

Exploring Customer Delight and Loyalty in Blind Box Consumers: A Multi-Group SOR Model Analysis of China's First-Tier Cities

Xiulan Yang^{1,2}, Ing Grace Phang^{1, *}

¹University Malaysia Sabah, Faculty of Business, Economics and Accountancy, Kota Kinabalu, Malaysia

²Xichang University, Sichuan, Xichang, China

Yangxiulan26@hotmail.com, gracep@ums.edu.my (Corresponding author)

Abstract. With the rapid growth of the blind box economy in major Chinese cities, its special way of consumption- based on randomness, scarcity, and strong emotional reactions- is changing how young people think about buying products and how they connect with brands. Traditional satisfaction-loyalty models are limited in their ability to explain the heightened emotional intensity and pronounced experiential heterogeneity inherent in blind box consumption. Customer delight has become a key idea to understand how blind box users develop loyalty. As emotional delight is argued to be differed across cultural contexts, four big Chinese cities: Beijing, Shanghai, Guangzhou, and Shenzhen were compared using the Stimulus–Organism–Response (SOR) model to study how blind box experience quality affects customer delight, and how this delight helps build customer loyalty. Purposive sampling method was adopted, and a total of 648 responses were collected and analyzed using multi-group SEM analysis. The results show that better blind box experience quality enhances customer delight, which then turns into repeat purchase, brand preference, and continued participation. The strength of these paths differs across cities with different cultural backgrounds: consumers in Shanghai and Shenzhen care more about limited editions, fine design, and novelty; consumers in Beijing focus more on cultural IP stories and brand values; consumers in Guangzhou pay more attention to atmosphere and overall cost-performance. These findings show the central role of customer delight in surprise-based consumption, which is affected by their cultural backgrounds. The findings offer useful ideas for blind box brands when building city-specific experience strategies and user management systems.

Keywords: Blind box consumption; customer delight; customer loyalty; experience quality; cultural differences

1. Introduction

Blind box industry has grown very fast in China's major cities attributed to the rise of the experience economy and trendy culture. Its special features- random draw, scarcity, and strong emotional excitement- have turned it from a simple retail product into a consumption activity that also carries social meaning, emotional value, and cultural expression. In cities like Beijing, Shanghai, Guangzhou, and Shenzhen, blind box brands use rich commercial spaces, popular IPs, and the high participation of young consumers to build a sustainable emotional consumption ecosystem (Mvondo et al., 2023). The traditional research model that centers on customer satisfaction might not fully explain the strong emotional changes seen in blind box shopping. Satisfaction comes mainly from expectations being met, but the main value of blind box consumption generated from emotional experiences that go beyond expectations. For this reason, customer delight which details surprise, joy, and emotional peaks, has become a better means to understand repeat purchase, information sharing, and brand attachment among blind box consumers (Wei & Yu, 2025).

Individuals living under different cultural contexts are found to react differently to marketing stimulus (Steenkamp, 2019). For a country with a vast population and pronounced regional diversity such as China, people living in different cities are found to portray significantly different preferences and consumption patterns (Li et al., 2022). For instance, people in urban cities are found to emphasize different aspects in product evaluation or purchases than those who stay in rural cities (Chen et al., 2021). Significant shopping preferences were observed within those who stay in different big cities due to cultural environments (Ren & Ma, 2024). China's first-tier cities portray very different cultural styles, consumption values, commercial environments, and lifestyles (Cruz et al., 2025). Their sensitivity to surprise experiences and their emotional reactions are arguably different across cities (Ren & Ma, 2024). This study aims to answer two research questions: Does customer delight in blind box consumption show differences across cities with different cultural backgrounds? and does its effect on loyalty change because of city culture, consumer preferences, and experience settings? This study first examines how blind box experience quality creates customer delight, which further leads to customer loyalty. Further comparison across different cities reveals deeper emotional logic behind the blind box economy. It also provides theoretical support for understanding emotion-driven consumption behaviors and practical ideas for brands to design better experience strategies for different local markets (Xu et al., 2025).

The significance of this study appears in both theory and practice. On the theoretical side, this research brings the idea of customer delight, which focuses on emotional responses beyond expectations, into the blind box consumption setting, where surprise and randomness play a big role. Closing the gap in traditional satisfaction theory which cannot clearly explain emotional peak experiences, blind box consumption as a new type of experience economy creates value not mainly from product function but from uncertainty, rarity, and psychological anticipation during the draw process. Examining customer delight provide a better understanding of emotion-consumption behavior link (Nguyen, 2026). Also, the comparative study across different first-tier cities offers a systematic examination on the influence of cultures, aesthetic preferences, and consumption styles on customer emotions and loyalty. This creates a broader theoretical framework for research on urban and city-level consumption differences (Fan & Wang, 2025).

2. Literature Review

The blind box economy has become one of the most typical emotion-driven markets in China in recent years. Its main attraction comes from a mixed value system built by randomness, scarcity, and strong IP stories. Many studies confirm that the "random surprise" in blind boxes brings a sense of expectation through uncertainty. Consumers experience stronger emotional changes during the draw, which the emotional peak is very different from common retail experiences. Scarcity design and the

chance of hidden items enhance expectation. The moment of “opening the box” becomes a continuous source of emotional excitement, not just a simple buying action (Huang, 2025). Furthermore, strong IP building and cross-industry collaborations enhance cultural meaning and self-expression value. Consumers, especially those of younger age, could feel a strong sense of identity and are more willing to share their experiences socially, as blind box consumption aligns closely with their desire for novelty, identity expression, social interaction, and emotional stimulation, which motivates both repeated purchasing and active social sharing behaviors (Wei & Yu, 2025).

Different city cultures, aesthetic style, social preference, and consumption motives could change the way customer delight is triggered. These emotional differences then influence consumer loyalty. Existing research often agrees that blind box consumption has moved from material consumption to a mixture of experience consumption and identity expression (Lee et al., 2025). Although ample studies discuss motivations, product design, and consumer psychology, most research focuses on a single city or on general samples. Few studies examine how consumers' experience structures differ attributed to culture, aesthetic taste, and consumption environment (Wu & Zhang, 2022). In China, Shanghaiese are known to opt for delicate and themed immersive experiences, while the Pekinese prefer cultural elements and IP storytelling. Southern consumers like Cantonese on the other hand, like social experiences and value-for-money feelings; and consumers in Shenzhen are more attracted to technology and new interactive ideas (Ren & Ma, 2024). These differences quietly shape how blind box experience value is formed, and they may also lead to different roles of customer delight play in affecting customer loyalty (Xu et al., 2024). Unfortunately, the existing research still lacks cross-city comparison and deeper discussion of emotional mechanisms. There is also a lack of a systematic framework to explain how blind box experience factors, consumer psychology, and city culture work together. It is deemed necessary to build a suitable framework for blind box experience consumption and to study how emotional experiences, especially customer delight, work in different city cultures. City culture theory emphasizes that cities are not merely geographic units but culturally embedded environments that shape residents' values, lifestyles, aesthetic orientations, and consumption practices (Florida, 2004; Kotler et al., 2017). Prior urban consumption research suggests that differences in cultural atmosphere, lifestyle pace, symbolic meaning, and value perception across cities systematically influence how consumers interpret market stimuli and form emotional and behavioral responses. From this perspective, city culture functions as a contextual force that conditions consumers' cognitive and affective processing rather than as a direct causal driver of behavior. In experience-based consumption settings, cultural contexts are particularly influential because emotional reactions are shaped not only by product attributes but also by culturally grounded expectations and value systems. Consumers living in cities with different aesthetic norms, social rhythms, and identity orientations may therefore respond differently to identical experiential stimuli, leading to variations in emotional intensity and behavioral outcomes. Accordingly, city culture has been increasingly conceptualized as a moderating variable that alters the strength of relationships among experience, emotion, and behavior, rather than as an independent predictor (Steenkamp, 2019). Drawing on this theoretical view, the present study treats city culture as a higher-order contextual moderator that reflects variations in aesthetic preference, lifestyle pace, cultural identity, and consumption values across urban environments. This conceptualization provides a theoretical basis for examining how emotion-driven loyalty mechanisms in blind box consumption differ across cities, and it justifies the use of multi-group analysis to capture culturally contingent path relationships (Zahari, 2026).

3. Customer Satisfaction, Customer Delight, and Their Behavioral Outcomes

Customer satisfaction and customer delight are two related but fundamentally different constructs. Customer satisfaction is experienced when a consumer's expectation meets his/her actual experience

(Liu et al., 2024), which results in a positive feeling of contentment. It's essentially a baseline experience where the customer's needs or desires have been fulfilled, but it doesn't necessarily surpass expectations. Customer delight on the other hand, comes from experiences that go beyond expectation. This unexpected bonus makes delight more intense because it triggers a stronger emotional response. Delight is argued to have a longer and bigger effect on loyalty. Many studies in services, retail, and entertainment show that when consumers get an experience that is much better than expected, this delight not only brings short happiness but also leads to long-term repeat purchase, active word-of-mouth, and deep emotional attachment to the brand. These outcomes are usually stronger than those caused by satisfaction alone.

In blind box consumption, this emotional mechanism is even more obvious. The concept behind blind boxes is rooted in elements of randomness, scarcity, and probability. These factors contribute to a heightened emotional response during the unboxing experience, which is significantly more intense compared to traditional retail interactions. When consumers acquire a hidden item or a specific intellectual property (IP) series in a blind box, the experience often surpasses their expectations, resulting in distinct delight. In blind box shopping, expectation is not solely based on product function or quality, but also incorporates elements like probability, scarcity, IP narratives, and community engagement (Sun et al., 2024). Perceived value in this context encompasses not only material value but also emotional, collectible, and social value. Delight, therefore, becomes a critical variable in explaining consumer outcomes in blind box consumption. Despite its significance, existing research on blind boxes predominantly focuses on satisfaction, overlooking how delight is generated through random surprises, its impact on customer loyalty, or how this effect varies across different cultural contexts. Consequently, positioning delight as a higher-order emotional construct in blind box research, thus offering a more comprehensive understanding of emotion-driven behaviors in this emerging market.

4. Consumer Loyalty and City Cultural Differences

In marketing research, consumer loyalty is usually seen as having two parts: behavioral loyalty and attitudinal loyalty. Behavioral loyalty means stable repeat purchase and purchase frequency, while attitudinal loyalty includes emotional attachment, brand preference, and deep psychological commitment to the brand (Tang et al., 2024). The formation of loyalty is influenced not only by consumer experience and perceived value but also by the social and cultural environment. City characteristics and cultural factors can change consumers' preferences, experiences, and value judgment. These changes can strengthen or weaken brand value and then influence loyalty.

City culture functions not merely as a background condition but as an active contextual force shaping consumer cognition and behavior. Prior urban and consumption studies suggest that city-level characteristics- such as cultural attractiveness, symbolic uniqueness, diversity, educational composition, and social welfare conditions- systematically influence how consumers evaluate value and form loyalty relationships (Wu & Zhang, 2022). These dimensions affect consumers' value judgment processes and contribute to pronounced regional differences in loyalty formation across cities. Based on city culture and urban consumption theories, variations in cultural atmosphere, aesthetic norms, and lifestyle pace across cities can significantly alter how consumers interpret brand experiences and respond emotionally to consumption stimuli (Wang, 2020). Empirical research in the Chinese context further indicates that consumers in different first-tier cities exhibit distinct experiential preferences and evaluative criteria. Building on the previously discussed city-level consumption characteristics, this study treats city culture as a higher-order contextual force rather than a set of discrete urban labels. Differences in aesthetic preference, symbolic consumption orientation, innovation sensitivity, and value-for-money considerations collectively shape consumers' emotional responses to blind box experiences. Accordingly, city culture is expected to moderate both the formation of customer delight and its conversion into loyalty, not through isolated city identities, but

through underlying cultural and experiential logics. (Ma, 2024). These city-level differences shape brand preference, brand experience perception, and loyalty formation through differentiated psychological mechanisms, which is consistent with the “city characteristic-brand value-brand loyalty” framework proposed in urban marketing research (Ma, 2024). In the context of blind box consumption, the influence of city culture becomes even more salient. Existing studies show that the core value of blind boxes derives not only from product attributes but also from consumers’ emotional responses to randomness, scarcity, IP storytelling, and ritualized opening experiences (Wei & Yu, 2025). Given that consumers in different city cultures display varying sensitivity to uncertainty, surprise, and symbolic consumption elements, the effectiveness with which customer delight translates into loyalty is likely to differ across urban contexts (Xia et al., 2025). However, existing research rarely examines this interactive relationship systematically, and comparative evidence across China’s major first-tier cities remains limited. Therefore, incorporating city culture as a key moderating variable in the research model is necessary to explain why blind box consumers exhibit divergent loyalty patterns when delight is triggered under different cultural backgrounds.

5. Research Model and Research Hypotheses

Based on the city culture perspective discussed in the literature review, the present study further incorporates city culture as a contextual moderator in the proposed S - O - R framework. The theoretical model of this study is primarily grounded in the Stimulus-Organism-Response (S-O-R) framework and experience value theory. The S-O-R model posits that external environmental stimuli influence individuals’ internal psychological and emotional states (organism), which subsequently shape their behavioral responses (Mehrabian & Russell, 1974). This theoretical structure has been widely adopted in consumer behavior and marketing research to explain how experiential stimuli evoke emotional reactions and lead to approach or avoidance behaviors (Vieira, 2013).

In experience-based consumption contexts, the S-O-R framework provides a robust analytical lens for understanding how experiential cues- such as design, atmosphere, uncertainty, and symbolic meaning- trigger consumers’ affective responses and subsequently influence behavioral outcomes, including purchase intention, participation, and loyalty (Jang & Namkung, 2009). Accordingly, this study applies the S-O-R framework to conceptualize blind box experience quality as the stimulus, customer delight as the organism-level emotional response, and consumer loyalty as the behavioral outcome.

In the blind box context, experience quality is a multidimensional construct encompassing product design refinement, scarcity mechanisms, IP storytelling, immersive store atmosphere, ritualized opening experiences, and the additional excitement generated through social sharing (Xia et al., 2025). These experiential elements jointly form the primary external stimuli perceived by consumers. Customer delight represents a peak emotional response arising from experiences that exceed expectations and is characterized by high emotional intensity and lasting psychological impact. Consumer loyalty reflects the final behavioral response, including repeat purchase intention, continued participation, and voluntary word-of-mouth behavior.

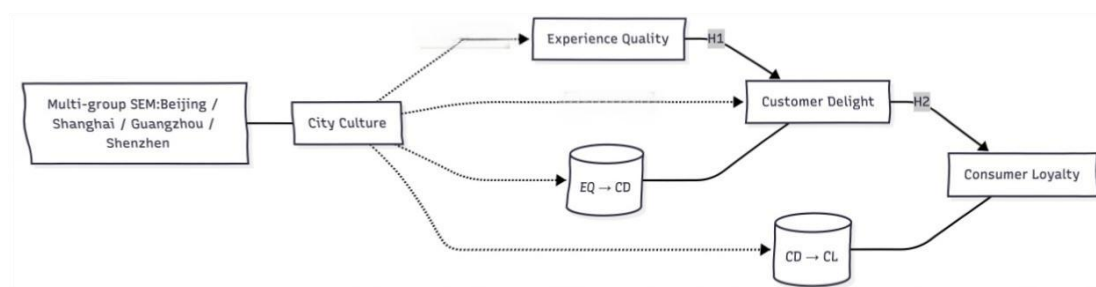


Fig.1: S - O - R Emotion-Driven Loyalty Model with City Culture as a Moderating Context

Figure 1 presents the conceptual framework of this study. Building upon the S – O – R model, city culture is explicitly incorporated as a moderating contextual variable that conditions both the formation of customer delight from experience quality and the subsequent translation of delight into consumer loyalty. Accordingly, H3 and H4 are proposed to capture the moderating role of city culture in the emotion-driven loyalty mechanism. As illustrated in Figure 1, the proposed model draws inspiration from established service quality frameworks in which perceived service quality influences satisfaction and subsequently drives engagement behavior. This logic aligns closely with the S-O-R structure. In the blind box setting, the traditional “service quality-satisfaction-behavior” pathway is reconceptualized as “experience quality (stimulus)- customer delight (organism)- consumer loyalty (response).” Unlike conventional consumption contexts, blind box value is not derived solely from functional or service attributes, but also from emotional peaks generated by randomness, scarcity, surprise, and ritualized consumption processes. Consequently, customer delight is considered a more appropriate emotional variable than satisfaction for explaining behavioral outcomes in this context.

Furthermore, this study incorporates city culture as a key moderating factor. Prior research indicates that Beijing, Shanghai, Guangzhou, and Shenzhen differ significantly in cultural atmosphere, aesthetic orientation, lifestyle characteristics, and consumption motivations (Xia et al., 2025). These differences suggest that consumers across cities may not respond uniformly to experiential elements such as surprise, expectation, scarcity, and ritual, thereby potentially altering the strength of emotional and behavioral relationships. City-level differences are therefore incorporated into a multi-group SEM framework to examine whether the key structural paths vary across cities, forming the basis of the comparative research design (Lin & Ryu, 2023).

Hypothesis Development

According to the S-O-R framework, external stimuli are expected to evoke individuals' internal emotional responses. In blind box consumption, experience quality functions as a critical stimulus that includes design refinement, scarcity mechanisms, immersive environments, IP narratives, and ritualized opening experiences. Due to the inherent uncertainty and randomness of blind boxes, such experiential stimuli tend to heighten emotional arousal and increase the likelihood of affective peaks. When consumers perceive experience quality as exceeding expectations, they are more likely to experience customer delight. Therefore, this study proposes:

H1: Blind box experience quality has a positive effect on customer delight.

Customer delight represents an emotional state that goes beyond satisfaction and is associated with surprise, joy, and strong affective arousal. Emotion-driven consumption theory suggests that such peak emotional experiences exert stronger and more persistent effects on behavioral outcomes than cognitive evaluations alone. In blind box consumption, delight is often triggered by unexpected rewards or successful draws, which enhance emotional attachment to the brand. Prior research consistently supports the positive influence of customer delight on repeat purchase intention, continued participation, and positive word-of-mouth behavior. Accordingly, this study proposes:

H2: Customer delight has a positive effect on consumer loyalty.

City culture provides a broader socio-cultural context that shapes consumers' aesthetic preferences, value perceptions, and emotional sensitivity. Differences in cultural atmosphere, lifestyle pace, and consumption norms across cities may influence how consumers interpret experiential stimuli. For example, Shanghai consumers tend to emphasize refined aesthetics and immersive design, Beijing consumers value cultural symbolism and IP storytelling, Shenzhen consumers prefer innovation and technology-oriented experiences, while Guangzhou consumers focus more on leisure, social interaction, and value-for-money considerations. These differences suggest that the same experience

quality elements may generate varying levels of customer delight across cities. Therefore, this study proposes:

H3: City culture moderates the relationship between blind box experience quality and customer delight.

Beyond shaping emotional responses, city culture may also influence how emotions are translated into behavioral outcomes. The extent to which customer delight leads to consumer loyalty may differ across cities due to variations in social norms, identity orientation, and consumption motivations. In cities where symbolic meaning and cultural identity are emphasized, customer delight may more strongly reinforce loyalty, whereas in cities that prioritize social enjoyment or cost - performance, loyalty formation may depend less on emotional peaks alone. Accordingly, this study proposes:

H4: City culture moderates the relationship between customer delight and consumer loyalty.

Taken together, the proposed hypotheses are grounded in the S - O - R framework and emotion-driven consumption theory, while explicitly incorporating city culture as a contextual moderator rather than a simple grouping variable. In blind box consumption, experience quality functions as the primary stimulus that triggers customer delight by generating emotional peaks through randomness, scarcity, design refinement, and symbolic meaning. Consistent with emotion-based loyalty theory, such delight is expected to translate into stronger behavioral and attitudinal loyalty outcomes.

Importantly, this transformation process does not occur uniformly across urban contexts. City culture reflects a constellation of culturally embedded orientations, including aesthetic preference, symbolic consumption tendencies, innovation sensitivity, lifestyle pace, and value perception. These orientations systematically shape how consumers interpret experiential stimuli and how emotional responses are converted into loyalty behaviors. As a result, city culture is theorized to moderate both the formation of customer delight from experience quality and the subsequent translation of delight into consumer loyalty. Rather than attributing differences to specific cities per se, this study conceptualizes city culture as an underlying mechanism that conditions the strength of emotion-driven loyalty pathways in blind box consumption.

6. Research Methodology

The questionnaire used in this study was developed based on well-established measurement scales from prior research and was carefully adapted to fit the blind box consumption context in China. The overall research design adopts a quantitative survey approach to examine the relationships among blind box experience quality, customer delight, and consumer loyalty, as well as the moderating role of city culture. The target population consists of blind box consumers residing in China's four first-tier cities- Beijing, Shanghai, Guangzhou, and Shenzhen- where blind box consumption is most prevalent. A purposive sampling technique was employed to ensure that all respondents had prior experience with blind box purchases. A total of 648 valid responses were collected and used for subsequent analysis. Regarding measurement design, experience quality was operationalized by adapting the SERVQUAL framework to the blind box context. Traditional SERVQUAL dimensions, including tangibles, reliability, responsiveness, assurance, and empathy, were revised to reflect experiential characteristics relevant to blind box consumption, such as design refinement, ritualized opening experience, IP storytelling value, immersive atmosphere, and perceived randomness. These adapted dimensions capture both functional and emotional aspects of the consumption experience. Customer delight was measured using items adapted from the classic delight scales developed by Oliver and Finn (2005), with modifications incorporating blind box- specific emotional elements such as surprise intensity, emotional peaks at the opening moment, and experiences beyond expectations. Consumer

loyalty was measured based on Zeithaml's loyalty framework (1996), covering repeat purchase intention, continued participation, and word-of-mouth behavior. City culture was incorporated as a moderating variable to capture urban-level differences in consumption context. Drawing on city culture theory as discussed in the literature review, this construct reflects variations in aesthetic preference, lifestyle pace, cultural identity, and consumption values across cities. All variables, their dimensions, and measurement items are summarized in Table 1. The collected data were analyzed using structural equation modeling (SEM) and multi-group analysis to test both the direct relationships among key constructs and the moderating effects of city culture across different cities, technology preference, and social atmosphere. These build a unique structure for the moderating variable, and examples of the items appear in Table 1.

Table 1. Measurement Variables, Dimensions, and Scale Sources

Variable	Dimensions	Example Items (Partial)	Scale Source and Revision Notes
Experienced Quality (Stimulus)	Design refinement, randomness experience, IP storytelling, immersive scene, opening ritual	“The design of the blind box looks delicate to me.” / “The draw process feels exciting.” / “The store atmosphere increases my expectation when opening the box.”	Based on SERVQUAL (Parasuraman, 1988), revised with emotional triggers of blind box experiences
Customer Delight (Organism)	Surprise, beyond-expectation emotion, emotional peak	“The opening moment gives me a strong surprise.” / “The blind box experience is beyond my expectations.”	Based on Oliver (1997), Finn (2005), revised for context
Loyalty (Response)	Repeat purchase, ongoing participation, word-of-mouth	“I am willing to continue buying this brand's blind boxes.” / “I will recommend my favorite series to others.”	Based on Zeithaml (1996), adjusted for blind box behavior
City Cultural Differences (Moderator)	Aesthetic preference, lifestyle pace, cultural identity, technology preference, social atmosphere	“The cultural atmosphere of my city influences how I feel about blind box experiences.”	Based on city culture theory (Florida, 2004; Kotler, 2017), revised for first-tier cities
Control Variables	Gender, age, monthly income, blind box purchase frequency	-	Common demographic controls

The meaning consistency of questionnaire items was checked using a “translation–back translation–context correction” process to ensure that the Chinese and English versions matched in meaning and concept. After that, three experts in consumer behavior and experience management reviewed the items to confirm that all constructs in Table 1 were complete and clearly expressed.

Before the main study, a pretest was conducted with 30 blind box consumers in Beijing and Shanghai. The pretest examined how well the items in Table 1 were understood, whether they were easy to answer, whether the logic was smooth, and whether they matched the blind box setting. Based on feedback, we made small wording changes to some items so that they fit young consumers' language habits better. For example, items related to “perceived value” were changed into more emotional expressions.

The final questionnaire uses a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). This supports continuous variable analysis and statistical testing. After data collection, confirmatory factor analysis (CFA) will be used to test the structure validity of the scales in Table 2. This includes

factor loadings, average variance extracted (AVE), and composite reliability (CR). These steps ensure the model fit and reliability of all measurement variables. In short, Table 1 not only shows the sources and structure of each variable but also provides the foundation for the empirical analysis.

To align with the typical blind box consumer profile, purposive sampling was employed by targeting young consumers aged 18-35. This age group represents the most active segment in the blind box market, characterized by higher purchase frequency and stronger engagement levels. A total of 648 valid responses was collected: 162 from Beijing, 168 from Shanghai, 156 from Guangzhou, and 162 from Shenzhen. The sample sizes across cities are balanced and suitable for multi-group SEM comparison. The data for this study come from both online and offline channels to ensure wide coverage and sample diversity. Online data were collected through Wenjuanxing and social media platforms such as WeChat groups, Douban blind box communities, and other city-interest groups. Offline data were collected in popular shopping areas with many blind box stores, including Beijing Sanlitun, Shanghai Huaihai Road, Guangzhou Tianhe area, and Shenzhen OCT Harbor.

In the full sample, female respondents accounted for about 68.1%, and males accounted for 31.9%, which represent the real blind box market. In terms of age, 54.9% were between 18–25, 28.7% were between 26–30, and 16.4% were between 31–35, showing a strong youth trend. For purchase frequency, 33.2% bought blind boxes 1–2 times per month, 41.6% bought 3–5 times per month, and 12.4% bought more than 6 times per month, indicating high purchase activity. City differences also appeared:

Statistical evidence supports the observed cross-city differences in consumption preferences. The multi-group SEM results indicate that the experiential attributes related to cultural IP and design refinement exert a significantly stronger effect on customer delight among consumers in Beijing and Shanghai than among those in Guangzhou, as reflected by higher path coefficients and a significant chi-square difference test ($\Delta \chi^2$, $p < 0.05$). In contrast, innovation-oriented and technology-related experiential elements show significantly stronger effects for Shenzhen consumers, indicating a higher preference for technology-driven and collaborative blind box series. For Guangzhou consumers, the relationship between emotional experience and repeat-purchase intention is comparatively more stable but less driven by specific experiential attributes, suggesting a more balanced preference structure and a stronger reliance on habitual repeat-purchase behavior. These differences are statistically significant, providing robust empirical support for heterogeneous consumption patterns across cities.

These differences match each city's cultural features and confirm the sample's representativeness. Overall, the samples from the four cities are balanced and show realistic characteristics of the blind box consumer group. This provides a solid foundation for cross-city model comparison.

This study uses Structural Equation Modeling (SEM) to test the relationships among experience quality, customer delight, and loyalty. Multi-group SEM is used to compare how the path coefficients differ across cities. Reliability and validity of the measurement scales were examined prior to hypothesis testing. Internal consistency reliability was assessed using Cronbach's α , with values above 0.70 indicating acceptable reliability. All constructs in this study met this criterion, demonstrating satisfactory internal consistency. Construct validity was evaluated through confirmatory factor analysis (CFA). Convergent validity was assessed using Average Variance Extracted (AVE) and Composite Reliability (CR). AVE values exceeding 0.50 indicate adequate convergent validity, while CR values above 0.70 reflect good construct reliability. The results show that all constructs achieved acceptable AVE and CR values, confirming adequate convergent validity. Discriminant validity was further supported by comparing the square roots of AVE with inter-construct correlations, indicating that each construct was empirically distinct. During model testing, SEM is used to estimate both path relationships and latent structures at the same time, using Maximum Likelihood Estimation (MLE). Model fit is evaluated through indices such as χ^2/df , CFI, TLI, and RMSEA.

Finally, Multi-Group SEM (MGCFA) is used to test city-level differences in the path coefficients for Beijing, Shanghai, Guangzhou, and Shenzhen. By comparing configural invariance, loading invariance, and structural path invariance models, we test whether city culture moderates the “experience quality → delight” and “delight → loyalty” paths. When the chi-square difference ($\Delta\chi^2$) between restricted and unrestricted models is significant ($p < 0.05$), it indicates meaningful differences across cities. The use of MGCFA not only tests emotional mechanism differences between cities but also provides strong statistical support for the theoretical contributions of the study.

7. Empirical Results

Before running the structural equation model, this study first carried out descriptive statistics and correlation tests for the main research variables. The results are shown in figure 2. The mean values of blind box experience quality, customer delight, and consumer loyalty are 3.84, 3.92, and 3.76. All of them are higher than the midpoint of the scale (3). This shows that most blind box consumers give a positive evaluation of the experience value.

The standard deviation of customer delight is relatively higher ($SD = 0.91$). This means there is a larger difference between consumers in “level of surprise” and “emotional peak.” This fits the random and uncertain nature of blind box experiences. The correlation matrix shows that the correlation between experience quality and customer delight is 0.63 ($p < 0.01$), between customer delight and loyalty is 0.58 ($p < 0.01$), and between experience quality and loyalty is 0.52 ($p < 0.01$). These results give a good statistical base for later path analysis.



Fig.2: Descriptive Statistics and Correlation Matrix (N = 648)

After confirming that the variables have the expected correlation structure, this study tested the reliability and validity of the measurement model. The results are shown in figure 3. All latent variables have Cronbach's α above 0.85, which indicates good internal consistency. Composite reliability (CR) is between 0.86 and 0.92, higher than the common standard of 0.70. Average

Variance Extracted (AVE) values are between 0.54 and 0.69, which is higher than the threshold of 0.50 and shows good convergent validity. In addition, the square root of AVE for each latent variable is larger than its correlations with other latent variables. This means the model also has good discriminant validity.

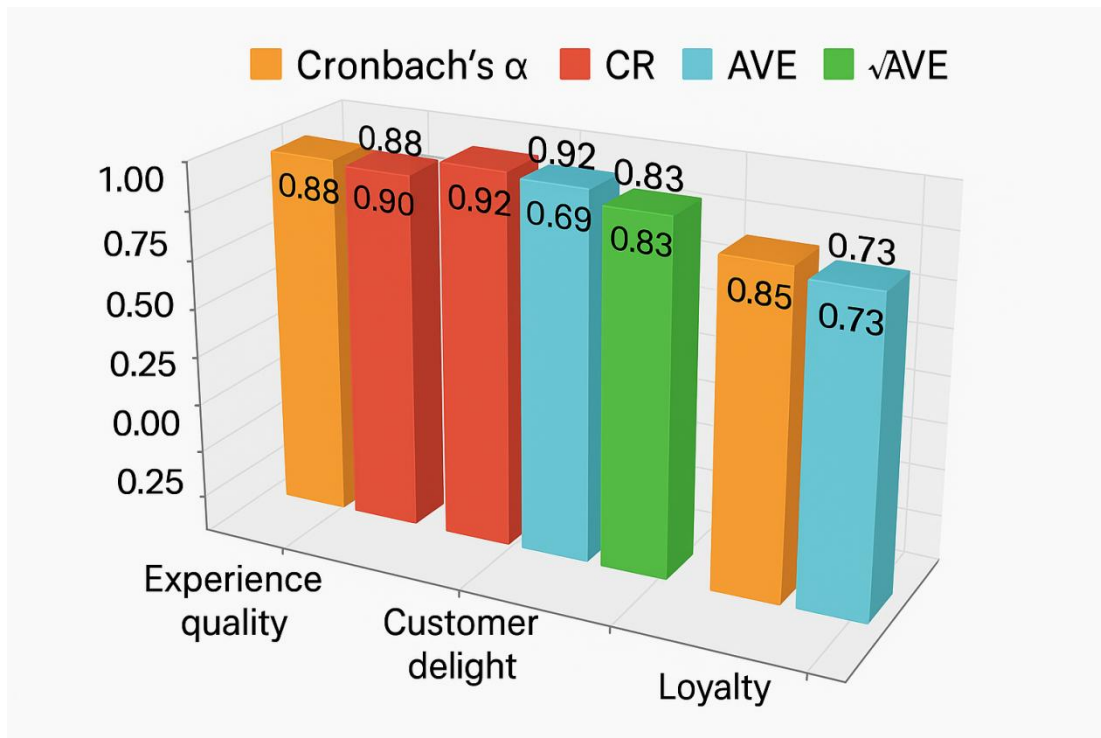


Fig.3: Reliability and Validity of the Measurement Model

This study also used Confirmatory Factor Analysis (CFA) to further check the structure fit of the measurement model. The model fit indices are: $\chi^2/df = 2.31$, CFI = 0.953, TLI = 0.946, and RMSEA = 0.046. All of them meet the common international standards for good model fit ($\chi^2/df < 3$, CFI/TLI > 0.90, RMSEA < 0.08). These results show that the model structure is reasonable and that each latent variable has a stable relationship with its measurement items. In general, based on Figure 1 and Figure 2, the scales used in this study show good reliability, validity, and model fit. They can support the following cross-city multi-group SEM analysis.

After confirming the quality of the measurement model, this study used SEM to test the main path relationships among experience quality, customer delight, and consumer loyalty. The overall model has good fit ($\chi^2/df = 2.47$, CFI = 0.951, TLI = 0.944, RMSEA = 0.049). All indices meet international standards and show that the model is suitable for path testing. The path results for the full sample are shown in Figure 4. Experience quality has a significant positive effect on customer delight ($\beta = 0.62$, $p < 0.001$). Customer delight also has a strong positive effect on loyalty ($\beta = 0.57$, $p < 0.001$). In addition, the direct effect of experience quality on loyalty is also significant ($\beta = 0.28$, $p < 0.01$). This means that customer delight plays a partial mediating role between experience quality and loyalty.

These main path results match the S–O–R theory. They show that peak emotional experiences in blind box consumption are an important psychological mechanism behind loyalty behavior.

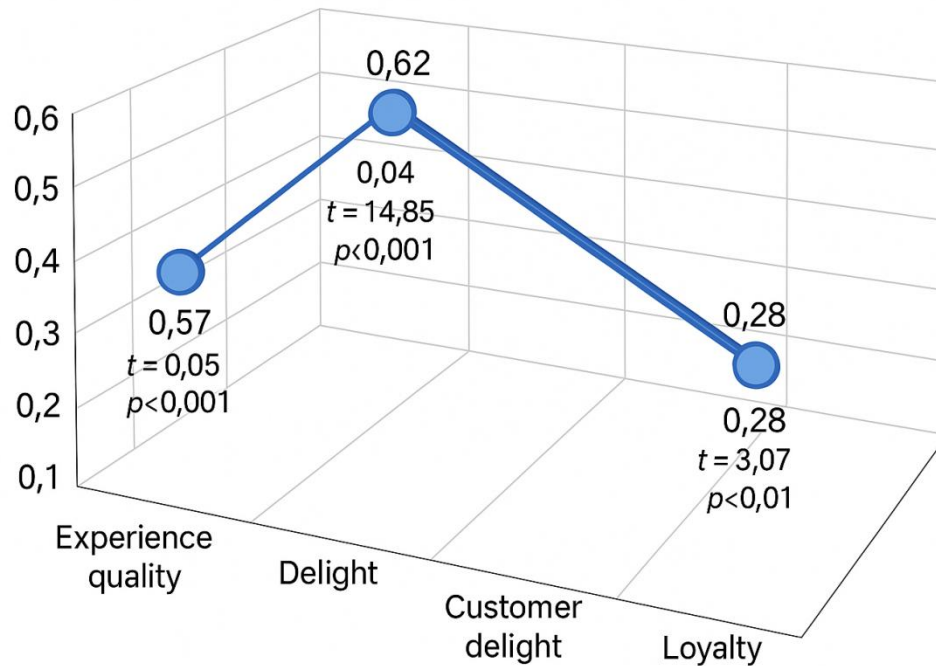


Fig.4: Overall SEM Path Coefficients and Significance (N = 648)

After confirming the overall model, this study used Multi-group SEM to test differences in path strength across the four first-tier cities. We compared an unconstrained model with path-constrained models using chi-square difference tests ($\Delta\chi^2$) to see whether city culture significantly moderates the key paths. The results are shown in Figure 5.

For the path “experience quality → customer delight,” the coefficients for Shanghai ($\beta = 0.71$) and Shenzhen ($\beta = 0.68$) are higher than those for Beijing ($\beta = 0.55$) and Guangzhou ($\beta = 0.49$). The chi-square difference is significant ($\Delta\chi^2 = 18.32$, $p < 0.01$). This means that design refinement, novelty, and scarcity have stronger emotional effects on consumers in Shanghai and Shenzhen. Although the coefficient in Beijing is lower, interview data show that Beijing consumers rely more on “cultural collaboration series” to feel emotional satisfaction, which reflects the high importance of cultural identity there. Guangzhou has the lowest path coefficient. One reason is that consumers there pay more attention to value-for-money experiences, and another reason is that they are less sensitive to “surprise mechanisms.”

For the path “customer delight → loyalty,” all four cities show significant positive relationships, but the strength is different. Shenzhen ($\beta = 0.63$) and Beijing ($\beta = 0.61$) have higher conversion efficiency from emotion to loyalty. Shanghai is slightly lower ($\beta = 0.56$), and Guangzhou is the lowest ($\beta = 0.49$). The chi-square difference is significant ($\Delta\chi^2 = 11.27$, $p < 0.05$), which shows that city culture plays a key moderating role in the emotion–behavior process. In Beijing, cultural identity is very important. Once delight is triggered, loyalty increases more strongly. In Shenzhen, the innovative atmosphere makes people more willing to keep participating after emotional stimulation. In Guangzhou, because consumers care more about social interaction and value-for-money, they rely less on emotion when forming loyalty.

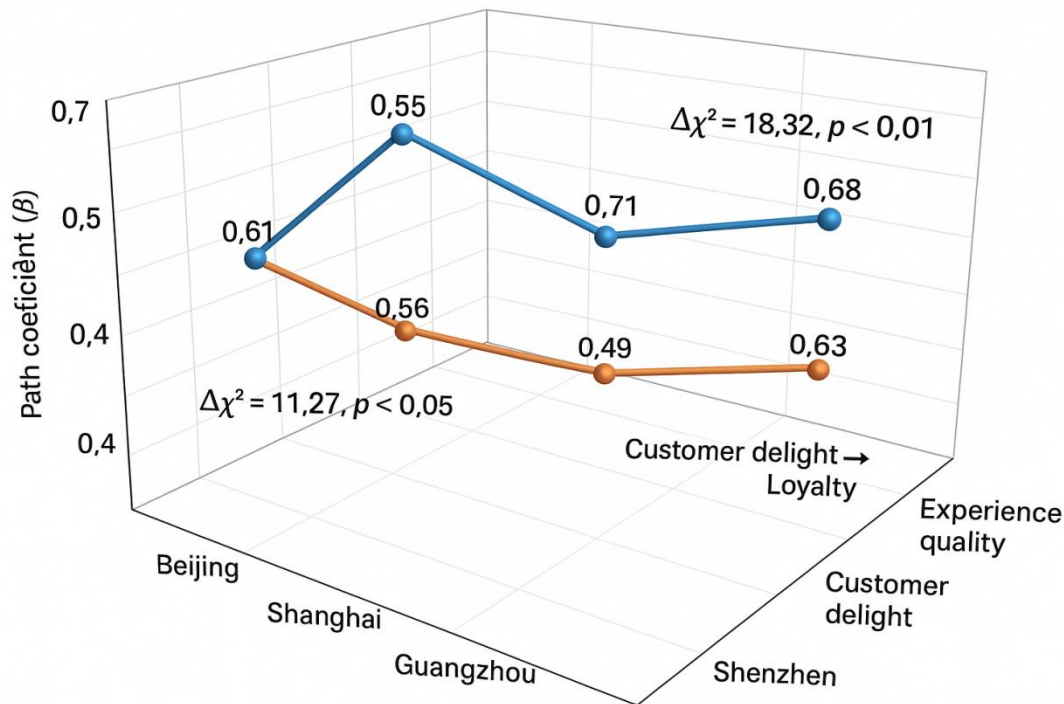


Fig.5: Path Coefficients and $\Delta \chi^2$ Tests for the Four Cities

In conclusion, the overall SEM and the multi-group comparison show that the basic paths from experience quality to delight and from delight to loyalty are significant in all four cities. However, the strength of these paths is clearly different because of city culture and local consumption features. Consumers in Shanghai and Shenzhen are more driven by “design value” and “scarcity.” Consumers in Beijing are more influenced by cultural storytelling. Consumers in Guangzhou focus more on comfort and value-for-money on the overall experience. These differences support the moderating hypotheses about city culture proposed in this study. They also show that blind box brands need differentiated experience strategies in different cities to better use emotional mechanisms to build loyalty.

8. Discussion and Implications

The empirical results of this study confirm that customer delight plays a central role in blind box consumption. By integrating theoretical analysis with structural equation modeling (SEM), the study provides robust evidence for emotion-driven consumption behavior in a surprise-based consumption context. Overall, the SEM results indicate that both hypothesized paths- “experience quality → customer delight” and “customer delight → consumer loyalty” - are statistically significant, providing empirical support for the proposed theoretical model. Specifically, H1 is supported, as blind box experience quality is found to have a significant positive effect on customer delight. This result is consistent with the S-O-R framework, which suggests that external experiential stimuli trigger internal emotional reactions. In line with prior studies on experience-based and uncertainty-driven consumption, elements such as refined design, scarcity mechanisms, immersive environments, and ritualized opening experiences effectively generate emotional peaks and feelings of surprise (Lee et al., 2025). Compared with traditional retail contexts, where satisfaction is primarily derived from functional performance or service efficiency, blind box consumption relies more heavily on randomness and symbolic meaning, making customer delight a more salient emotional outcome.

The results also provide strong support for H2, indicating that customer delight has a significant positive effect on consumer loyalty. This finding aligns with previous research suggesting that delight, as a high-arousal positive emotion, exerts stronger and more enduring influences on behavioral outcomes than satisfaction alone (Huang, 2024). In the blind box context, delight not only reflects momentary emotional reactions but also functions as a powerful psychological driver of repeat purchase intention, continued participation, and positive word-of-mouth. This supports Peak Experience Theory and extends existing loyalty research by demonstrating the mediating role of delight in a consumption environment characterized by uncertainty and emotional intensity.

Furthermore, the analysis confirms the moderating effect of city culture, providing partial support for H3. The strength of the relationship between experience quality and customer delight varies across cities, suggesting that consumers' emotional responses to blind box experiences are shaped by localized cultural environments. This result is consistent with urban consumption and cultural context literature, which emphasizes that cultural atmosphere, aesthetic orientation, and lifestyle differences influence how experiential stimuli are perceived and emotionally evaluated (Ren & Ma, 2024). By empirically demonstrating cross-city variation within China's first-tier cities, this study extends prior research that has largely treated urban consumers as a homogeneous group. Overall, these findings highlight the unique emotional mechanism underlying blind box consumption and confirm that customer delight serves as a key mediating construct linking experience quality and loyalty. By validating the S-O-R framework and Peak Experience Theory in a novel consumption context, this study contributes to a deeper understanding of emotion-driven loyalty formation in experience-based and surprise-oriented markets.

The cross-city comparison provides deeper theoretical insights by situating the present findings within existing research on blind box consumption and emotion-driven loyalty. Consistent with prior studies that emphasize the central role of surprise, design novelty, and scarcity in generating positive emotional responses (Lee et al., 2025; Wei & Yu, 2025), this study confirms that customer delight is a key driver of loyalty across different urban contexts. However, unlike previous research that often treats urban consumers as a relatively homogeneous group, the multi-group SEM results reveal that the strength of emotion – behavior pathways varies systematically across cities.

Specifically, the stronger effect of experience quality on customer delight observed in Shanghai and Shenzhen aligns with earlier findings highlighting the importance of refined aesthetics, innovation, and novelty in metropolitan consumption environments (Ren & Ma, 2024). Meanwhile, the more pronounced conversion from delight to loyalty among Beijing consumers extends prior research on symbolic consumption and cultural identity by showing that narrative-based IP value strengthens emotional bonding beyond immediate experiential pleasure. In contrast, the comparatively weaker, though still significant, role of delight in shaping loyalty among Guangzhou consumers echoes studies emphasizing value-for-money and leisure-oriented consumption patterns, where habitual purchase behavior relies less on emotional peaks alone (Wu & Zhang, 2022).

Overall, compared with existing studies that focus primarily on single-city samples or general consumer groups, this study advances the literature by demonstrating that emotion-driven loyalty mechanisms in blind box consumption are culturally contingent rather than structurally uniform. The findings suggest that blind box consumption operates within a dynamic interaction system between city culture and emotional response, thereby extending current theories of experience-based consumption by explicitly incorporating urban cultural heterogeneity.

On the theoretical side, this study has at least three contributions. First, from a theoretical perspective, it extends customer delight theory by introducing it into the blind box consumption context, which is strongly characterized by random surprise. This extends delight theory in the field of experience economy and shows that delight is not only important in services and entertainment but also has a decisive role in consumption systems built around surprise mechanisms. Second, it

introduces city culture into the loyalty path model and uses multi-group SEM to verify the moderating effect of cultural differences on emotional mechanisms. In this way, the study proposes a “emotion × city culture” dual explanation framework, which offers a new link between consumer psychology and cultural marketing research. Third, by building a cross-city model that covers Beijing, Shanghai, Guangzhou, and Shenzhen, the study is one of the first to systematically explain the heterogeneity of blind box emotional mechanisms from a cross-city view. It fills the gap of lacking regional comparison in blind box research and offers a theoretical and methodological base that other studies can follow.

In sum, this study not only reveals the key emotional mechanism that drives loyalty in blind box consumption but also expands the scope of customer delight theory through cross-city comparison. It provides a new and useful theoretical addition to the field of experience consumption.

Based on the empirical findings, blind box companies should take city culture and local consumption preferences seriously when they design market strategies. They need to match emotional trigger points with brand strategies in each city, so that they can maximize customer delight and then increase loyalty. In cities such as Shanghai and Shenzhen, where people care a lot about refined experience and innovative atmosphere, brands should keep improving product design quality and scarcity mechanisms. Limited editions, artist collaborations, and technology-enhanced interactions (for example, AR-based opening experiences) can help build clear emotional peaks. These designs fit local consumers' high sensitivity to “novelty” and “aesthetics.”

In Beijing, which has strong cultural symbolism, brands should focus more on deep IP storytelling and cultural meaning. They can connect the opening scene with city events, historical symbols, or cultural exhibitions. In this way, they strengthen cultural identity and the sense of ritual, making it easier for delight to turn into long-term emotional bonding.

In Guangzhou, where people prefer relaxed and value-for-money experiences, brands should pay more attention to pricing strategies and to building a light and enjoyable offline social atmosphere. Community-style activities such as “random social interaction,” “swap zones,” or “group opening areas” can increase participation. In such a daily and friendly atmosphere, delight can be triggered more naturally, and the psychological threshold for emotional activation becomes lower.

This study also shows that the effect of customer delight on loyalty is quite stable across cities. Therefore, blind box brands can treat “emotion management” as a core strategy at the national level. By keeping a unified opening ritual, emotional storytelling, continuous IP updates, and a consistent visual system, brands can create memorable delight moments that are easy to share and reinforce. Digital tools can further support this process. For example, apps, membership systems, and online communities can connect purchase behavior, emotional preferences, and city events. This helps form a closed-loop experience between online and offline emotional touchpoints and strengthens ongoing participation and emotional attachment to the brand. Overall, city culture is not just a passive background. It is an active environment that shapes how consumers understand and feel blind box experiences. If brands design experiences in a detailed and city-specific way, they can improve the efficiency of triggering delight and make emotional peaks more likely to turn into loyal behavior. This city-culture-based strategy view can help blind box brands build more differentiated, sustainable, and regionally competitive market layouts.

9. Limitations and Future Research Directions

Although this study systematically explains the mechanism among blind box experience quality, customer delight, and loyalty, and shows how city culture changes the strength of the paths, there are still some limitations. Firstly, the samples are mainly from four first-tier cities: Beijing, Shanghai, Guangzhou, and Shenzhen. These cities are representative, but they do not cover the full city structure of China. New first-tier cities, second-tier cities, and lower-tier markets may have different lifestyles,

consumption mindsets, and cultural preferences (Wu & Zhang, 2022). Future studies can include these regions to improve external validity.

Secondly, this study uses cross-sectional survey data to infer behavioral paths. However, blind box loyalty is dynamic and involves emotional accumulation over time. Cross-sectional data cannot fully show long-term participation, behavior change, and emotional memory. Future research can use longitudinal designs or experiments to describe the time sequence of emotional mechanisms more accurately. Thirdly, questionnaire measures have natural limits in capturing real emotional intensity. The emotional peak at the opening moment is instant, embodied, and partly non-verbal. Self-report scales can be affected by recall bias and social desirability. Future research can use physiological emotion measures, such as facial expression analysis, eye tracking, or electrodermal activity, to capture more fine-grained emotional changes and better understand the psychological base of delight. Social media text analysis and sentiment mining of user-generated content (UGC) can also serve as useful supplements to reflect emotional flows in natural settings. Finally, the blind box economy is changing fast. Product content, collaboration strategies, community features, and digital play are all evolving. Future research can study differences between blind box brands, the emotional structure of virtual blind boxes and digital collectibles, or the role of algorithmic recommendation and platform mechanisms. These directions can further expand the theoretical boundary of blind box consumption research. In conclusion, although this study has built a relatively complete theoretical and empirical framework, there is still much room for research on blind box emotional mechanisms. Future work that expands regions, innovates methods, and provides deeper emotional description will help push forward our understanding of new emotion-driven consumption and support the continuous development of theories in the experience economy.

10. Conclusion

Based on the Stimulu-Organis-Response (S-O-R) framework and experience value theory, this study empirically examined the relationships among blind box experience quality, customer delight, and consumer loyalty, and further explored cross-city differences using multi-group SEM analysis. The results confirm that experience quality has a significant positive effect on customer delight, and that customer delight serves as a key emotional mechanism driving consumer loyalty in blind box consumption. In addition, the findings demonstrate that the emotion-driven loyalty mechanism varies across China's first-tier cities, indicating that city culture plays an important moderating role in shaping how experiential stimuli are transformed into emotional responses and subsequent loyalty outcomes. Overall, this study validates the core logic of “experience quality → customer delight → loyalty” in a surprise-based consumption context and highlights the culturally contingent nature of emotion-driven consumption. By extending customer delight research to blind box consumption and incorporating city-level cultural differences, this study provides a concise theoretical framework for understanding emotion-based consumption behavior and offers meaningful implications for localized brand strategy development in experience-oriented markets.

References

- Cruz, E. L. L., Ong, A. K. S., & Tomas, D. Q. (2025). Analyzing the causal effects of product uncertainty and product appeal on repurchase intention in blind box toys. *Cogent Business & Management*, 12(1), 2506613.
- Chen, J. (2025). From the Psychological Characteristics of the “Z Era” to Explore the “Blind Box Economy” Benign Development Optimization Plan. *International Journal of Management Science Research*, 8(2), 1-6.
- Fan, L., & Wang, Y. (2023). A study of the factors influencing the generation of consumer buying behavior in blind box marketing. *Applied & Educational Psychology*, 4(2), 56-65.
- Feng, X. (2025). The Loss Aversion Effect in Blind Box Purchases: Why Are Consumers More Willing to Make Additional Purchases?. *Studies in Social Science & Humanities*, 4(2), 58-66.
- Huang, J. (2024). The Impact of Blind Box Economy on Consumer Behavior in Social Media Networks. *Highlights Bus. Econ. Manag*, 41, 613-619.
- Lee, C., Wyllie, J., & Brennan, S. (2025). Eye-opening! Exploring uncertainty marketing through hedonic blind box collectibles. *Journal of Retailing and Consumer Services*, 82, 104127.
- Liu, M., Chen, X., Zhao, X., & Xu, Q. (2024). How Perceived Similarity between Travel Destinations and Hometowns Influences Consumer Experience in Online Travel Blind Boxes: The Mediating Role of the Aha Moment. *Journal of Theoretical and Applied Electronic Commerce Research*, 19(4), 2765-2782.
- Lin, F., & Ryu, K. (2023). How product design affects repurchase intention, eWOM, and museum visit intention: Museum mystery boxes in China. *Journal of Travel & Tourism Marketing*, 40(5), 434-451.
- Mvondo, G. F. N., Jing, F., & Hussain, K. (2023). What's in the box? Investigating the benefits and risks of the blind box selling strategy. *Journal of Retailing and Consumer Services*, 71, 103189.
- Ma, C., Fan, A., Ren, L., & Xu, A. (2025). Modeling customer choice behavior in hotel blind-box consumption. *International Journal of Contemporary Hospitality Management*, 37(7), 2491-2512.
- Nguyen, M. L., & Nguyen, T. C. P. (2026). Understanding Gen Z consumers' experiences in building online social capital with brands on Vietnamese social media platforms: A phenomenological study. *Journal of Logistics, Informatics and Service Science*, 13(2), 157 - 176. <https://doi.org/10.33168/JLISS.2026.0209>.
- Qiu, Z., Chen, S., Law, R., & Zhang, M. (2024). How to utilize the information gap for blind box marketing better: evidence from plane tickets. *Asia Pacific Journal of Tourism Research*, 29(8), 961-978.
- Ren, L., & Ma, C. (2024). Planning the unplannable-How blind box tourism boosts purchase intentions. *Journal of Vacation Marketing*, 30(4), 744-758.
- Sun, J., Wang, Y., Yang, C., Chen, J., Wei, W., Miao, W., ... & Gu, C. (2024). Is there any way to increase consumers' purchase intention regarding surplus food blind-boxes? An exploratory study. *BMC psychology*, 12(1), 103.
- Tang, X., Zhang, Y., & Shao, F. (2025). The effect of blind box product scarcity on consumer impulse purchase intentions: a mediation model based on perceived control. *Current Psychology*, 44(23), 18148-18163.
- Wei, Z., & Yu, B. (2025). Why do you engage in blind box consumption? Exploring the group

interactions and psychological motivations in blind box consumption. *Current Psychology*, 44(18), 15168-15182.

Xu, D., Wu, X., Chen, T., & Pu, W. (2025). Unpacking tourism blind boxes: consumer experiences and purchase drivers?. *Current Issues in Tourism*, 1-17.

Xu, X., Zhuang, Y., & Jackson, J. E. (2024). Investigating the impact of online information provision on the market price of blind box. *Electronic Commerce Research*, 1-38.

Xia, Fangyu, et al. "The effect of doll blind box uncertainty on consumers' irrational consumption behavior: the role of instant gratification, Gambler's fallacy, and perceived scarcity." *BMC psychology* 13.1 (2025): 332.

Xia, F., Xu, Y., Zhang, H., & Yuan, X. (2025). The effect of doll blind box uncertainty on consumers' irrational consumption behavior: the role of instant gratification, Gambler's fallacy, and perceived scarcity. *BMC psychology*, 13(1), 332.

Zahari, M. A. F. B., Wong, C. H., Wolor, C. W., & Suhud, U. (2026). Digital marketing adaptation and consumer engagement in ASEAN: A systematic review of pathways to sustainable economic development. *Journal of Logistics, Informatics and Service Science*, 13(2), 1 - 19. <https://doi.org/10.33168/JLISS.2026.0201>.