30.8%
indeterminacy	25	10%
Number of valid entries for this question	250	

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Question 15. Do you support the regulation of blind box consumption? (such as probability disclosure and purchase limit) [single choice]

option	subtotal	scale
Strong support	77	30.8%
support	72	28.8%
neutrality	63	25.2%
oppose	27	10.8%
comstockery	11	4.4%
Number of valid entries for this question	250	