THE IMPACT OF THE BLIND BOX MODEL ON POP MART CONSUMERS' REPURCHASE INTENTION： BASED ON THE PERSPECTIVE OF SCARCITY PERCEPTION

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Abstract

This study investigates the impact of Pop Mart's blind box model on consumer repurchase intention through the lens of scarcity perception. Grounded in Commodity Theory and Reactance Theory, the research examines how perceived scarcity—operationalized through quantity, time, and uniqueness dimensions—influences repeat purchases. A quantitative study was conducted using a structured questionnaire distributed to 400 consumers in Chengdu, China. The empirical findings strongly support all three hypotheses, demonstrating significant positive correlations between each scarcity dimension and repurchase intention. The study concludes that scarcity perception is a multifaceted and powerful driver of repurchase intention within the blind box model, offering valuable practical implications for trendy toy enterprises to optimize marketing strategies and enhance customer loyalty.

Keywords: perceived scarcity, repurchase intention, blind box

Introduction

In recent years, with the rapid development of China's economy and the upgrading of social consumption structure, the trendy toy market has risen rapidly as a new form of cultural and entertainment consumption. According to relevant market reports, the scale of China's trendy toy market will exceed RMB 50 billion in 2024, with an annual compound growth rate of more than 30%, among which blind box products occupy a dominant position (Cao, 2024; Zhang, 2024). As a leading company in the trendy toy industry, Pop Mart has achieved explosive growth through its unique blind box model. In 2024, Pop Mart's annual active users reached 12 million, with a repurchase rate of 50% and sales exceeding RMB 10 billion.

While traditional marketing emphasizes price and quality, the blind box context suggests scarcity is a dominant factor. This study explores the repurchase intention mechanism through a multi-dimensional scarcity perception lens—quantity, time, and uniqueness—a perspective not fully explored in prior research.

However, prior research has often treated scarcity as a unitary construct, lacking a nuanced analysis of its multi-dimensional impact on the repurchase mechanism. This study

addresses this gap by exploring the repurchase intention mechanism through a refined scarcity perception lens—quantity, time, and uniqueness—thereby extending classical theories to this novel experiential consumption context.

Research Objectives

The overall goal of this study is to explore the impact mechanism of scarcity perception on Pop Mart consumer's repurchase intention under the blind box model. The specific objectives are:

1. To refine the dimensions of perceived scarcity, including quantity scarcity, time scarcity, and uniqueness scarcity, and analyze their action paths in the blind box context.

2. To empirically verify the positive impact of each scarcity dimension on repurchase intention.

3. To provide suggestions for optimizing blind box marketing strategies for companies like Pop Mart based on the research results, enhancing sustainable repurchase rates.

Scope of the Research

The scope of this study is delineated across three key dimensions to ensure a focused and feasible investigation:

·Population Scope: The research subjects are defined as consumers residing in Chengdu, Sichuan Province, China, who have purchased Pop Mart blind box products at least once within the past 6 to 12 months. This geographical and behavioral specificity ensures the data reflects the perceptions and intentions of an active and relevant consumer base.

·Variable Scope: The study focuses on a clearly defined set of variables. The dependent variable is consumer repurchase intention. The independent variables are the three dimensions of perceived scarcity: perceived quantity scarcity, perceived time scarcity, and perceived uniqueness scarcity. The investigation is confined to the relationships between these specific variables.

·Time Scope: The data collection for this study was conducted within a fixed period, from September 1 to 20, 2025. Furthermore, the consumer purchase behavior under investigation is retrospective, covering purchases made from July 1, 2024, to June 30, 2025. This timeframe ensures the recency and relevance of the behavioral data.

Literature Review

1. Perceived Scarcity

Perceived scarcity refers to a consumer's subjective belief or assessment that the availability of a desired product, service, or opportunity is limited or restricted (Sharma & Roy, 2020). The theoretical bedrock of perceived scarcity's influence is firmly established in Commodity Theory (Brock, 2020), which posits that any commodity becomes more valuable as its availability becomes restricted. Scarcity acts as a heuristic cue, triggering a fundamental desire to obtain it before it becomes unavailable, often driven by a Fear of Missing Out (FOMO) (Wu et al., 2022). Modern marketing strategies, including the blind box model, deliberately leverage perceived scarcity to cultivate a perception that enhances the product's

allure and exclusivity.

2. Dimensions of Scarcity and Repurchase Intention

· Perceived Quantity Scarcity: This reflects the belief that an item is limited in physical stock. It leverages Commodity Theory and Reactance Theory (Wu et al., 2022), where the threat to the freedom of acquiring a desired item intensifies the desire to obtain it, motivating repeated purchase attempts.

· Perceived Time Scarcity: This involves limitations on the availability window for purchase. It creates urgency by activating loss aversion tendencies (Kahneman & Tversky, 2021), where the potential regret of missing out drives immediate action and repeated engagement.

· Perceived Uniqueness Scarcity: This is the belief that a product possesses rare, distinctive attributes. It draws on Signaling Theory (Spence, 2020) and Uniqueness Theory (Snyder, 2022), where scarce goods act as signals of taste, status, and individuality, fulfilling consumers' need for distinctiveness and fostering emotional attachment.

3. Consumer Repurchase Intention (CRI)

CRI represents a consumer's conscious plan or likelihood to repurchase from the same brand. It is a critical predictor of customer retention and sustained revenue (Zeithaml et al., 2020). The Expectation-Confirmation Theory (ECT) posits that repurchase intentions are primarily driven by post-purchase satisfaction (Oliver, 2024). In experiential contexts like blind boxes, hedonic value—derived from fun, pleasure, and emotional arousal—is a dominant driver of the desire to repeat the purchase (Babin et al., 2023).

Critical Synthesis with Prior Research

While previous studies on scarcity have focused on initial purchase intention for conventional products (Aggarwal et al., 2021) or loot boxes in gaming (King & Lamberton, 2022), this research distinctively applies a multi-dimensional scarcity framework to the repurchase behavior for physical collectibles. Unlike single-dimensional approaches, our model captures the synergistic psychological forces—value inference, urgency, and identity signaling—that sustain engagement in Pop Mart's blind box ecosystem.

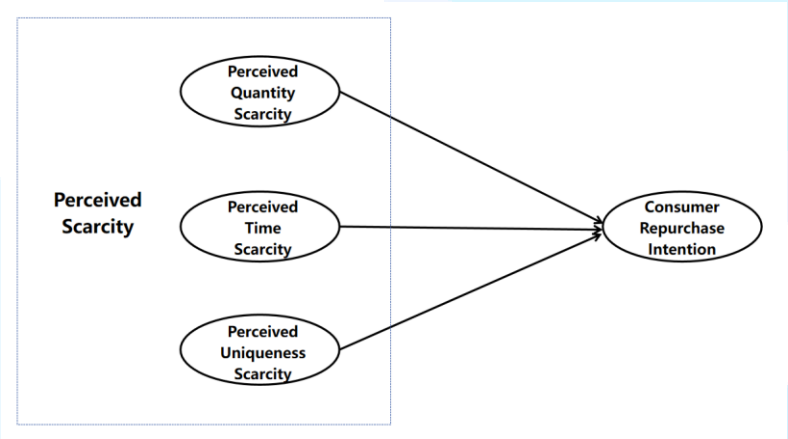
4. Research Framework

Based on the literature, the following conceptual framework (Figure 1) and hypotheses are proposed:

H1: Perceived quantity scarcity positively affects consumer's repurchase intention.

H2: Perceived time scarcity positively affects consumer's repurchase intention.

H3: Perceived uniqueness scarcity positively affects consumer's repurchase intention



Finger 1 Conceptual framework

Research Methodology

This section outlines the systematic approach adopted to collect and analyze data for this study.

1. Research Design:

A quantitative research design was employed to objectively measure the relationships between the defined variables. This approach was deemed most appropriate for testing the proposed hypotheses and generalizing the findings from the sample to the broader population of Pop Mart consumers in Chengdu.

2. Research Steps:

The research was executed in a sequential manner:

Instrument Development: A structured questionnaire was designed based on established scales from prior literature, adapted to the context of Pop Mart blind boxes.

Data Collection: The finalized questionnaire was distributed through online and offline channels to the target population in Chengdu.

Data Screening: The collected responses were screened for completeness and validity, resulting in 400 usable questionnaires.

Data Analysis: The valid data were analyzed using statistical software to test reliability, validity, and the hypothesized relationships.

3. Data Collection:

The primary data were gathered via a structured questionnaire distributed using non-probability sampling methods. The channels included Pop Mart's online communities, dedicated fan groups, relevant topic hubs on Weibo and Xiaohongshu, and cooperating offline retail stores in Chengdu. The survey yielded 400 valid responses, meeting and exceeding the calculated sample size requirement of 385. Non-probability sampling was used through online and offline channels. While this limits the generalizability of findings beyond the studied population, it ensures relevance for the target consumer segment. To mitigate potential response bias, the questionnaire used established scales and guaranteed respondent anonymity.

4. Data Analysis:

The data analysis was performed using SPSS version 29.0. The process involved:

· Reliability Analysis: Assessed using Cronbach's Alpha to ensure the internal consistency of the measurement scales for all constructs.

· Validity Analysis: Conducted using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity to verify the suitability of the data for factor analysis.

· Descriptive Statistics: Used to summarize the demographic profile of respondents and the central tendency (mean) and dispersion (standard deviation) of all research variables.

· Inferential Analysis: Pearson correlation analysis was employed to test the strength and direction of the relationships between the three scarcity dimensions and repurchase intention, thereby directly testing the research hypotheses.

Research Results

This section presents the key findings of the empirical analysis, focusing on the reliability of the measurement instrument and the testing of the core hypotheses regarding the relationships between scarcity perceptions and repurchase intention.

1. Reliability and Descriptive Statistics of Variables

The credibility of the research findings hinges on the reliability of the measurement scales. The Cronbach's Alpha coefficients for all constructs were well above the accepted threshold of 0.7, indicating excellent internal consistency and reliability (Perceived Quantity Scarcity: 0.858; Perceived Time Scarcity: 0.868; Perceived Uniqueness Scarcity: 0.863; Consumer Repurchase Intention: 0.830).

Furthermore, descriptive statistics showed that the mean scores for all core constructs fell within the "slightly agree" to "agree" range (means ranging from 3.37 to 3.41 on a 5-point scale), confirming the positive presence of the targeted perceptions and behavioral intentions in the sample. Moderate standard deviations indicated a healthy distribution of responses.

2. Hypothesis Testing Results

The primary objective of the data analysis was to test the three research hypotheses. A Pearson correlation analysis was conducted to examine the relationships between the three dimensions of perceived scarcity and consumer repurchase intention. The results, presented in Table 2, provide strong and unambiguous support for all proposed hypotheses.

Table 2 Correlations between Variables (Pearson Correlation Matrix)

	Perceived Quantity Scarcity	Perceived Time Scarcity	Perceived Uniqueness Scarcity	Consumer Repurchase Intention
Perceived Quantity Scarcity	1			

	Perceived Quantity Scarcity	Perceived Time Scarcity	Perceived Uniqueness Scarcity	Consumer Repurchase Intention
Perceived Time Scarcity	.870	1		
Perceived Uniqueness Scarcity	.873	.870	1	
Consumer Repurchase Intention	.842	.857	.856	1

Note: Correlation is significant at the 0.05 level (two-tailed). Correlation is significant at the 0.01 level (two-tailed).

The correlation matrix reveals very strong, positive, and statistically significant relationships ($p < 0.01$) between each independent variable and the dependent variable. The correlation between Perceived Quantity Scarcity and Repurchase Intention is 0.842, providing strong support for H1. The correlation for Perceived Time Scarcity is 0.857, leading to the support of H2. Similarly, the correlation for Perceived Uniqueness Scarcity is 0.856, resulting in the support of H3.

In summary, the empirical data conclusively demonstrates that all three dimensions of scarcity perception—quantity, time, and uniqueness—are potent and significant drivers of consumers' intention to repurchase Pop Mart blind box products. The high inter-correlations among the scarcity dimensions also suggest that they function as interrelated components of a broader scarcity perception strategy, collectively reinforcing the consumer's desire to engage in repeat purchases.

The Pearson correlation analysis provided strong initial support for all hypotheses ($p < 0.01$), with significant positive correlations between each scarcity dimension and repurchase intention (H1: $r = .842$; H2: $r = .857$; H3: $r = .856$).

To further elucidate the relative influence of each dimension, the relationships were examined through multiple regression. The regression model confirmed that all three dimensions are significant positive predictors of repurchase intention. The standardized coefficients (Beta) indicate that Perceived Time Scarcity ($\beta = .317$) exerts the strongest unique effect, followed by Perceived Uniqueness Scarcity ($\beta = .303$) and Perceived Quantity Scarcity ($\beta = .269$). This provides nuanced insight beyond the correlation analysis, highlighting time-limited offers as the most potent tactical lever within an integrated scarcity strategy.

Conclusion and Discussion

This study successfully validates its core theoretical framework, demonstrating that scarcity perception is a multifaceted driver of consumer repurchase intention in the context of Pop Mart's blind box model.

The confirmed relationship between perceived quantity scarcity and repurchase intention resonates strongly with Commodity Theory and Reactance Theory. The artificial limitation of supply elevates the perceived value and transforms purchasing into a goal-oriented pursuit to overcome a perceived barrier.

The robust correlation for perceived time scarcity highlights the effectiveness of time-bound marketing tactics. The sense of urgency instills a potent FOMO, leveraging principles of loss aversion to shorten decision-making cycles and promote immediate and subsequent purchases.

The significant impact of perceived uniqueness scarcity touches upon deeper needs for self-expression and social identity. A rare blind box item acts as a signal of taste and successful acquisition prowess, enhancing psychological ownership and social capital, which in turn drives repeated engagement.

In synthesizing these findings, the research moves beyond a superficial description to provide an empirically grounded explanation of the psychological processes at play. It reveals that repurchase behavior is profoundly shaped by the strategic management of scarcity cues, which tap into fundamental consumer motivations including the desire for valued possessions, the urge to avoid loss, and the need for social distinction.

Academic Contribution and Comparison with Prior Studies

This study successfully validates that scarcity perception is a multifaceted driver of repurchase intention in Pop Mart's blind box model. Our findings align with and extend prior work. For instance, while Wu et al. (2022) found scarcity drives initial purchases, we demonstrate its sustained power for repurchase. Compared to studies on loot boxes that emphasize randomness, our results highlight the critical role of designed scarcity (quantity, time, uniqueness) in fostering collectibility and emotional attachment in physical products.

Practical and Ethical Implications

For trendy toy enterprises, the results provide a clear strategic blueprint. The strong influence of all three dimensions suggests an integrated approach is most effective. However, the potent effect of time scarcity necessitates careful management to avoid consumer burnout. From an ethical and consumer protection standpoint, these findings highlight the potential for scarcity appeals to encourage overconsumption. Regulators and companies should consider policies such as purchase limits for at-risk groups and clear disclosures to promote informed and responsible consumption.

Recommendations

Based on the empirical findings of this study, the following recommendations are proposed to guide business practice and future academic inquiry.

1. Recommendations for the Application of Research Results

The strong, positive influence of all three scarcity dimensions on repurchase intention

provides a clear strategic blueprint for trendy toy enterprises like Pop Mart and other industries employing similar mystery box models. The key is to apply these findings in a balanced and data-driven manner to optimize long-term customer value.

· Implement a Dynamic and Transparent Scarcity Management System. Rather than applying uniform scarcity rules, companies should leverage consumer data to calibrate their strategies. For instance, the probability of hidden models could be dynamically adjusted based on a series' popularity and lifecycle stage—slightly higher probabilities for new series to attract initial buyers, and lower for established series to maintain long-term collector interest. Crucially, this artificial scarcity must be managed with transparency. Publicly disclosing pull rates for rare items on product pages or official websites is essential to build trust, mitigate perceptions of manipulation, and foster a fairer consumer environment, which is critical for sustaining engagement in the face of potential regulations.

· Orchestrate an Integrated Scarcity Strategy to Avoid Fatigue. The high inter-correlation between scarcity dimensions suggests they work best in concert. However, over-reliance on any single lever, particularly time scarcity, can lead to consumer burnout. Marketers should design campaigns that thoughtfully combine the dimensions. For example, a limited-edition collaboration (quantity scarcity) should have a clearly communicated and reasonable sales window (time scarcity), while its product design should be genuinely distinctive to justify its exclusive status (uniqueness scarcity). Furthermore, creating tiered "early access" for loyal customers before a general public sale can enhance the perception of exclusivity and reward valuable segments, thus using time scarcity as a loyalty tool rather than just a broad pressure tactic.

2. Recommendations for Future Research

This study opens several promising avenues for future research to deepen the understanding of consumer behavior in blind box and experiential consumption contexts.

· Incorporate Mediating and Moderating Variables. While this study established a direct causal link, future research should investigate the underlying psychological mechanisms. Variables such as Fear of Missing Out (FOMO), psychological ownership, and perceived value are strong candidates for mediating the relationship between scarcity perception and repurchase intention. Furthermore, the strength of these relationships may be influenced by moderating variables like consumer demographics (e.g., age, income), personality traits (e.g., need for uniqueness, risk aversion), and cultural backgrounds. Exploring these factors will provide a more nuanced model of how scarcity functions.

· Expand the Research Context and Methodology. To enhance the generalizability of the findings, future studies should replicate this research in different geographical markets (e.g., Southeast Asia, North America) where cultural differences may alter scarcity perceptions. The model could also be tested in other blind box sectors, such as cosmetics, video game loot boxes, or collectible cards, to see if the drivers of repurchase vary by product type. Methodologically, employing a mixed-methods approach that combines quantitative surveys with qualitative interviews or focus groups would be highly beneficial. This would allow researchers to not only confirm statistical relationships but also to capture the rich, subjective experiences, emotions, and decision-making processes of consumers when they encounter

scarcity cues.

Acknowledgement

The author would like to express sincerest gratitude to the research advisor, Dr. Arnupap Kerepat, for invaluable guidance. Thanks are also extended to family, friends, and the College of Innovation and Management for their support, which enabled the successful completion of this research.

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