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# PRICING OF LABUBU FIGURES IN DIGITAL MARKETPLACES: A BEHAVIORAL ECONOMICS ANALYSIS

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## ABSTRACT

This study examines the price dynamics of Labubu collectible figures in digital markets from a behavioral economics perspective, suggesting that psychological factors significantly skew prices beyond traditional supply-demand mechanisms. Based on the framework of Prospect Theory, conspicuous consumption, and herd behavior, the research analyzes the 2024 eBay dataset of premium and original figures. The empirical findings show that the average price (221.35 USD) is significantly higher than the median price (180 USD) and the distribution is out of the ordinary with a right-skewed one; The Shapiro–Wilk test confirms this situation. The main cause of skewness is high-value outlier observations; when these observations are subtracted, the average drops to 178.70 USD and the distribution becomes more normal. This suggests that the high prices paid for products perceived as "rare" artificially raise the market average. Bootstrap analysis offers a stable 95% confidence interval in the range of 173.80–183.50 USD for the core market price without behavioral distortions. The visualizations reveal a multi-peak structure with a main cluster concentrated between $100–$250 and a secondary cluster around $400–$600, indicating different consumer segments. Behaviorally, the emphasis on limited production triggers loss aversion and FOMO, social media reinforces herd behavior, and conspicuous consumption legitimizes premium pricing by turning these figures into status symbols. The study highlights that price formation in the Labubu market is not rational but rather determined by strong behavioral biases.



**Keywords:** Behavioral Economics, Symbolic Consumption, FOMO, Digital Consumer Behavior

**JEL Classification Codes :** D91, D81, M31

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# DİJİTAL PAZARLARDA LABUBU FİGÜRÜ FİYATLAMASI: BIR DAVRANIŞSAL İKTİSAT ANALİZİ

## ÖZET

Bu çalışma, dijital pazarlarda Labubu koleksiyon figürlerinin fiyat dinamiklerini davranışsal iktisat perspektifinden incelemekte ve psikolojik faktörlerin fiyatları geleneksel arz-talep mekanizmalarının ötesinde önemli ölçüde çarpıttığını ileri sürmektedir. Beklenti Teorisi, gösterişçi tüketim ve sürü davranışı çerçevesine dayanan araştırma, premium ve orijinal figürlerden oluşan 2024 eBay veri setini analiz etmektedir. Ampirik bulgular, ortalama fiyatın (221.35 USD) medyan fiyattan (180 USD) belirgin şekilde yüksek olduğunu ve dağılımın sağa çarpık ile normal dışı olduğunu göstermekte; Shapiro–Wilk testi bu durumu doğrulamaktadır. Çarpıklığın başlıca nedeni yüksek değerli aykırı gözlemlerdir; bu gözlemler çıkarıldığında ortalama 178.70 USD'ye düşmekte ve dağılım daha normal hale gelmektedir. Bu durum, "nadir" olarak algılanan ürünlere ödenen yüksek fiyatların piyasa ortalamasını yapay biçimde yükselttiğini göstermektedir. Bootstrap analizi, davranışsal çarpıtmaların olmadığı çekirdek piyasa fiyatı için 173.80–183.50 USD aralığında istikrarlı bir %95 güven aralığı sunmaktadır. Görselleştirmeler, 100–250 USD arasında yoğunlaşan ana kümenin yanında 400–600 USD civarında ikincil bir küme ile çok tepeli bir yapı ortaya koymakta ve farklı tüketici segmentlerine işaret etmektedir. Davranışsal açıdan sınırlı üretim vurgusu kayıptan kaçınma ile FOMO'yu tetiklemekte, sosyal medya sürü davranışını güçlendirmekte ve gösterişçi tüketim bu figürleri statü sembolüne dönüştürerek premium fiyatlamayı meşrulaştırmaktadır. Çalışma, Labubu piyasasında fiyat oluşumunun rasyonel değil, güçlü davranışsal önyargılar tarafından belirlendiğini vurgulamaktadır.



**Anahtar Kelimeler:** Davranışsal İktisat, Sembolik Tüketim, FOMO, Dijital Tüketici Davranışı

**JEL Sınıflandırma Kodları:** D91, D81, M31

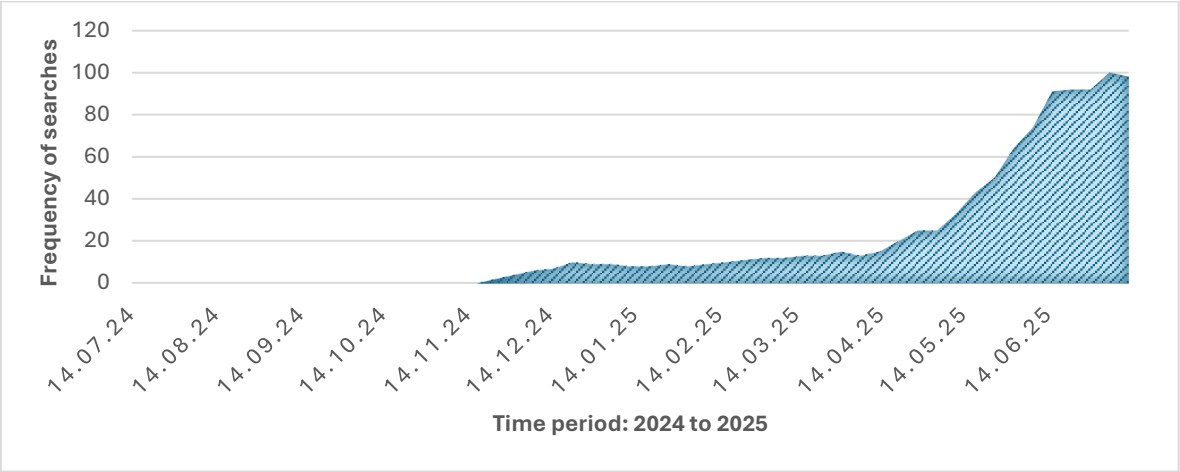
## 1. INTRODUCTION

Over the past decade, the ongoing process of digitalization has fundamentally reshaped consumption into a multifaceted phenomenon that transcends mere economic exchange, evolving into a complex interplay of psychological motivations and cultural expression. The ubiquitous influence of social media platforms has been particularly transformative, enabling viral products to bypass traditional consumer decision-making processes and catalyze entirely new behavioral ecosystems. This paradigm shift finds robust theoretical grounding in behavioral economics, where established concepts including framing effects, fear of missing out (FOMO), and herding behavior offer critical analytical frameworks for understanding these modern consumption patterns (Kahneman & Tversky, 1979; Thaler, 1985). Within this digital milieu, limited-edition niche products occupying premium market segments demand particularly nuanced examination, requiring analytical approaches that simultaneously incorporate economic principles and psychological drivers to fully comprehend their market dynamics and consumer appeal.

One such product, the Labubu figurine, originating from Asian popular culture, exemplifies a novel form of consumer behavior shaped by the desire to collect, social media influence, and limited supply. In this process, the product gains value not only as a tangible object but also as a status symbol, a digital showcase artifact, and a marker of personal identity (Budiman & Laili, 2024, pp. 200–204; Putri et al., 2024, pp. 20–22).



**Figure 1:** Google Trends data on the search frequency of Labubu toys from 2024 to 2025




**Source:** Google Trends, 2025

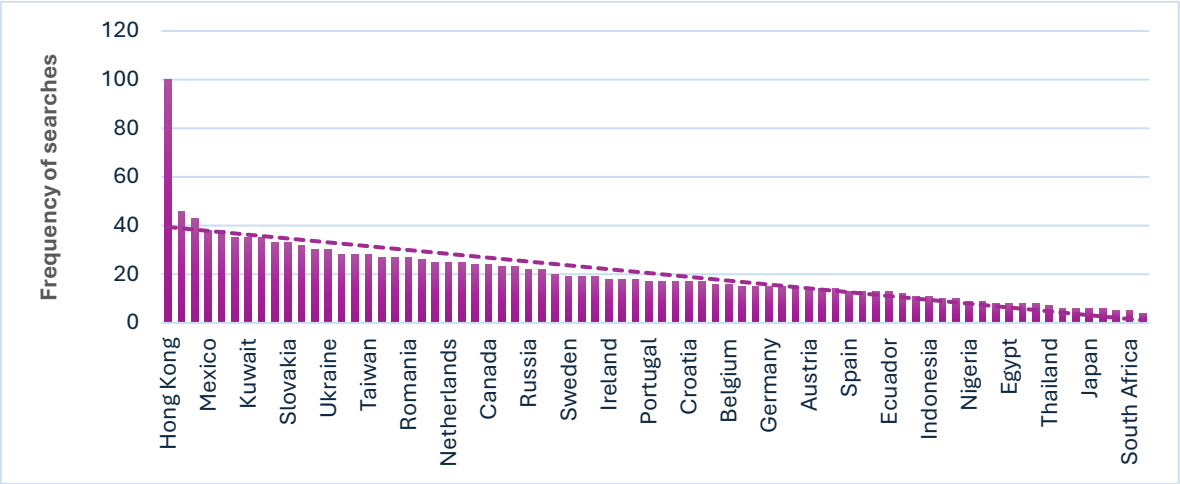
Figure 1, illustrates the temporal evolution of global search interest in the keyword “Labubu” based on Google Trends data, covering the period from July 14, 2024, to July 13, 2025. The

analysis is not restricted to any specific country and instead reflects worldwide user behavior. The near-zero levels of search interest during the initial months of the observed period indicate the product's limited brand awareness and lack of visibility within the digital consumer landscape at that time. The slight uptick in search volume beginning in November 2024 suggests the influence of early adopters and the possible emergence of initial exposure through social media platforms.

The sharp increase observed in the second quarter of 2025 signals the product's transition into a trending commodity, likely driven by behavioral mechanisms such as herding behavior and fear of missing out (FOMO). The peak in search interest on July 6, 2025 (indexed value: 100), reflects the point at which the product gained widespread popularity, coinciding with an intensification of psychological dynamics such as social comparison and emotion-driven purchasing behavior. Despite a minor decline in the following week, the sustained high level of search activity suggests that the trend had not yet reached saturation and that consumer engagement remained active and responsive. In this regard, the rise of the "Labubu" figurine can be interpreted not merely as a case of product diffusion, but as a reflection of collective behavioral interaction in the digital marketplace.

**Figure 2:** Search Popularity of 'Labubu' Across Countries, 2024–2025






**Source:** Google Trends, 2025

Based on Google Trends data from the 2024–2025 period, the country-level frequency of searches for the term Labubu reveals significant variations in the geographical distribution of consumer interest. Hong Kong ranks highest with a score of 100, representing the region with the most intensive search activity. It is followed by countries in the Middle East and Asia, such as the United Arab Emirates (46) and Singapore (43). Other countries across different

continents—Mexico and Australia (38); Poland, Kuwait, and the United States (35); Czechia and Slovakia (33)—demonstrate a moderate level of engagement. This diversity indicates that global awareness and curiosity surrounding the Labubu figurines extend beyond conventional regional boundaries.

Countries such as Türkiye (10), Nigeria (9), Pakistan (9), France (8), Spain (13), and Germany (15) show relatively lower but still meaningful search activity. These results suggest that Labubu possesses an emerging global appeal and presents opportunities for future market expansion. Furthermore, socio-economic factors such as digital connectivity, cultural preferences, and regional marketing strategies appear to influence consumer search behavior and are reflected in these trends. The prominence of high search volumes in technologically advanced and economically dynamic countries highlights the importance of the interaction between digital consumer culture and collectible product trends. Overall, this geographical distribution of interest provides valuable insights for both marketers and researchers, especially in identifying key target markets and designing strategic initiatives in regions with strong growth potential. The data also offer a valuable resource for understanding the global dynamics of the collectible toy industry and for enhancing the effectiveness of marketing efforts in this niche domain.



Within this framework, the main objective of the study is to investigate the position of Labubu figurines within the evolving consumption dynamics of the digital era from a behavioral economics perspective, while laying the groundwork for future research in Türkiye on this emerging topic. As detailed academic analyses are still lacking in the literature, this subject holds critical importance for understanding how digitalization influences consumer behavior. In particular, the role of social media influence, FOMO, and herding behavior in the popularization of niche collectible products like Labubu offers opportunities for novel insights—both academic and practical. In this context, the findings are expected to contribute not only to the Turkish market but also to global strategies in consumer behavior management and strategic marketing.

## 2. THEORETICAL FRAMEWORK: BEHAVIORAL ECONOMICS APPROACH

Behavioral economics provides a fundamental reconceptualization of economic decision-making by challenging the classical assumption of perfect rationality that underpins traditional economic models. This interdisciplinary field demonstrates that psychological, social, and emotional factors systematically influence economic choices, leading to predictable deviations from rational actor paradigms. The digital transformation of marketplace interactions has

further amplified the relevance of behavioral economics, as social media platforms and online marketplaces create environments particularly conducive to cognitive biases and heuristic-driven decision-making. Within this context, three behavioral mechanisms emerge as particularly salient for understanding digital consumption patterns: the framing effect, fear of missing out (FOMO), and herd behavior.

The framing effect, initially identified by Kahneman and Tversky (1979) within Prospect Theory, reveals how equivalent information presented through different semantic contexts can significantly alter decision outcomes. This cognitive bias manifests prominently in digital commerce through strategic presentation of products as "limited edition," "exclusive," or "scarce," thereby enhancing their perceived value beyond objective utility. In the specific case of Labubu figurines, this framing transforms collectibles from mere playthings into perceived investment opportunities and status symbols, fundamentally altering consumer valuation processes.

Fear of Missing Out (FOMO) represents an increasingly prevalent psychological phenomenon in hyper-connected digital environments, characterized by pervasive anxiety that others may be accessing rewarding experiences from which one is excluded. This anxiety, exacerbated by continuous social media exposure, frequently triggers impulsive purchasing behaviors, particularly for trending items and limited-availability products. Empirical research has established strong correlations between FOMO and compulsive buying tendencies, with digital platforms serving as potent accelerants for this behavioral dynamic through real-time social comparisons and curated content streams.



Herd behavior completes this analytical triad, describing the human tendency to emulate group actions rather than relying on independent analysis or personal information. Digital marketplaces institutionalize this bias through various social proof mechanisms including sales volume indicators, influencer endorsements, and user review systems. For collectible markets specifically, the combination of genuine product scarcity and visible peer demand creates powerful informational cascades that can generate rapid price inflation and demand surges, often divorced from fundamental product attributes.

The integration of these three behavioral mechanisms provides a comprehensive framework for analyzing contemporary digital consumption phenomena. Rather than operating in isolation, these factors frequently interact synergistically: strategic framing amplifies perceived scarcity, which activates FOMO responses, subsequently triggering herd behavior as visible demand signals multiply. This behavioral cascade demonstrates the critical importance of moving

beyond traditional economic models to incorporate psychological and social dimensions when analyzing modern consumer markets, particularly in understanding the pricing dynamics and consumption patterns surrounding niche collectibles like Labubu figurines in digital marketplace environments.

## 3. LITERATURE REVIEW

This section reviews studies that explore the relationship between popular consumption and behavioral economics. The conceptual framework is shaped by contributions from cultural theory, political economy, and media sociology, and is further deepened by discussions in the areas of symbolic value, youth consumption practices, and emotional capitalism (Ahmed, 2004). This theoretical richness allows for a more comprehensive understanding of modern consumers' decision-making processes and identity construction. According to Baudrillard (1998) and Bourdieu (1984), a commodity's value is constructed through meaning and distinction, not merely its practical use. It is specifically through the lenses of "sign-value" and "cultural capital" that we can understand how aestheticized consumption objects become signifiers for constructing identity and denoting social belonging.

Recent empirical research provides contemporary evidence for this cultural interpretation. Chung et al. (2025) demonstrate that digital collectible products function predominantly as symbolic identity markers rather than utilitarian goods. Their findings show that purchase intentions in digital collectible markets are strongly shaped by ideal-self congruence, perceived symbolic value, and social influence embedded within digital platforms. Consumers assess such products according to how effectively they express personal identity, enhance social signaling, and reinforce belonging within online communities. These results complement cultural theory by illustrating that digital consumption is increasingly grounded in meaning-making and identity performance rather than rational utility maximization. Although Chung et al. (2025) focus on digital collectibles (NFTs), their findings are theoretically relevant to physical collectible markets as well, since symbolic identity construction, social signaling, and ideal-self congruence operate similarly across both digital and tangible consumption contexts.



Beside to this, one of the foundational theories in behavioral economics is the Prospect Theory, developed by Kahneman and Tversky (1979). This theory posits that individuals' decision-making processes are influenced not only by material gains and losses but also by non-material factors such as quality of life, policy preferences, and social values (Kahneman & Tversky, 1979, pp. 265–284). Particularly under conditions of uncertainty, individuals tend to rely on subjective decision weights rather than objectively evaluating probabilities, which leads to

systematic biases and unpredictable deviations in decision-making. Subsequent work by Tversky and Kahneman demonstrated that economic decisions cannot be fully explained by individual utility maximization alone; instead, they are shaped by social norms, cultural values, and cognitive frameworks (Tversky & Kahneman, 1981, pp. 454–457). Accordingly, individuals' behaviors are often driven by emotional responses, mental shortcuts (heuristics), and various cognitive biases, necessitating a departure from the traditional rational actor assumption. Expanding on this framework, Thaler (1985) introduced the concept of "mental accounting" to explain consumer behavior. According to this approach, individuals categorize their income, expenditures, and savings in economically irrational ways, which allows for a more realistic analysis of economic decision-making within the bounds of bounded rationality (Thaler, 1985, pp. 201–210).

Camerer argues that behavioral economics broadens the explanatory power of classical economic models by drawing on various disciplines within the social sciences, particularly psychology. He demonstrates that individuals' decision-making processes are shaped not only by utility maximization and unlimited willpower but also by multidimensional psychological factors such as risk perception, time preferences, framing effects, and a sense of fairness. Within this framework, it is posited that firms may manipulate consumers' cognitive limitations to serve their own interests or develop "positive nudging" strategies aimed at helping individuals overcome these constraints (Camerer, 2005, pp. 6–12). Thaler, meanwhile, associates the rise of behavioral economics with Adam Smith's more realistic approach to human nature. According to him, the overly abstract and idealized assumptions of the Homo economicus model fall short in explaining real-world economic behaviors; this gap is filled by behavioral economics, enriched through interdisciplinary methods. He emphasizes the need for the systematic integration of psychological elements—such as self-control problems, perceptions of fairness, and framing effects—into economic analyses. Furthermore, findings from fields like artificial intelligence, machine learning, and neuroscience are argued to have the potential to transform economics into a more empirical and experimental science (Thaler, 2016, pp. 1592–1597).



In recent years, the rapid rise of digitalization and social media usage has introduced new psychological dynamics into individuals' decision-making processes. One study addressing this context links the concept of Fear of Missing Out (FOMO) with agendas and trends shaped through social media. It emphasizes that FOMO triggers various psychosocial effects such as fear of social exclusion, feelings of inadequacy, and stress based on social comparison, which

have become especially prevalent among the youth and may lead to societal transformations beyond individual behaviors (Tanhan, Özok & Tayiz, 2022, pp. 73–78). The reflection of this transformation on consumption behaviors is clearly observable in social media-driven phenomena surrounding Labubu toys in recent times. A qualitative study conducted with Instagram users analyzed consumer decision processes within the AISAS model framework (Attention, Interest, Search, Action, Share), revealing that influencers play a decisive role in shaping the decision-making process (Hardianti, Oktalisa & Fatmawati, 2024, pp. 14–20). Similarly, another study investigating Generation Z consumers found that motivations such as FOMO, social belonging, and aesthetic preference directed their attention to Labubu figures, highlighting the power of social media to transform these figures into global trends (Putri, Ferlianti & Zuhri, 2024, pp. 20–22).

An analysis examining the impact of short-video platforms such as TikTok on young consumers identified that the viral spread of the Labubu figure is driven primarily by Fear of Missing Out (FOMO), the need for social approval, and aesthetic satisfaction (Budiman & Laili, 2024, pp. 200–204). Furthermore, the figure's Japanese origin and the influence of K-Pop culture have transformed Labubu into a symbol of status and identity among youth, analyzed through Barthes' semiotic theory and Hall's reception theory. Within this framework, the figure transcends its status as a mere toy to become an expression of social belonging, cultural representation, and the aesthetic codes of the digital age (Monica, Putri & Musallina, 2024, pp. 638–642).



In a study examining the consumption of Labubu toys through the lens of a five-stage decision-making model triggered by FOMO-induced psychosocial processes, the strategic role of influencers in trend formation was emphasized (Syifaunisa et al., 2024, pp. 210–217). Additionally, when young consumers' efforts to achieve a high quality of life within limited budgets are evaluated from a behavioral economics perspective, cognitive biases such as sunk cost fallacy, payment isolation, and reference dependence were identified as factors that may lead to excessive consumption and indebtedness (Wang, 2024, pp. 102–104).

These discussions provide a broader context for understanding both the symbolic and economic value of the Labubu figure. Within this framework, a study investigating the mutual interaction between the toy and animation industries examined the relationship from historical and digital perspectives; it concluded that the influence of animated characters on toy sales is further reinforced through digital platforms (Karaşahinoğlu & Dönmez, 2025, pp. 1068–1078). Meanwhile, a study analyzing the rising popularity of Labubu in the United States within the

context of China–U.S. trade found that increasing import tariffs paradoxically intensified perceptions of scarcity, thereby further fueling demand (Temel, 2025, pp. 1952–1962). Another study employing an autoethnographic method explored the Labubu craze in Kuala Lumpur in terms of collective meaning-making, consumer rituals, and digital information sharing, interpreting this process not merely as consumption but also as a form of cultural production practice (Long & Xiaochen, 2025, pp. 5–11).

An analysis based on data obtained from 107 participants in a survey study revealed the significant effects of FOMO, celebrity influence, and limited production factors on the purchase intention of Labubu products. In this context, the importance of limited-edition products and influencer collaborations in marketing strategies was emphasized (Luftiani et al., 2025, pp. 99–100). Other studies focusing specifically on Generation Z demonstrated that FOMO, driven by social media influence, induces comparison-based stress and social exclusion anxiety, which in turn triggers impulsive and spontaneous purchasing behaviors. A study conducted among youth in Indonesia analyzed the relationship between FOMO and the Labubu trend spreading via social media (Nur & Jans, 2025, pp. 8–11). Similarly, an empirical study in the city of Surabaya found a significant positive correlation between FOMO and impulsive buying behavior (Kartika, Fardhani & Anggraeni, 2025, pp. 593). Complementing these FOMO-driven mechanisms, recent research shows that Gen Z's purchasing decisions are also strongly shaped by narrative and emotionally engaging digital content. Today, among Gen Z consumers, narrative-driven and emotionally evocative advertising—amplified through social sharing and eWOM—plays a central role in capturing attention, shaping product visibility, and strengthening purchase intentions (Tabassum et al., 2020).



A study analyzing the consumption of surprise boxes from a three-dimensional perspective at the intersection of behavioral economics, psychology, and sociology examined consumer behaviors through concepts such as excitement arising from uncertainty, social currency, and flow experience (Zheng, 2025, pp. 8–21). Lastly, another research investigating Labubu's global success using survey data highlighted emotional satisfaction, collecting tendencies, social belonging, and investment expectations as key drivers for consumers' attraction to these figures. This phenomenon was explained through behavioral economics concepts such as the "tulip mania effect" and the "lipstick effect" (Yang & Li, 2025, pp. 56–60).

As a result of the literature review, the evolution of consumption tendencies from a behavioral economics perspective within the context of FOMO, uncertainty, social influence, and digitalization is comprehensively demonstrated. This study contributes an integrated analysis

of psychosocial and economic motivations by focusing specifically on the Labubu figure. Particularly, it offers an original contribution to the existing literature at the intersection of popular consumption and behavioral economics, providing a novel conceptual framework for understanding popular consumption dynamics.

## 4. DATA AND METHODOLOGY

The dataset used in this study was compiled to examine investment and symbolic consumption behaviors related to the Labubu figure. The data were collected from product listings on the eBay platform for the year 2024, filtered based on specific criteria. Only items produced in 2024, labeled as "Original," and listed as "New" condition were considered. Additionally, only figures categorized under Action Figure, Action Figure Collection, and Set, belonging to selected popular series (e.g., Big, Coca-Cola, One Piece, etc.) were included. The price range was limited to mid-to-high and luxury segments, specifically items priced at 85 USD and above. Listings marked as "Not Specified" were excluded. This unique dataset allows for a descriptive analysis of the online market visibility and valuation trends of the Labubu figure.

### 4.1. Limitations and Future Research

This study has several limitations that must be acknowledged. First and foremost, the analysis is based on publicly available product listing data from eBay and does not include user-level microdata or transaction histories. As a result, it does not permit causal inferences or behavioral tracking at the individual level. The findings are therefore exploratory and descriptive in nature. While this limitation restricts the statistical depth of the study, it also reflects a broader issue in the field: the inaccessibility of detailed digital marketplace data. Nevertheless, the current approach offers a novel framework for understanding symbolic and behavioral dynamics in the collectible toy market. Future research may benefit from integrating transaction-level data, longitudinal observations, or experimental studies to further validate and expand upon the findings of this exploratory work.



**Table 1:** Filtering Criteria Used to Construct the eBay-Based Dataset

| Category | Filter Options | Selected | Notes |
|---|---|---|---|
| **Year Manufactured** | 2020, 2021, 2022, 2024, 2025 | ☑ 2024 | Focus year for analysis |
| **Franchise** | Big, Coca-Cola, How to Train Your Dragon, Monster, One Piece, SpongeBob SquarePants, Not Specified | ☑ Big, ☑ Coca-Cola, ☑ How to Train Your Dragon, ☑ Monster, ☑ One Piece, ☑ SpongeBob SquarePants | Excluding "Not Specified" |

| Category | Filter Options | Selected | Notes |
|---|---|---|---|
| **Type** | Action Figure, Action Figure Collection, Set | ☑ Action Figure, ☑ Action Figure Collection, ☑ Set | Main toy types |
| **Features** | 1st Edition, 5-Way Jointed, Adjustable, Boxed, Break/Chip Resistant, Chase, Collector's Edition, Exclusive, Limited Edition, Luxury Edition, Miniature, Oversized, Reissue, Souvenir, Special Edition, Unboxed, With Clothes, Not Specified | ☑ All except "Not Specified" | Capturing all feature variations |
| **Original/Licensed** | Original, Licensed Reproduction | ☑ Original | Focus on original items |
| **Item Height (inches)** | Various sizes from 5-10 to 41-45 | Not filtered | No height filter applied |
| **Price Range ($)** | 0 to 1500+ | ☑ 85 to 1500+ | Focus on premium/luxury segment |
| **Condition** | New, Used | ☑ New | Exclude used items |
| **Buying Format** | Auction, Buy It Now, Classified Ads, Accepts Offers | ☑ All Listings | All sale types included |
| **Item Location** | US Only, North America, Europe, Asia, Default | Not filtered | No location restriction |
| **Shipping & Pickup** | Various options including free shipping | Not filtered | No shipping filter |

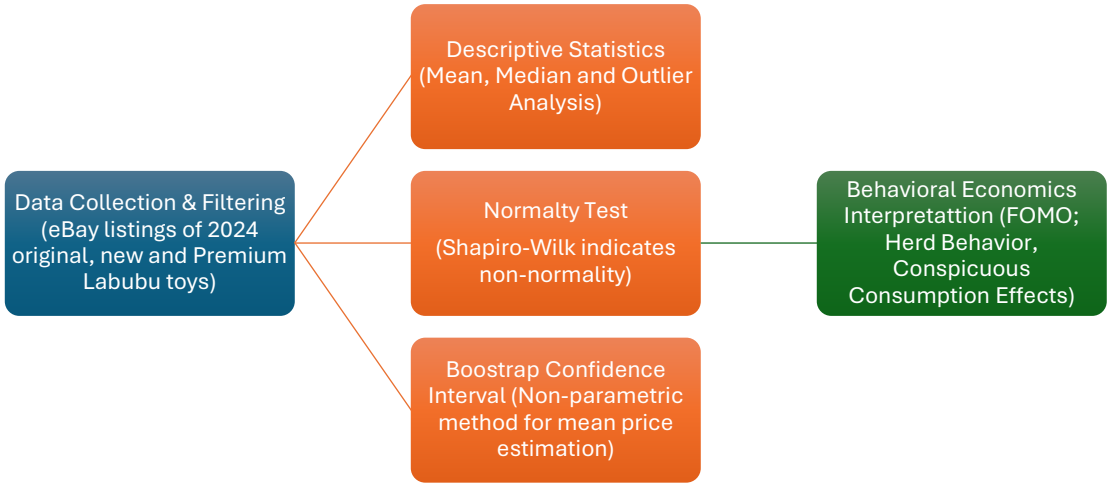
Table 1 provides a detailed overview of the categories and filtering criteria applied to the observations included in the dataset. These filters were selected in line with the study's research questions and analytical framework. Under the "Year Manufactured" category, only products from 2024 were included to control for temporal fluctuations. The "Franchise" filter comprised series with high public recognition and collectible value, such as Big, Coca-Cola, How to Train Your Dragon, Monster, One Piece, and SpongeBob SquarePants. The "Type" filter restricted the dataset to core toy categories, namely Action Figure, Action Figure Collection, and Set. Within the "Features" category, all product attributes except those marked as "Not Specified" were retained, thereby preserving characteristics relevant to the figures' collectible and investment value. The "Original/Licensed" filter included only original products, excluding reproductions and unlicensed items. The "Condition" filter limited the selection to new items, while the "Price Range" was set to 85 USD and above, focusing on the premium and luxury segments. No filters were applied to categories such as "Item Height," "Item Location," and "Shipping & Pickup" to avoid data loss.



This filtering process was designed to enhance data quality and create a meaningful sample that reflects the symbolic value of Labubu figures alongside their limited supply-demand dynamics. The filters provide a data foundation aligned with the study's behavioral economics hypotheses. Given the dataset's unique structure and the market's nascent state, the research was conducted

with an exploratory and descriptive approach rather than a causal one. In this respect, the study represents a pioneering analysis aimed at understanding the current position of Labubu figures within the digital consumption environment.

**Figure 3:** Flowchart of Data Processing and Analytical Steps




The flowchart presented in Figure 3 summarizes the main stages of the data processing and analysis procedure employed in this study. Following the collection and filtering of Labubu figure listings on eBay, the process continued with descriptive statistical analyses and normality tests, proceeded by confidence interval estimation using the bootstrap method, and concluded with an interpretation of the effects of FOMO, herd behavior, and conspicuous consumption within the framework of behavioral economics.



### 4.2. Methodology

Within the scope of the research, a methodological approach comprising descriptive analyses, normality testing, and bootstrap-based confidence interval estimations was adopted to explore the statistical characteristics of price data related to Labubu figures. These analyses were specifically chosen to enable behavioral economic observations in markets characterized by limited and specialized data structures.

Within this context, the study tests the following two main hypotheses:

- **H1:** The price distribution of Labubu figures is not normal.
- **H2:** Outlier price values significantly increase the average price level.

To test these hypotheses, the Shapiro-Wilk normality test will be applied to assess the distribution characteristics of the dataset. To analyze the effect of outliers on the mean price, comparative descriptive statistics will be calculated after excluding outlier observations. Additionally, to address the limitations of parametric assumptions in cases of skewness and deviations from normality, bootstrap methods will be employed to construct confidence intervals for the mean price.

### 4.3. Theoretical Importance of Transaction-Level Data

In behavioral economics, transaction-level data—defined as micro-level records of each individual purchase, including final sale price, bidding history, timing of the transaction, and buyer–seller interactions—plays a critical role in revealing psychological patterns underlying market behavior. Unlike listing-level data, which merely reflects sellers' asking prices, transaction-level observations capture real consumer decisions made under uncertainty. This form of data enables the detection of behavioral mechanisms such as herding, loss aversion, and reference-dependent preferences by tracking rapid price spikes, last-minute bidding surges, and clustering of purchases over short time intervals. For instance, sudden accelerations in bidding activity can empirically signal FOMO-driven decision-making, while sequential price formations can indicate the presence of informational cascades consistent with herd behavior models. Transaction-level data also allows researchers to observe how consumers anchor their willingness to pay to previous sales, revealing the reference points emphasized in Prospect Theory. Although such micro-data would provide a more precise behavioral analysis of the Labubu market, digital platforms like eBay do not publicly offer full transaction histories, limiting this study to listing-level observations. This constraint should be considered a methodological limitation, as future research incorporating transaction-level data would enable a deeper examination of the psychological drivers behind price formation in digital collectibles markets.



## 5. EMPIRICAL RESULTS

First, the study summarizes the basic descriptive statistics of the Labubu figures' prices used within the scope of the analysis. These data provide an overview of the price distribution, central tendency, and dispersion characteristics of the figures.

**Table 2:** Descriptive Statistics of Price Data for Labubu Figures

| Data including outliers | | | | Outlier-removed data | | | |
|---|---|---|---|---|---|---|---|
| **Indicators** | **Value** | **Indicators** | **Value** | **Indicators** | **Value** | **Indicators** | **Value** |
| Obs. | 149 | 1st Quartile | 165 | Obs. | 115 | 1st Quartile | 165 |
| Mean | 221.35 | 3rd Quartile | 210 | Mean | 178.7 | 3rd Quartile | 198.3 |
| Median | 180 | Skewness | 1.71 | Median | 175 | Skewness | 0.03 |
| Std. Dev. (SD) | 118.72 | Kurtosis | 1.9 | Std. Dev. (SD) | 27.23 | Kurtosis | 0.71 |
| Standard Error (SE) | | 2.54 | | Standard Error (SE) | | 2.54 | |
| Minimum | | 103 | | Minimum | | 103 | |
| Maximum | | 258 | | Maximum | | 258 | |

Table 2 presents descriptive statistics for the price data of Labubu figures, revealing notable findings in terms of both statistical structure and behavioral tendencies. In the raw dataset, the mean price is 221.35 units, while the median is 180 units. This disparity indicates a right-skewed price distribution, commonly observed in limited-quantity, high-demand products. Indeed, the calculated skewness coefficient of 1.71 and kurtosis of 1.9 suggest that prices are both shifted toward the extremes and exhibit a leptokurtic distribution. This pattern implies that certain special editions of the figures are perceived as "rare items," leading to inflated prices influenced by consumer behavior. Upon excluding outliers, the mean decreases to 178.7 and the median to 175, while skewness drops to 0.03 and standard deviation to 27.23, indicating that the majority of market prices are actually concentrated around a more balanced level. These results clearly illustrate how behavioral biases such as Fear of Missing Out (FOMO), herd behavior (Banerjee, 1992, pp. 807–817), and conspicuous consumption (Veblen, 1899, pp. 33–47) among collectors can drive prices toward extreme values (Przybylski et al., 2013, pp. 1842–1847). In both datasets, the first quartile value is 165 units, indicating that 25% of the figures are sold below this price. The third quartile values are 210 in the raw data and 198.3 in the cleaned data, demonstrating the strong influence of outliers particularly within the top 25% price segment. These quartile ranges reveal how prices are stratified in the collectible market, highlighting the premium attributed to factors such as scarcity effects and brand narrative within specific price intervals (Lynn, 1991, pp. 5–10). Consequently, the price imbalances identified through statistical measures are driven not only by economic factors but also by behavioral patterns including cognitive biases, social norms, and emotional motivations.



$$W = \frac{(\sum_{i=1}^{n} a_i y_i)^2}{\sum_{i=1}^{n} (y_i - \bar{y})^2} \quad (1)$$

To assess the normality of the dataset, the Shapiro-Wilk test, expressed in Equation 1, was applied. This test is particularly powerful for small to moderate sample sizes (Shapiro & Wilk,

1965, p. 610). In the formula, the numerator measures the correlation between the ordered sample values and their expected values under a normal distribution, while the denominator represents the total variance of the sample.

The analysis presented in Table 3 shows a W statistic of 0.97429 and a p-value of 0.02593. The obtained p-value below 0.05 indicates that the distribution is not normal. This result suggests the presence of skewness in the dataset, likely due to the influence of outliers. This finding is important in questioning the validity of parametric analyses. Moreover, it is consistent with previously identified distribution deviations, such as right skewness and high kurtosis, observed in the descriptive statistics.

**Table 3:** Normality Test Results Based on Shapiro-Wilk Test

| Test | W Value | p-value | Conclusion |
|---|---|---|---|
| Shapiro-Wilk | 0.97429 | 0.02593 | $p < 0.05$, the distribution is not normal |

***Note:*** *The Shapiro-Wilk test indicates that the null hypothesis of normality is rejected at the 5% significance level.*

The non-normal distribution of prices statistically indicates the presence of outliers and imbalances, while from a behavioral perspective, these imbalances are thought to be driven by emotional and social factors. Particularly in collectible products, biases such as perceived scarcity, conspicuous consumption, and Fear of Missing Out (FOMO) can artificially inflate prices. Therefore, the result of the normality test is not only a technical finding but also an explanatory insight for behavioral analyses. It can be argued that market prices are often shaped less by rational market rules and more by individuals' emotional and cultural reflexes.



The failure to meet the normality assumption based on the Shapiro-Wilk test results reduces the reliability of confidence interval calculations for the mean using classical statistical methods. This issue is especially pronounced in asymmetric samples, further highlighting the limitations of parametric approaches. Hence, the study employs the bootstrap method, which does not require distributional assumptions and allows statistical inference based on the sample's own structure. Developed by Efron (1979), this resampling technique generates confidence intervals by drawing repeated samples with replacement from the original data without relying on distributional assumptions (Efron, 1979, p. 3).

$$\widehat{bias_{boot}}(\hat{\theta},\theta) = \bar{\theta}^* - \hat{\theta} = \frac{1}{B}\sum_{j=1}^{B}\hat{\theta}_j^* - \hat{\theta} \quad (2)$$

The nonparametric bootstrap method expressed in Equation 2 aims to approximate the sampling distribution of a statistical estimator directly from the observed data. In this approach, repeated

sampling with replacement is performed from the original dataset, and the relevant statistic (e.g., mean, median, or regression coefficient) is recalculated for each resample. This process is typically repeated $B$ times, and the average of the bootstrap estimates, denoted as $\bar{\theta}^*$ is compared to the original estimate $\hat{\theta}$ to calculate bias. Additionally, the bootstrap standard error is computed based on the variance of these estimates, providing information on the reliability of the estimator. Thus, statistical inferences can be conducted more flexibly and empirically without strict reliance on model assumptions.

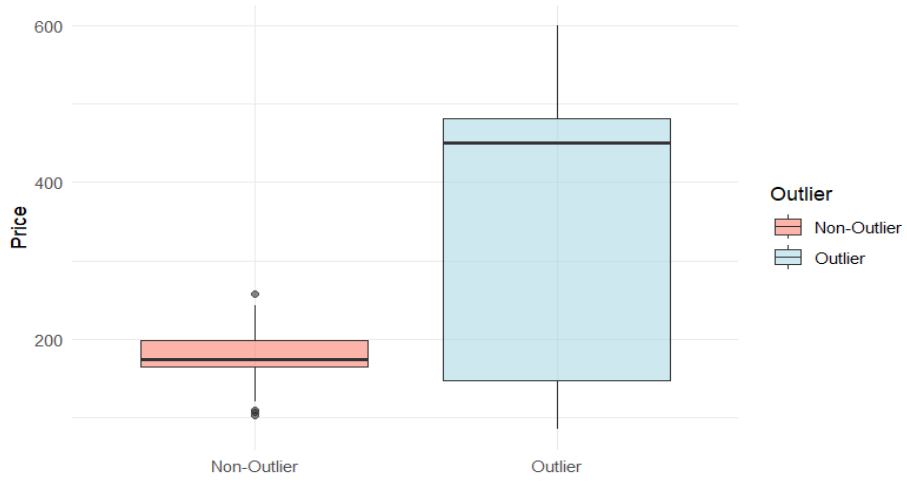
**Table 4:** 95% Bootstrap Confidence Interval for the Mean Price of Non-Outlier Observations

| Confidence Level | Lower Bound | Upper Bound |
|---|---|---|
| 95% | 173.85 | 183.5 |

The 95% confidence interval obtained through the bootstrap method, as presented in Table 4, ranges from 173.8 to 183.5 USD for the mean price of non-outlier observations. Since this interval is calculated via resampling based on the sample structure, it provides a reliable estimate that is robust to skewness and outliers. Notably, the narrowness of this confidence interval indicates that the mean estimate is consistent and statistically significant. These findings are further supported visually. The boxplot in Figure 4 shows that the price distribution for non-outlier observations is tightly concentrated, with a median around 175 USD, whereas the distribution of outliers is much wider and the median is substantially higher, approximately 450 USD. This finding suggests that products with collectible value, such as those labeled “rare” or “limited edition,” artificially inflate prices; therefore, the observed skewness in the distribution has not only a statistical but also a behavioral basis.



**Figure 4:** Comparative Boxplot of Price Distribution: Outliers vs Non-Outliers



This asymmetry in prices can be directly linked to behavioral biases frequently cited in the literature, such as herd behavior, conspicuous consumption, and Fear of Missing Out (FOMO) (Banerjee, 1992, pp. 807–817; Veblen, 1899, pp. 33–47). The rapid appreciation of limited-quantity figures in the market leads collectors to replace rational decision-making with choices driven by emotional and social motivations. In this context, both the Shapiro-Wilk test and bootstrap confidence interval results highlight that statistical analyses should not only be technical evaluations but also incorporate consumer psychology and social dynamics.

**Figure 5:** Probability Density and Histogram of Observed Prices

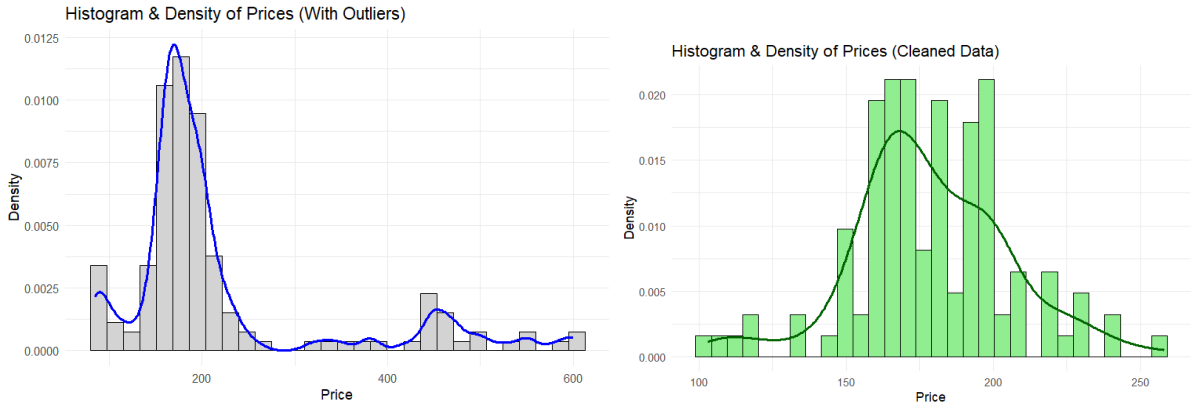





Figure 5 visualizes the price distributions of Labubu figures. In the first graph, which includes outliers, prices are predominantly concentrated in the range of 100–250 USD, with a less frequent but notable secondary concentration observed between 400–600 USD. This pattern indicates the presence of outliers in the dataset and the non-normality of the price distribution. The multimodal nature of the distribution suggests that behavioral factors, such as FOMO and perceived scarcity, exert asymmetric effects on prices. After removing outliers, the resulting price distribution exhibits a more symmetrical and balanced structure. When examining the histogram and density curve together, prices are seen to cluster around the 150–200 USD band, with the distribution being unimodal and free from right skewness. These findings demonstrate that figures with high symbolic value, such as “limited edition” items, artificially inflate prices and distort the overall price distribution.Consequently, the graph visually reflects the potential of consumer behavior to create statistical imbalances and clearly illustrates that price formation is shaped not only by economic but also by psychological dynamics.

## 6. DISCUSSION

The empirical evidence derived from this study substantiates that consumer behavior regarding Labubu figures transcends conventional economic rationality, instead operating within a

complex framework of behavioral economic principles. The statistical anomalies observed in price distributions particularly the significant right-skewness and prevalence of outliers correspond directly to theoretical constructs in behavioral economics. These distribution patterns indicate consumers' propensity for risk-acceptant expenditures on products possessing symbolic and emotional significance, consistent with Prospect Theory's fundamental tenets regarding value perception and decision-making under uncertainty (Kahneman & Tversky, 1979).

The observed price inflation for limited-edition items demonstrates how loss aversion mechanisms manifest as Fear of Missing Out (FOMO) within collectibles markets. This phenomenon is further amplified by Veblenesque consumption dynamics, wherein products serve as visible markers of social distinction rather than mere utilitarian objects (Veblen, 1899). The statistical evidence of outlier-driven mean price elevation provides empirical validation for conspicuous consumption behaviors, revealing how Labubu figures have evolved from simple playthings into sophisticated instruments of social capital accumulation and identity projection within digital ecosystems.

The multimodal price distribution and emergent price thresholds reflect the operation of multiple behavioral biases, including anchoring effects, cognitive dissonance resolution, and reference-dependent preferences. Market participants systematically employ observed price points as cognitive reference markers, creating self-reinforcing price cycles that are further amplified through digital information cascades and social media dissemination. This pricing ecology creates optimal conditions for herd behavior emergence, wherein consumption decisions become increasingly dependent on social signaling rather than product-intrinsic attributes (Banerjee, 1992). The resultant purchasing waves, often catalyzed by influencer networks, generate speculative pricing bubbles that fundamentally undermine traditional price discovery mechanisms.



Ultimately, these empirical patterns form a coherent narrative aligning with core behavioral economics postulates: bounded rationality, heuristic-driven choice, affective decision-making, and framing effects collectively shape market outcomes. The consumption of Labubu figures represents a paradigmatic case where market dynamics are co-determined by supply-demand fundamentals and psychosocial factors including digital sociality, aesthetic valuation, emotional fulfillment, and identity construction. This investigation thereby provides crucial insights into both the consumption of cultural commodities and the structural impact of

behavioral tendencies on market architecture, highlighting the necessity of integrating psychological and sociological dimensions into economic analysis of digital markets.

## 7. CONCLUSION

This research presents a systematic behavioral economics examination of digital consumption patterns in the Labubu collectibles market, advancing the existing literature through empirical validation of theoretical constructs. The investigation substantiates three fundamental behavioral mechanisms in price formation: Prospect Theory's principles of psychological framing and loss aversion (Kahneman & Tversky, 1979), Veblen's conspicuous consumption dynamics (1899), and Banerjee's herding behavior model (1992). The empirical evidence reveals that non-normal, right-skewed price distributions directly reflect consumers' symbolic valuation of rare items, while significant price outliers demonstrate status-seeking consumption patterns. Furthermore, the documented purchasing waves align with FOMO-driven herd behavior in digital environments characterized by information asymmetry, consistent with findings in contemporary literature (Nur & Jans, 2025; Kartika et al., 2025).

Methodologically, this study makes significant strides through its quantitative analysis of original eBay market data from 2024, employing robust statistical measures including descriptive analytics, normality testing, and bootstrap confidence intervals. The results conclusively demonstrate that price structures in digital collectibles markets are fundamentally shaped by behavioral biases including framing effects, reference dependence, and anchoring that transcend conventional rational market assumptions. The scholarly contribution of this work is threefold: First, it addresses a critical research gap by providing data-driven market analysis in a domain dominated by qualitative and survey-based approaches (Putri et al., 2024; Syifaunisa et al., 2024). Second, it establishes a novel conceptual framework explaining how behavioral patterns generate systematic price distortions in digital marketplace environments. Third, it demonstrates the intricate interconnection between digital platform dynamics and behavioral economic principles in contemporary consumption.



Ultimately, this research establishes that Labubu figure consumption represents a complex socioeconomic phenomenon where traditional supply-demand dynamics are substantially mediated by psychosocial factors including social identity expression, aesthetic valuation, collection psychology, and digital community influences. The study provides compelling empirical evidence that behavioral patterns specifically FOMO, herding, and symbolic consumption significantly distort equilibrium pricing in digital marketplaces. By integrating behavioral economics theory with empirical market data, this investigation offers an innovative

analytical framework for understanding price anomalies in collectibles markets while establishing a foundation for future research employing micro-level data analytics and experimental methodologies.

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