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AROUSAL AND PRODUCT INVOLVEMENT AS A MEDIATOR BETWEEN PRODUCT TYPE AND IMPULSIVE BUYING

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Abstract. This study aims to analyze the influence of quantity-based scarcity and product type (hedonic vs. utilitarian) on arousal and product involvement and their impact on impulsive buying behavior on fashion e-commerce platforms. Using a quantitative approach with a survey method involving 250 e-commerce users in Tasikmalaya, this study applied covariance-based structural equation modeling (CB-SEM) to test the relationship between variables. The results of the analysis show that the perception of quantity scarcity and hedonistic product characteristics significantly increase arousal and product involvement, both of which play an important role in driving impulsive buying. These findings reinforce the theory that emotional stimuli and product involvement are the main psychological mechanisms behind spontaneous purchasing decisions in a digital context. Practically, the results of this study have implications for marketers to design communication strategies based on scarcity and the hedonistic value of products to increase consumer emotional involvement without encouraging overconsumption, while enriching the literature on consumer behavior in the era of digital commerce.

Keywords; Quantity-Based Scarcity, Arousal, Product Involvement, Impulse Buying, Product Type

1. Introduction

The growth of e-commerce has created a constantly connected, personalized, and nearly limitless consumption ecosystem, particularly in the fashion category, which serves as a medium for identity expression. This makes fashion purchases highly susceptible to impulsivity triggered by emotional stimuli, aesthetic value, and algorithmically curated social signals (Yi et al., 2023; Cengiz & Şenel, 2023). The digital shopping environment further amplifies this phenomenon through intense visuals, real-time promotions, limited-time drops, live shopping, BNPL schemes, and hyper-targeted recommendations that accelerate purchasing decisions (Hao & Huang, 2024). Research shows that quantity-based scarcity is more effective at generating arousal and driving impulsive buying than demand-based scarcity, especially when time scarcity is high, with arousal acting as a key mediator (Hao & Huang, 2024). However, these findings are still limited by the context of a single sample and do not consider other factors such as product type, level of consumer engagement, and characteristics of the digital environment. Related literature also reveals that product nature (hedonic vs. utilitarian) influences arousal, product involvement, and impulsive tendencies; hedonic products tend to create stronger pleasure and emotional involvement than utilitarian products (Bettiga et al., 2020; Motoki et al., 2019). Furthermore, heightened emotional arousal can trigger quick decisions with low cognitive control (Rodrigues et al., 2021; Serfas et al., 2014), while high product involvement also plays a significant role in increasing impulsive buying, as seen in the context of fashion involvement (Li et al., 2021; Park et al., 2006). However, there is no comprehensive model that interactively links quantity-based

scarcity, product type, arousal, and product involvement, and incorporates time scarcity as a potentiator of scarcity's effect on arousal in the context of a highly visual and interactive digital ecosystem. Therefore, this study aims to analyze how quantity-based and product-type scarcity (hedonic vs. utilitarian) influence arousal and product involvement, which subsequently drive impulsive buying on e-commerce platforms, and assess the moderating role of time scarcity in strengthening these influence pathways. Theoretically, this study contributes by proposing an integrative model that explains the emotional and cognitive mechanisms of impulsive buying in e-commerce environments, while practically providing insights for digital fashion industry players regarding scarcity presentation strategies, shopping experience design, and consumer behavior management in the context of urgency-based selling.

2. Methods

Researchers used a quantitative survey method to describe trends, behaviors, and relationships between variables in the population of fashion e-commerce consumers in Tasikmalaya who had been exposed to scarcity messages (Creswell, 2018:147). Tasikmalaya was selected as the research setting because the city shows rapid growth in digital consumption activities, strong adoption of online fashion shopping, and the increasing penetration of marketplace platforms, making it a relevant context for studying impulsive buying driven by scarcity cues. A purposive sampling technique was applied with criteria including respondents aged ≥ 18 years, having seen messages about limited stock or time-limited offers, and having made at least two online fashion purchases in the past six months. The minimum sample size was set at 245 respondents, based on 49 parameter estimates following the five-to-ten-times indicator/parameter guideline (Sekaran & Bougie, 2021). The researchers collected data through a closed Google Form questionnaire consisting of demographic items and research statements measured using a 1–10 bipolar adjective scale without a midpoint to minimize neutral responding (Kotler & Keller, 2021). Each variable was measured using adapted and validated indicators: Quantity-Based Scarcity with indicators such as perceived limited stock, urgency due to low quantity, and competitive pressure (Hao & Huang, 2024; Wu et al., 2020); Product Type (Hedonic/Utilitarian) with indicators capturing enjoyment, sensory appeal, practicality, and functional value (Bettiga et al., 2020; Motoki et al., 2019); Arousal with indicators including emotional excitement, physiological alertness, and stimulation during exposure to scarcity cues (Serfas et al., 2014; Rodrigues et al., 2021); Product Involvement with indicators of personal relevance, importance, and cognitive engagement in evaluating fashion products (Li et al., 2021; Park et al., 2006); and Impulsive Buying with indicators reflecting unplanned purchases, spontaneous decisions, and reduced cognitive control (Rook & Fisher, 1995; Verplanken & Herabadi, 2001). The researchers analyzed the data using CB-SEM to test model fit, construct validity, and causal relationships in the theoretical framework (Kline, 2015), utilizing IBM SPSS Statistics 27.0.1 and IBM SPSS AMOS 24.

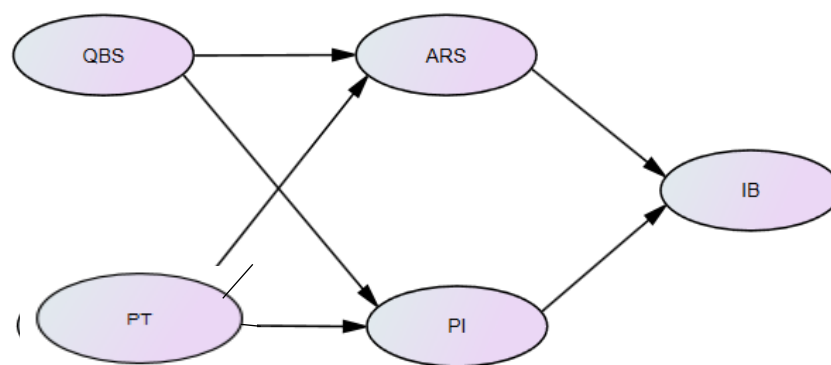


Fig 1. Research Framework

3. Result and Discussion

This study was conducted on 250 respondents. The characteristics of the respondents were divided into several criteria groups, namely based on gender, occupation, and monthly income.

Table 1. Respondent Characteristics

Characteristics	Attribute	Total	%
Gender	Male	147	59
	Female	103	41
Occupation	Student	52	21
	Civil Servant	65	26
	Private Employees	75	30
	Entrepreneurs	58	23
	< 1 million	48	19
Income per month	1-3 million	68	27
	3-5 million	75	30
	> 5 million	59	24

Source: Research Results, 2025

Based on Table 1, the majority of respondents were male, numbering 147 people (59%), while females numbered 103 people (41%). Based on occupation, most respondents worked as private employees, numbering 75 (30%), followed by civil servants, numbering 65 (26%), entrepreneurs, numbering 58 (23%), and students, numbering 52 (21%). In terms of monthly income, the largest group had an income of between Rp3-5 million, with 75 respondents (30%), followed by those with an income of Rp1-3 million, with 68 respondents (27%), more than Rp5 million, with 59 respondents (24%), and less than Rp1 million, with 48 respondents (19%). This data shows that the research respondents are generally in the productive age group with middle-income levels, which is relevant to the digital consumption behavior of fashion products in e-commerce.

This study uses covariance-based Structural Equation Modeling (SEM) with AMOS software as the analysis method. The first stage involves constructing a conceptual model that has been prepared in advance for the research hypothesis. Next, the collected data were examined to ensure that no data were missing and that they met the criteria required for SEM analysis. Validity and reliability tests were conducted to ensure that the measurement items could accurately represent the research variables and had high consistency. After confirming

the suitability of the measurement items, the next stage is to test the model to ensure that it fits the data. If the model is declared a good fit, the analysis continues by testing the significance of the influence between variables in accordance with the hypotheses proposed in the study (Hair et al., 2021).

In Structural Equation Modeling (SEM) analysis, data normality tests are conducted to ensure that the data follows a normal distribution (Hair et al., 2021). The analysis results show that the critical ratio value for the normality test is 2.416, which does not exceed the cutoff limit of ± 2.58 . Thus, the data in this study meet the criteria for normal distribution and can be used for further analysis. After the normality test, the next step is to test for outliers in univariate and multivariate data. The purpose of outlier testing is to avoid bias that could affect the research results (Hair et al., 2021). The test results show that the minimum and maximum Z-scores are within the range of ± 3 , which indicates that the data is free from univariate outliers. For multivariate outlier testing, a comparison was made between the chi-square table value and the highest Mahalanobis distance output value. The chi-square table value was 40.291 and the highest Mahalanobis distance value was 45.315, indicating that the data should be free from multivariate outliers. Thus, the research data met the criteria of normality and freedom from outliers.

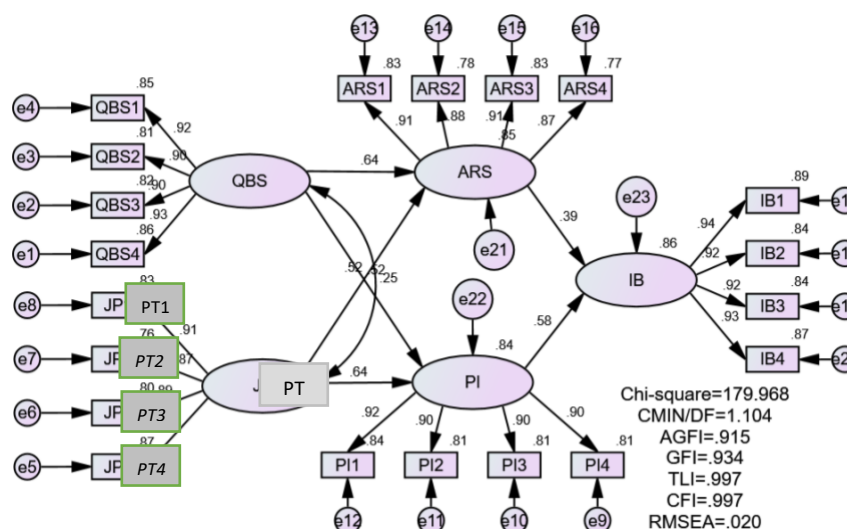
Tabel 2. Measurement, Loadings, CR, and VE

No	Questionnaire Statements	Indikator	Loading Factor	CR	VE
1	The information about limited product availability encourages me to buy immediately.	QBS1	0.927	0.952	0.834
2	I feel that products become more valuable when they are limited in quantity.	QBS2	0.905		
3	I am afraid of running out of products because there is little stock.	QBS3	0.900		
4	The information "stock is running low" makes it difficult for me to delay my purchase.	QBS4	0.920		
5	I feel excited when I see products with limited stock.	ARS1	0.911	0.941	0.801
6	I feel tension and enthusiasm to buy immediately.	ARS2	0.881		
7	Information about product scarcity increases my desire to shop.	ARS3	0.912		
8	I feel increasingly curious about rare products.	ARS4	0.875		
9	I am very interested in the product category offered.	PI1	0.901	0.947	0.818
10	I feel that this product is relevant to my personal needs.	PI2	0.901		
11	I want to know more information before buying this product.	PI3	0.900		
12	I feel that the decision to buy this product is important to me.	PI4	0.916		

No	Questionnaire Statements	Indikator	Loading Factor	CR	VE
13	I buy products because they provide pleasure and an enjoyable experience.	PT1	0.930	0.945	0.812
14	I buy the product because it provides useful benefits and functions.	PT2	0.892		
15	I consider this product more as entertainment than a necessity.	PT3	0.871		
16	I buy this product because its functions are useful in my daily activities.	PT4	0.911		
17	I often buy products spontaneously without planning during live streaming.	IB1	0.941	0.960	0.858
18	I immediately buy the product when the promotion appears without thinking twice.	IB2	0.916		
19	I find it difficult to resist buying products that look appealing.	IB3	0.916		
20	I feel satisfied immediately after buying a product spontaneously.	IB4	0.931		

Source: Research Results, 2025

After testing the assumptions of Structural Equation Modeling (SEM), the next step is to test validity and reliability. Validity measures the extent to which a measure can define the intended concept, while reliability measures the consistency of that measure. Based on Table 2, it can be seen that all research indicators have factor loading values greater than 0.40, which indicates that each indicator accurately represents the intended construct. For reliability testing, the variance extracted (VE) value of each variable must be greater than 0.50, and the construct reliability (CR) value of each indicator must be greater than 0.70. The analysis results show that all VE scores for the variables in this study are above 0.50, and the CR values for each variable are also greater than 0.70.



Source: Research Results, 2025

Fig 2. Full Model

Figure 2 shows the Structural Equation Modeling (SEM) model that describes the relationship between latent variables: QBS, PT, ARS, PI, and IB.

Tabel 3. Goodness of Fit (Gof) SEM-AMOS Model

Goodness of Fit	Hasil Analisis	Cut of Value	Evaluasi Model
Chi-Square	179.968	Diharapkan kecil	Marjinal Fit
CMIN/DF	1.104	< 2.000	Fit
AGFI	0.915	> 0.90	Fit
GFI	0.934	> 0.90	Fit
TLI	0.997	> 0.95	Fit
CFI	0.997	> 0.95	Fit
RMSEA	0.020	< 0.80	Fit

Source: Research Results, 2025

The research model feasibility test was conducted by evaluating the goodness of fit value, which can be seen in Table 3. A low chi-square value indicates that the SEM model has a good fit. In addition, the CMIN/DF value meets the acceptance criteria, which is less than 2.000. The AGFI and GFI values also indicate a good fit with an acceptance level greater than 0.90. TLI and CFI have values greater than 0.95, which indicates that the model fits the data. Furthermore, an RMSEA value less than or equal to 0.08 indicates that the model fits the degrees of freedom in the model (Ferdinand, 2016). Based on the analysis results, all goodness-of-fit criteria values meet the specified criteria. Thus, it can be concluded that this research model is suitable for further analysis.

Hypothesis testing is conducted to analyze the relationship between latent variables in the research model (Hair et al., 2021). In Structural Equation Modeling (SEM), hypothesis testing is conducted through path analysis using AMOS 24 software. The indicators for testing hypotheses in path analysis are by examining the output results of the critical ratio or t-value and p-value. If the p-value is less than 0.05, the hypothesis can be accepted, while the relationship between variables can be seen from the positive or negative t-value (Hair et al., 2021).

Tabel 4. Hypothesis Testing

Influence Relationship			Estimate	C.R.	P
ARS	<---	QBS	0.685	16.078	0.000
PI	<---	QBS	0.547	13.561	0.000
PI	<---	JP	0.700	15.906	0.000
ARS	<---	JP	0.580	13.820	0.000
IB	<---	ARS	0.398	6.261	0.000
IB	<---	PI	0.599	9.047	0.000

Source: Research Results, 2025

Based on Table 4, all relationships between variables show a Critical Ratio (C.R.) value greater than 1.96 with a p-value of 0.000, indicating that each effect tested is acceptable at a 95% confidence level. The estimation results show that quantity-based scarcity (QBS) increases arousal (ARS) with a coefficient of 0.685 and product involvement (PI) of 0.547. In addition, product type (JP) also increases product involvement (0.700) and arousal (0.580). Meanwhile, arousal has a positive effect on impulse buying (IB) with an estimated value of 0.398, and product involvement shows a stronger effect on impulse buying of 0.599. These findings illustrate that the combination of product scarcity and product type characteristics can increase emotional involvement and spontaneous purchasing impulses in the context of fashion e-commerce.

4. Discussion

The results of the study show that quantity-based scarcity has a positive effect on arousal. This means that the higher the perception of scarcity based on the quantity of a product, the greater the level of emotional excitement or joy experienced by consumers, which in turn can encourage impulsive buying behavior. This is in line with previous studies showing that limited offers, such as promotions, discounts, and cashback, can encourage consumers to make purchases without careful planning (Marissa, 2024). Thus, perceived quantity scarcity can increase the likelihood of impulsive purchases by creating urgency and excitement in consumers. The results of the study indicate that quantity-based scarcity has a positive effect on product involvement. This means that limited product availability can increase the level of consumer involvement with the product, triggering more intense interest and attention to the features and value of the product (Misbach, 2022). This indicates that the perception of scarcity can increase consumers' cognitive and emotional focus, making them more deeply explore the attributes of limited products (Wu et al., 2020). Thus, this perception of scarcity can indirectly influence impulsive buying behavior through increased consumer involvement. The results of the study show that product type has a positive effect on arousal. This means that hedonistic products are more effective in arousing emotional excitement and pleasure than utilitarian products, which can then encourage more spontaneous purchasing decisions (Ngo et al., 2024). These results are in line with findings showing that fashion products, as a hedonistic category, are capable of creating strong emotional and cognitive engagement, triggering impulsive purchases on e-commerce platforms (Ngadiman & Pradana, 2024). Therefore, it is important for marketers to adapt communication strategies that emphasize the expressive value and emotional experience offered by products, not just

their functionality (Adawiyah & Haris, 2024). The results of the study indicate that product type has a positive effect on product involvement. This means that products type to attract consumers' attention and interest more deeply than utilitarian products, leading to greater involvement in the purchase decision-making process. This indicates that the inherent characteristics of products, such as their expressive value and the experiences they offer, significantly increase consumers' cognitive and emotional involvement, in contrast to utilitarian products that focus more on practical functions (Indiani et al., 2024). Therefore, marketers can leverage the intrinsic appeal of hedonic products to increase consumer engagement through marketing strategies that emphasize their emotional value and lifestyle appeal (Hayu et al., 2023). Research findings indicate that arousal has a positive effect on impulsive buying. This means that the higher the level of excitement or joy experienced by consumers, the greater the likelihood that they will make sudden and unplanned purchases, driven by strong emotional impulses (Lestari et al., 2023). This is in line with studies that highlight how intense emotional stimuli, often triggered by discounts or limited offers, can reduce cognitive control and facilitate quick and unplanned purchasing decisions (Widyastuti & Hariasih, 2024). This increase in emotional arousal is often induced by external factors such as marketing strategies that utilize attractive visuals and sounds, which ultimately trigger impulsive buying behavior in consumers, especially digital natives (Ngo et al., 2024). Therefore, marketing strategies that evoke positive emotions and urgency can be highly effective in driving impulsive purchasing behavior, especially on competitive e-commerce platforms (Riyanto & Loisa, 2022). The results of the study show that product involvement has a positive effect on impulsive buying. This means that the higher the consumer's involvement with a product, both cognitively and affectively, the greater their tendency to make impulsive purchases, especially when the product is in line with their personal values or lifestyle. This deep involvement is often reinforced by hedonistic shopping experiences and positive emotional stimulation that encourage purchases without lengthy rational consideration (Lestari et al., 2023). Thus, marketing strategies that emphasize personalization and immersive experiences can significantly trigger impulsive purchases.

5. Conclusion

This study comprehensively examines the factors that influence impulsive buying in the context of e-commerce, particularly those related to scarcity based on quantity, product type, arousal, and product involvement. The findings show that perceptions of quantity scarcity and product type can increase arousal and product involvement, which in turn are strong predictors of impulsive buying behavior. However, this study has limitations in that it focuses only on e-commerce in general and does not specifically consider differences in platforms or more detailed product categories, which may have different consumer behavior dynamics. Therefore, further research could expand the scope by analyzing specific e-commerce platforms or identifying specific product categories to gain a deeper understanding of the nuances of impulsive buying behavior.

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