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The Influence Of Limited Time Scarcity And Limited Quantity Scarcity On Impulsive Buying Behavior: Evidence From Somethinc × Batman Limited Edition Consumers On Shopee

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Abstract

The growing adoption of e-commerce in Indonesia has encouraged beauty brands to leverage scarcity-based marketing strategies, through both time-limited and quantity-limited promotions, to drive sales on digital platforms. However, which dimension of scarcity more powerfully triggers impulsive purchasing behavior, particularly for limited-edition collaboration products, has not been specifically examined. This study aims to analyze the effect of Limited Time Scarcity (LTS) and Limited Quantity Scarcity (LQS) on Impulsive Buying among consumers of the Somethinc x Batman product on Shopee, both partially and simultaneously. A quantitative research method was employed using a survey with a 5-point Likert scale questionnaire administered to 135 respondents residing in Bandung who had previously purchased the product through Shopee. Data were analyzed using multiple linear regression following validity, reliability, normality, multicollinearity, and heteroscedasticity tests. The results show that LTS has a positive and significant effect on Impulsive Buying (t = 13.043) with a partial contribution of 50%, while LQS also has a positive and significant effect (t = 6.894) with a partial contribution of 18%. Simultaneously, both variables significantly affect Impulsive Buying (F = 147.802; R^2 = 0.691). This study concludes that LTS is the dominant dimension of scarcity in driving Impulsive Buying among consumers of limited-edition collaboration products on e-commerce platforms, with an influence nearly three times greater than LQS.

Keywords: *E-Commerce, Impulsive Buying, Limited Quantity Scarcity, Limited Time Scarcity, Scarcity Marketing.*

Abstrak

Meningkatnya adopsi *e-commerce* di Indonesia telah mendorong merek-merek kecantikan untuk memanfaatkan strategi pemasaran berbasis kelangkaan, baik melalui promosi terbatas waktu maupun terbatas jumlah, guna meningkatkan penjualan di platform digital. Namun, dimensi kelangkaan mana yang lebih kuat dalam memicu perilaku pembelian impulsif (*impulsive buying*), khususnya untuk produk kolaborasi edisi terbatas, belum diteliti secara spesifik. Penelitian ini bertujuan untuk menganalisis pengaruh *Limited Time Scarcity* (LTS) dan *Limited Quantity Scarcity* (LQS) terhadap *Impulsive Buying* di kalangan konsumen produk Somethinc x Batman di Shopee, baik secara parsial maupun simultan. Metode penelitian kuantitatif digunakan dengan survei melalui kuesioner skala Likert 5 poin yang disebarkan kepada 135 responden yang berdomisili di Bandung yang pernah membeli produk tersebut melalui Shopee. Data dianalisis menggunakan regresi linear berganda setelah melalui uji validitas, reliabilitas, normalitas, multikolinearitas, dan heteroskedastisitas. Hasil penelitian menunjukkan bahwa LTS memiliki pengaruh positif dan signifikan terhadap *Impulsive Buying* (t = 13,043) dengan kontribusi parsial sebesar 50%, sementara LQS juga memiliki pengaruh positif dan signifikan (t = 6,894) dengan kontribusi parsial sebesar 18%. Secara simultan, kedua variabel berpengaruh signifikan terhadap *Impulsive Buying* (F = 147,802; R^2 = 0,691). Penelitian ini menyimpulkan bahwa LTS merupakan dimensi kelangkaan yang paling dominan dalam mendorong *Impulsive Buying* di kalangan konsumen produk kolaborasi edisi terbatas pada platform *e-commerce*, dengan pengaruh yang hampir tiga kali lebih besar dibandingkan LQS.

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Kata Kunci: *E-Commerce, Impulsive Buying, Limited Quantity Scarcity, Limited Time Scarcity, Pemasaran Kelangkaan.*

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INTRODUCTION

The consumption of fashion and beauty products has both economic and social importance in society today. Consumers express or define themselves and communicate with others through the products they prefer (Solomon, 2020). In Indonesia, 58% of the population aged 16+ make online purchases weekly, with beauty and personal care e-commerce expenditure reaching USD 4.17 billion (We Are Social & Meltwater, 2025). This digitization has transformed e-commerce platforms into arenas of marketing strategy competition, where rational shopping logic is increasingly displaced by impulsive decisions stimulated by scarcity marketing (Yi et al., 2019; Dhandra, 2020).

Scarcity marketing operates through two primary mechanisms: limited time scarcity (LTS) and limited quantity scarcity (LQS). Aggarwal et al. (2011) demonstrate that artificially created scarcity enhances perceived value and purchase urgency. LTS refers to tight promotional deadlines, while LQS restricts product volume (Fathia et al., 2023). Both tactics have proven capable of increasing psychological arousal and driving rapid, emotion-based decisions (Wu et al., 2020). This dynamic is especially evident in the Indonesian digital economy, where innovation adoption remains low yet market potential is vast, a gap that incentivises local brands to compete aggressively through platform-based marketing tactics rather than product differentiation alone (Muftiadi et al., 2024). However, previous research has predominantly examined these tactics in isolation or within Western/East Asian contexts (Wu et al., 2020; Fathia et al., 2023; Heriyanto et al., 2021; Suwito & Susilowati, 2025). Very few studies have dissected their simultaneous impact on Indonesian e-commerce using local beauty brands.

Somethinc, Indonesia's top local skincare brand (Rp53.2 billion in Q2 2022 sales), intensively deploys both LTS (flash sales) and LQS (limited stock) on Shopee (Compas, 2022; Kompas, 2023). Its Somethinc × Batman limited edition collaboration launched late 2024 combines character exclusivity with scarcity tactics, making it an ideal object for examining how dual scarcity stimuli operate in concert. Accordingly, this study investigates the effect of LTS and LQS on impulsive buying behavior in this context.

CONCEPTUAL FRAMEWORK AND HYPOTHESIS

2.1 Limited Time Scarcity and Impulsive Buying

LTS creates urgency perception by restricting promotional duration (Lamis et al., 2022). The mechanism operates through loss aversion: consumers evaluate potential losses (missing the promotion) as more psychologically impactful than equivalent gains (Kahneman & Tversky, 1979; Cialdini, 2001). In e-commerce, countdown timers and "today only"

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phrases function as external constraints that compress the consideration phase, forcing heuristic decision-making (Gierl et al., 2008; De la Ballina & De la Ballina, 2019). Jang et al. (2015) confirm that time scarcity messages increase purchase interest across product categories, while Song et al. (2021) validate this effect in hospitality and tourism contexts. The temporal boundary's irreversibility once expired, the promotion cannot be retrieved distinguishes LTS from other promotional tactics and explains its potency in overriding rational evaluation (Rodrigues et al., 2021). Therefore:

H_1: Limited time scarcity is positively related to impulsive buying behavior.

2.2 Limited Quantity Scarcity and Impulsive Buying

LQS restricts product volume, creating competition perception and exclusivity (Lamis et al., 2022). Cialdini (2001) identifies scarcity as a core persuasion principle: product value increases with acquisition difficulty. LQS triggers two distinct psychological mechanisms, FOMO (anxiety about being left behind) and desire for uniqueness (differentiation from non-owners), both of which accelerate purchase decisions (Jang et al., 2015). "Only 3 left" labels function as real-time social proof, implying high demand and validating the consumer's own interest (Aggarwal et al., 2011). However, unlike LTS, LQS is cognitively negotiable: consumers may assume restocking, alternative sellers, or future availability, reducing the absolute pressure to act immediately (Wu et al., 2020). Song et al. (2021) demonstrate that quantity scarcity messages increase perceived competition and purchase intention, but their effect size varies by product category and platform context. Therefore:

H_2: Limited quantity scarcity is positively related to impulsive buying behavior.

2.3 Simultaneous Effect and Theoretical Mechanism

According to Commodity Theory (Brock, 1968), product value escalates with unavailability, an effect that translates into scarcity marketing through the operon of Limited Time Scarcity (LTS) as a temporal delay and Limited Quantity Scarcity (LQS) as a quantitative restriction. When applied in digital environments, these dual tactics function as structural commodifications that simultaneously inflate a product's perceived value and distort rational consumer assessment (Roux et al., 2023). This heightened perception of value triggers sudden heuristic urgency and psychological reactance, bypassing cognitive deliberation to avoid potential acquisition loss (Barton et al., 2022). Consequently, the combined presence of LTS and LQS minimizes systematic evaluation and directly drives consumer behavior toward spontaneous, unplanned impulsive buying.

H_3: Limited time scarcity and limited quantity scarcity are simultaneously positively related to impulsive buying behavior.

RESEARCH METHOD

3.1 Sample

The sample comprised 135 individuals (Bandung residents, ages 18–29, recruited via purposive sampling through Google Forms. All participants purchased Somethinc products on Shopee within six months and were exposed to flash sale or limited stock offers. The 18–

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22 age group dominated (83%), reflecting Generation Z's high digital platform retention (Syauqi et al., 2022).

3.2 Measurement and Analysis

To operationalize the constructs, Limited Time Scarcity (LTS) was evaluated using a four-item scale adapted from Lamis et al. (2022), which captures limited time, short duration, time-availability anxiety, and rapid expiration. Similarly, Limited Quantity Scarcity (LQS) utilized a four-item framework from Lamis et al. (2022), assessing limited stock, rapid stock depletion, stock-availability anxiety, and rare availability. Impulsive buying was measured through a six-item scale spanning two dimensions synthesized from Coley and Burgess (1987) and Qureshi et al. (2025): the affective dimension (comprising an irresistible urge to buy, positive buying emotions, and mood management) and the cognitive dimension (encompassing cognitive deliberation, unplanned buying, and a disregard for future consequences).

All measurement items were scored on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). To fulfill the metric assumptions of parametric analysis, the original ordinal data were converted into interval data using the Method of Successive Intervals (MSI). Hypothesis testing was subsequently executed via multiple linear regression analysis using IBM SPSS Statistics 31, after ensuring the data met the classical assumption criteria through normality (Kolmogorov-Smirnov), multicollinearity (Tolerance and VIF), and heteroscedasticity (Glejser) tests.

RESULTS

4.1 Descriptive Analysis

Table 1. Descriptive statistics of Research Variables

Variable - Indicator	Percentage	Category
Limited Time Scarcity	68,2%	High
Limited Quantity Scarcity	69%	High
Impulsive Buying - Affective	71,6%	High
Impulsive Buying - Cognitive	66,3%	Moderate

Within the Limited Time Scarcity (LTS) dimension (average of 68.2%, High category), noticing time-limited promos scores the highest at 71%, while feeling worried when a promo ends scores the lowest at 45%. This exact pattern occurs in the Limited Quantity Scarcity (LQS) dimension (average of 69.07%, High category), where seeing limited stock alerts peaks at 72% but worrying about missing out bottoms out at 49%. Crucially, the mode for both scarcity variables is heavily clustered around scale 3 (Neutral) and scale 4 (Agree). This distribution proves that while e-commerce countdowns and stock alerts are highly effective at catching a shopper's attention, they fail to trigger genuine psychological panic or a widespread sense of urgency across the consumer base.

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When looking at the Impulsive Buying variables, a strong contrast emerges between emotional drives and rational thinking. The Affective Dimension heavily drives behavior with a high score of 71.6%, led by the item measuring the difficulty of resisting a purchase when seeing a promo (74%), with a consistent response mode of scale 4 (Agree). Conversely, the Cognitive Dimension scores lower at 66.3% (Moderate category). The highest cognitive items (69% each) show that consumers often buy without thinking about usefulness, skip comparing products, or purchase suddenly while scrolling, while the lowest item is the rare consideration of future financial impacts (60%, with the majority of responses concentrated between scores of 3 and 4). Synthesizing these findings shows that impulse buying is primarily an emotionally driven choice rather than a complete loss of rational control. Because emotional scores outpace cognitive ones, shoppers are clearly giving in to the immediate excitement of a trendy collaboration. However, the moderate cognitive modes and low scarcity worry levels indicate that consumers do not entirely abandon rational boundaries; instead, they make calculated impulsive decisions that remain financially bounded.

4.2 Instrument Testing and Classical Assumption Tests

Table 2. Summary of Instrument Testing and Classical Assumption Tests

Testing	Result	Description
Validity	r value > r table (0,169)	Valid
Reliability	Cronbach's Alpha X1; X2; Y (0,929; 0,919; 0,971) > 0,60	Reliable
Normality	Asymp Sig. (0,200) > 0,05	Normally distributed
Multicolinearity	Tolerance X1; X2 (0,914; 1,094) > 0,10; VIF X1; X2 (1.000; 1.000) < 10	No multicolinearity
Heteroscedasticity	Sig. X1; X2 (0,186; 0,644) > 0,05	No heteroscedasticity

Preliminary diagnostics validated the measurement scales, with the validity and reliability tests demonstrating that all items and variables met the required thresholds for adequate measurement. Additionally, the regression model complied with all diagnostic requirements, as classical assumption testing verified that the data followed a normal distribution and showed no indications of multicollinearity or heteroscedasticity.

4.3 Structural Model

Table 3. Regression Results

Variable	β	t	p	Zero-Order	Contribution
LTS	0.660	13.043	< 0.001	0.762	50%
LQS	0.349	6.849	< 0.001	0.542	18%

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H1 supported: LTS positively influences impulsive buying ($\beta = 0.660$, $p < 0.001$). H2 supported: LQS positively influences impulsive buying ($\beta = 0.349$, $p < 0.001$). H3 supported: simultaneous effect significant ($F = 147.802$, $p < 0.001$). $R^2 = 0.691$ indicates 69.1% variance explained: 30.9% attributable to unmodeled factors (brand image, social influence, self-control) (Dhandra, 2020).

DISCUSSION

5.1 LTS Dominance

LTS emerges as the dominant driver (50% contribution, $\beta = 0.660$), confirming Syauqi et al. (2022) and Martaleni et al. (2022). The mechanism operates through urgency perception rather than emotional panic: cognitive awareness of time limits ("limited time" = 71%; "short duration" = 68%) exceeds direct emotional worry (49%), indicating that consumers act impulsively upon perceiving opportunity loss threats, not upon intense anxiety (Rodrigues et al., 2021). Shopee's interface, including countdown timers, real-time notifications, systematically amplifies this effect. In this regard, Muftiadi et al. (2025, p. 451) demonstrate that environmental factors moderate system effectiveness:

> *"Information quality, which initially did not have a direct effect, came to have a highly significant effect on user satisfaction, through organizational climate, which was strengthened by change management."*

Analogously, LTS requires platform interface mediation to trigger impulsive buying; countdown timers function as the environmental moderator that converts time scarcity perception into spontaneous action.

5.2 LQS Moderation

LQS contributes 18% ($\beta = 0.349$), significant but substantially weaker than LTS. Descriptively, LQS perception (69.07%) exceeds LTS (68.2%), yet its behavioral conversion is one-third as effective. This asymmetry arises because stock-based FOMO is cognitively negotiable, where consumers assume restocking or alternative sellers, whereas time-based FOMO is irreversible (Jang et al., 2015). The 18–22 demographic's reactivity to dynamic digital stimuli (Syauqi et al., 2022) further amplifies LTS superiority. LQS operates through desire accumulation: past stockouts escalate impulsive drives upon restock, as consumer reviews confirm ("been waiting so long for the restock... finally got it too"). However, the "worry about stock running out" indicator scored only 49%, indicating retained rational consideration (price, need, finances) that LTS more effectively overrides.

5.3 Simultaneous Mechanism

The simultaneous effect of LTS and LQS on impulsive buying is consistent with Brock's (1968) central premise that any commodity is valued in proportion to its unavailability. Because LTS and LQS represent two distinct operationalizations of unavailability, temporal restriction and quantitative restriction, respectively, Commodity Theory predicts that both should independently elevate perceived value and, by extension, the urge to buy on impulse, which aligns with the significant joint effect observed in this study ($R^2 = 0.691$).

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However, the 3:1 contribution ratio between LTS and LQS suggests a psychological asymmetry that Commodity Theory's unavailability premise alone does not fully account for, prompting a closer look at why temporal unavailability may exert a stronger pull than quantitative unavailability in this context. One plausible explanation lies in reversibility differentials: temporal unavailability is effectively irreversible, once a countdown expires, the promotional price is permanently lost, whereas quantitative unavailability remains partially reversible, as consumers can often wait for restocking or seek alternative sellers offering the same product. Brock (1968) himself proposed a second premise alongside the unavailability premise, namely that threat anticipated decrement in well-being increases commodity-seeking behavior, though he left this premise undeveloped within the chapter. Extending this notion, the irreversible nature of a lapsed time-limited offer plausibly constitutes a stronger form of threat than the recoverable nature of a stock shortage, which may help explain why LTS exerts a comparatively stronger pull toward impulsive buying than LQS, though this extension goes beyond what Brock empirically tested.

This asymmetry finds partial support in subsequent empirical and conceptual work. Barton et al.'s (2022) meta-analysis confirms that scarcity cues from all three sources examined (demand-, supply-, and time-based) significantly increase purchase intentions, but finds no statistically significant superiority between them at the aggregate level ($Q(2) = 1.76$, $p = .414$); instead, their relative effectiveness is moderated by product characteristics such as hedonic versus utilitarian benefit and level of involvement. This absence of a universal hierarchy among scarcity sources implies that the stronger LTS effect observed in this study is more plausibly a function of this study's specific product and platform context than a fixed property of time scarcity itself. Separately, Roux, Goldsmith, and Cannon (2023) note that time scarcity promotions such as countdown timers have become markedly less effective online relative to offline retail contexts, a pattern they attribute to consumers' growing weariness from repeated exposure to such tactics in digital shopping environments. This finding runs counter to the stronger LTS effect found in this study, suggesting that the reversibility-based explanation proposed above may better account for the asymmetry than platform-driven fatigue, at least within this sample. Roux et al. (2023) further flag the distinction between partial unavailability (limited stock) and complete unavailability (stockouts) as a relatively underexplored area, suggesting that "limited stock" framing may carry different psychological weight than outright "sold out" messaging, though they present this as an open question for future research rather than an established finding, leaving open the possibility that LQS in this study was perceived as a milder, more easily dismissed cue than the harder deadline imposed by LTS.

3. CONCLUSION AND IMPLICATIONS

6.1 Conclusion

LTS and LQS simultaneously and significantly influence impulsive buying ($R^2 = 0.691$), with LTS dominating (50% vs. 18%). This advances scarcity marketing theory by: (a) validating Commodity Theory (Brock, 1968; Barton et al., 2025) in Indonesian e-commerce; (b) demonstrating direct LTS/LQS effects without arousal mediation, complementing prior mediator-dependent models (Wu et al., 2020; Fathia et al., 2023); (c) extending scarcity research into Southeast Asian markets.

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6.2Implications

For Somethinc and Shopee: prioritize LTS optimization (countdown timers, live shopping integration) over LQS investment; schedule flash sales at 19:00–22:00 WIB for peak Gen Z activity; develop post-purchase exclusive access programs to convert impulse into loyalty. For researchers: integrate self-control, FOMO, and platform interface variables as moderators; test longitudinal designs to capture scarcity effect dynamics.

4. Limitations

Cross-sectional design limits causal inference. Single-city, single-brand sampling restricts generalizability. Omitted variables (product quality, brand loyalty, social influence) may explain 30.9% residual variance.

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