

Do Emotions Matter? Positive Emotions as a Mediator Between Gamification, Discounts, and Impulse Buying Among Gen Z

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ABSTRACT

Purpose: This study examines the influence of gamification and price discounts on impulse purchases among Generation Z, with positive emotions as a mediating variable.

Method: A quantitative approach was employed, using primary data collected through an online questionnaire distributed via social media. The sample consists of 258 Gen Z Shopee users across Indonesia. Data were analyzed using SEM-PLS with SmartPLS version 4.0.

Result: Gamification significantly influences both positive emotions and impulse buying behavior. Price discounts significantly affect positive emotions but not impulse buying directly. Positive emotions have a significant impact on impulse buying and mediate the relationship between price discounts and impulse purchases. However, they do not mediate the effect of gamification on impulse buying.

Practical Implications for Economic Growth and Development: The study highlights how gamification and discount strategies that evoke positive emotions can increase impulse purchases among Gen Z in e-commerce. This can enhance transaction volumes and contribute to digital economic growth. The findings offer practical insights for e-commerce businesses seeking to influence consumer behavior.

Originality/Value: This study contributes original insights by identifying positive emotions as a key mediator in the relationship between gamification, discounts, and impulse buying in Gen Z. It uncovers how gamified elements—such as challenges and rewards—stimulate emotional responses that lead to impulsive purchasing, enriching the digital marketing literature within emotion-driven e-commerce contexts.

Keywords: Gamification, Impulse Buying, Positive Emotion, Price Discount, S-O-R

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INTRODUCTION

Technological advancements, increasing internet penetration, and widespread mobile usage have significantly driven the rapid growth of the e-commerce industry. In Indonesia, this growth has led to a surge in digital consumption, with 88.1% of internet users engaging in online transactions (CNN Indonesia, 2021). In October 2023, e-commerce transactions reached IDR 42.2 trillion (CNN Indonesia, 2023). These transactions are largely dominated by consumers aged 18–35, particularly Generation Z and millennials, who are highly familiar with digital shopping environments and modern payment methods (Kredivo Group, 2020).

Impulse buying behavior has become increasingly prevalent in the digital age. Saleh (2023) reported that 84% of consumers had made impulse purchases, with 40% of e-commerce spending attributed to such behavior. Consequently, e-commerce retailers aim to stimulate this behavior to boost sales (Iverson et al., 2023). A study by Populix (2023) found that more than 70% of respondents actively shop online, with price being the primary trigger for impulse



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buying, encouraging consumers to seek promotions, discounts, and vouchers. Similarly, a Nielsen survey in 2019 revealed that 76% of Indonesian consumers engage in impulse buying, with the trend increasing annually (Dameyasani & Abraham, 2013; Purmono & Ramadania, 2021).

The growth of online shopping has led Indonesian e-commerce players to compete through differentiation strategies aimed at increasing transactions and retaining users (Ratnasari, 2022). Generation Z, as a dominant user group, shows a growing tendency toward impulsive purchasing behavior (Purmono & Ramadania, 2021). In 2024, Indonesia's population is projected to reach 47.85 million people, with 24.12% comprising Generation Z (Kompas, 2024). E-commerce platforms such as Shopee, Lazada, TikTok, and Tokopedia now combine shopping with entertainment elements to enhance the user experience (Beatriz et al., 2023). Shopee, the favorite platform among Gen Z (Siregar et al., 2023), leads the market with a 71.46% share (UMN Consulting, 2022) and employs gamification and discount strategies to foster consumer loyalty and stimulate impulse purchases.

Price discounts are a widely used strategy to quickly boost profits (Fathoni, 2022). Several studies have shown that discounts significantly influence impulse buying (Noor, 2020; Xu & Huang, 2014), although some have found contrasting results (Ittaqullah et al., 2020). In general, discounts reduce prices below standard rates to attract consumers. In contrast, gamification offers a psychological experience that evokes strong positive emotions during interactive activities (Chrisnathaniel et al., 2021). Research by Mullins and Sabherwal (2018) found a positive correlation between gamification and users' emotional states. Shopee exemplifies this approach through features such as games, reward systems, and price discounts to increase user engagement and encourage impulse buying.

Prior research has explored the impact of discounts and gamification on consumer behavior. Most studies agree that price discounts positively affect impulse buying (Anggarwati et al., 2023; Antariksa et al., 2021; Tarmidi & Setiawan, 2022), though some have found no significant effect (Ittaqullah et al., 2020). Meanwhile, studies on gamification typically focus on its direct impact on purchasing behavior but have rarely examined its emotional influence. A study by Shidiqy, Dhiya'u, and Rusdiyanto (2024) found that positive emotions partially mediate the effect of price discounts on impulse buying during promotional events, but did not include the gamification component.

This study introduces a novel perspective by integrating positive emotions as a mediating variable in the relationship between gamification and impulse buying—an approach not extensively addressed in prior research. It highlights how gamification elements, such as challenges and rewards, enhance user engagement and evoke positive emotions, which in turn significantly influence impulsive buying decisions. This aligns with the findings of Mullins and Sabherwal (2018), who identified a positive relationship between gamification and emotional states. Drawing on Fredrickson's (2013) broaden-and-build theory of positive emotions—which includes love, joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, and awe—this study derives emotion-based variables, as exemplified by Shopee's integration of games, rewards, and price discounts to encourage unplanned purchases.

The purpose of this study is to analyze the influence of gamification and price discounts on impulse buying behavior among Generation Z and to examine the mediating role of positive emotions in these relationships. Using the Stimulus-Organism-Response (SOR) theoretical framework, this study contributes to a deeper understanding of how gamification and discounts (Stimuli) trigger positive emotional states (Organism), which subsequently drive impulse buying behavior (Response). In doing so, the study aims to offer theoretical, managerial, and practical contributions to digital marketing strategy and consumer psychology.

Hypotheses Development

Gamification and Positive Emotion

Gamification, by incorporating game mechanics such as points, badges, and rewards into e-commerce platforms, enhances customer engagement and emotional experiences, thereby encouraging impulsive buying behavior (Iverson et al., 2023; Xu et al., 2020). Positive emotions—such as excitement and satisfaction—generated through these gamified elements mediate the relationship between sales promotions and impulsive purchases (Marcelino et al., 2023). The Stimulus-Organism-Response (S-O-R) model explains this process, wherein gamified stimuli (stimulus) evoke positive emotional responses (organism), which subsequently lead to impulse purchases (response) (Aparicio et al., 2021). Additionally, Behavioral Economics Theory emphasizes how emotional triggers—such as rewards and a sense of urgency—can drive impulsive decisions, as consumers often act on immediate emotions rather than rational deliberation (Thaler & Sunstein, 2008). Previous studies have shown that gamification significantly increases consumer satisfaction, engagement, and purchase intentions, underscoring the critical role of positive emotions in driving impulse buying (Lopes et al., 2023; Xu et al., 2020).

H1: Gamification has a positive and significant effect on positive emotions in e-commerce platforms.

Price Discount and Positive Emotion

The relationship between price discounts, positive emotions, and impulsive buying behavior in e-commerce can be effectively explained through the Stimulus-Organism-Response (S-O-R) model. In this context, price discounts act as external stimuli that evoke positive emotional responses (organism), which subsequently lead to impulsive buying behavior (response) (Islam et al., 2021; Shao et al., 2019). Promotional strategies, such as discounts, increase consumer satisfaction, elicit positive emotions, and raise the likelihood of impulse purchases (Bigne et al., 2020). Positive emotions serve as a mediating factor in this relationship, catalyzing consumer responses and making individuals more susceptible to impulsive buying (Larasati & Yasa, 2021; Panasea et al., 2022). Research has shown that this mediating effect is particularly significant in online shopping environments, where consumers are more influenced by emotional cues than in traditional retail settings (Kadir et al., 2024).

H2: Price discounts have a positive and significant effect on positive emotions in e-commerce platforms.

Gamification and Impulse Buying

Gamification, by incorporating game elements into non-gaming contexts, significantly enhances user satisfaction and engagement—two key drivers of impulsive purchasing behavior (Aparicio et al., 2021; Koivisto & Hamari, 2019). Shopee's gamification strategy, which includes rewards such as Shopee coins and discounts, incentivizes customer loyalty and stimulates impulse buying by offering emotional satisfaction and a sense of achievement (Huang et al., 2019; Tarmidi & Setiawan, 2022). Research indicates that components like points and rewards serve as powerful motivators, influencing consumer behavior by triggering desires for pleasure, uniqueness, and social satisfaction (Rahmadhan et al., 2023; Ringo et al., 2023; Zhang et al., 2021). This process aligns with the theory that gamification enhances emotional experiences, fosters engagement, and encourages unplanned purchases, thereby supporting the hypothesis that gamified incentives are a significant driver of impulse buying.

H3: Gamification has a positive and significant effect on impulse buying in e-commerce platforms.

Price Discount and Impulse Buying

Discount strategies, commonly employed to rapidly boost sales, influence consumer perceptions of value by creating the impression of receiving more for less, thereby increasing the likelihood of impulse buying (Fathoni, 2022; Risma & Sukmawati, 2023). According to Kotler and Keller (2016), discounts reduce the standard price and activate psychological mechanisms such as urgency and scarcity—especially when framed within time-limited offers. This aligns with the Stimulus-Organism-Response (S-O-R) theory, where discounts function as external stimuli that influence internal emotional states (e.g., excitement or urgency), ultimately leading to impulsive purchasing behavior (Dang et al., 2023; Risal et al., 2023). Empirical evidence supports this, indicating that time pressure significantly increases the likelihood of impulse purchases, particularly in online shopping contexts where decisions are made quickly and are often emotionally driven (Huang & Suo, 2021; Tarmidi & Setiawan, 2022). Thus, discounts not only lower prices but also create situational conditions that amplify emotional arousal and encourage unplanned buying.

H4: Price discounts have a positive and significant effect on impulse buying in e-commerce platforms.

Positive Emotion and Impulse Buying

Positive emotions serve as a critical mediator between external stimuli—such as gamification or price discounts—and impulsive buying behavior. According to cognitive emotion theory, emotional responses are triggered by perceived stimuli and play a significant role in shaping consumer intentions (Fatmawati & Dinar, 2021; Namkung & Jang, 2010). In the context of e-commerce, positive emotional experiences—such as joy, excitement, or satisfaction—increase the likelihood of unplanned purchases by creating hedonic motivation, prompting consumers to act quickly for immediate gratification (Cuong, 2024; Fazrin & Siregar, 2021). Emotions influence cognition and behavior by altering psychological states, often overriding rational decision-making processes (Myers, 2010). Empirical evidence supports this view, indicating that positive emotions during digital interactions elevate mood and trigger spontaneous urges or cravings that lead to impulse buying (Setiawan & Ardani, 2022). Thus, positive emotions function as a key psychological mechanism linking marketing stimuli with consumer purchasing behavior.

H5: Positive emotion has a positive and significant effect on impulse buying in e-commerce platforms.

The Role of Positive Emotion in Mediating Gamification on Impulse Buying

Positive emotions, gamification, and impulse buying are closely linked through the Stimulus-Organism-Response (S-O-R) model, in which gamification serves as a stimulus that evokes positive emotional responses (organism), ultimately leading to impulsive purchases (response). According to cognitive emotion theory, emotional reactions to external stimuli play a pivotal role in shaping behavioral intentions (Fatmawati & Dinar, 2021). Gamification elements—such as rewards, challenges, and interactive features—trigger feelings of joy and excitement, enhancing user engagement and reducing cognitive deliberation, thereby increasing the likelihood of impulse buying (Marcelino et al., 2023; Mariyana, Djawoto, & Management, 2023). Empirical studies further support this connection, showing that positive emotions significantly amplify spontaneous purchasing behavior in gamified e-commerce environments (Cuong, 2024; Lestari & Sinambela, 2023). Thus, positive emotions mediate the relationship between gamification and impulse buying.

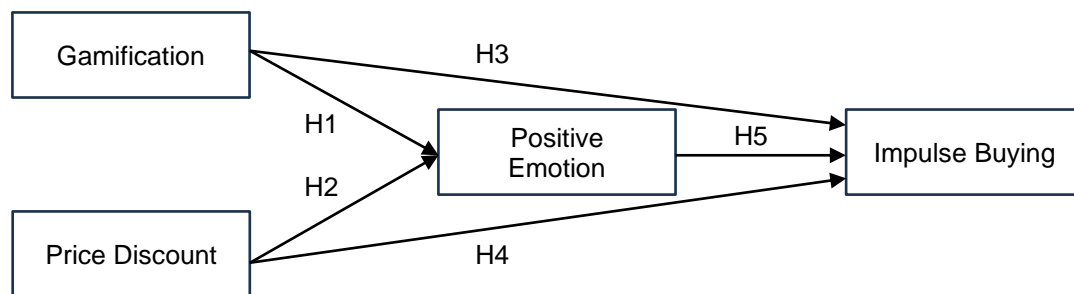
H6: Gamification has a positive and significant effect on impulse buying through positive emotion in e-commerce platforms.

The Role of Positive Emotion in Mediating Price Discount on Impulse Buying

Based on the Stimulus-Organism-Response (S-O-R) framework, price discounts serve as external stimuli that elicit positive emotional responses (organism), which in turn lead to impulse buying behavior (response). Emotions play a crucial role in shaping consumer decision-making, and sales promotions—particularly discounts—often evoke feelings of excitement and satisfaction that reduce rational control, thereby increasing the likelihood of spontaneous purchases (Devi & Jatra, 2020). Research consistently supports the strong link between promotional appeal and impulsive buying tendencies (Djohan et al., 2022; Zhang et al., 2022; Zhang et al., 2021), while discounted prices have been shown to significantly affect consumer motivation and purchase decisions (Anggarwati et al., 2023). Notably, Xu and Huang (2014) found that price discounts are more effective at inducing impulsive purchases compared to product bundling, a finding echoed by Noor (2020), who emphasized the significant role of discounts in triggering unplanned buying. These findings underscore the mediating role of positive emotions in the relationship between price discounts and impulse buying.

H7: Price discounts have a positive and significant effect on impulse buying through positive emotion in e-commerce platforms.

Figure 1. Research Framework



Mediating Effect

H6: Gamification → Positive Emotion → Impulse Buying

H7: Price Discount → Positive Emotion → Impulse Buying

Source: Developed by the authors (2025)

METHOD

This study employed a quantitative research approach using a non-probability purposive sampling technique. The sample comprised 300 Generation Z respondents aged 13–28 years, in accordance with BPS (2023) data, who were active Shopee users with prior experience utilizing price discounts and gamification features. Shopee was selected as the research context due to its popularity among Gen Z and its strategic implementation of gamification and discount mechanisms to stimulate impulse buying. Data were collected through an online questionnaire distributed via Google Forms, designed to measure the influence of gamification elements (e.g., badges, rewards, points, and discounts) and the mediating role of positive emotions on impulse buying behavior. A total of 305 responses were received, of which 258 were deemed valid for analysis. Data analysis was conducted using Structural Equation Modeling (SEM) with Partial Least Squares (PLS) through SmartPLS 4.0. The analysis proceeded in two stages: (1) assessment of the measurement model for reliability and validity, and (2) evaluation of the structural model using PLS t-testing. SmartPLS was chosen for its suitability in handling relatively small sample sizes and complex model structures.

Table 1. Variables Measurement

Variables	Codes	Statements
Gamification (Aparicio et al., 2021; Zhang et al., 2021)	G1	I feel compelled to spend more in order to earn certain badge upgrades.
	G2	The level-up mechanism on the Shopee platform motivates me to achieve a higher badge rating.
	G3	Platinum badges offer exclusive services and rewards on the Shopee platform.
	G4	Shopee provides tangible rewards, such as memberships and vouchers, which offer greater discounts at each level.
	G5	Shopee offers real rewards based on task-related behaviors (e.g., inviting friends, making payments).
	G6	Tangible rewards are a popular incentive mechanism that encourages user participation on the Shopee platform.
	G7	Shopee also provides intangible rewards, such as “energy value,” for example, through the Shopee meter.
	G8	The platform can accurately assess my task-related behaviors and increase my “energy value.”
	G9	“Energy value” is an important metric reflecting my performance or engagement on the Shopee platform.
	G10	The points system increases my involvement with the Shopee platform.
	G11	The availability of points motivates me to take action to earn them.
Price Discount (Fitrotin & Sudarwanto, 2022)	PD1	Shopee offers products at relatively lower prices.
	PD2	There are very attractive discounts on the Shopee platform.
	PD3	Overall, product prices on Shopee are affordable.
Positive Emotion (Setiawan & Ardani, 2022)	PE1	I feel good when I find significant discounts on e-commerce platforms.
	PE2	The satisfaction I get from shopping on e-commerce platforms encourages me to buy more.
	PE3	I feel comfortable shopping on e-commerce platforms.
	PE4	I often feel the urge to buy something when I’m in a good mood.
	PE5	Shopping on e-commerce platforms makes me feel happy.
Impulse Buying (Rook & Fisher, 1995)	IB1	I often make spontaneous purchases.
	IB2	“Just do it” describes how I often make buying decisions.
	IB3	I frequently make purchases without much deliberation.
	IB4	“I see it, I buy it” describes my behavior well.
	IB5	“Buy now, think later” reflects how I shop.
	IB6	Sometimes, I feel the urge to make spur-of-the-moment purchases.
	IB7	I often buy things based on how I feel in the moment.
	IB8	I usually plan most of my purchases carefully.
	IB9	Sometimes, I am a bit reckless about what I buy.

Source: Compiled by the authors (2025)

RESULT AND DISCUSSION

Demographic Profile of Respondents

Table 2 presents the distribution of demographic characteristics of the respondents who participated in this study. It includes data on respondents' gender, age, highest level of education, occupation, and income. This information provides an overview of the

demographic profile of the respondent group, which is primarily composed of individuals aged 21–24 years, with a high school education or lower, and mostly employed as students or college students. The table below outlines the frequency and percentage of each demographic category.

Table 2. Demographic Profile of Respondents

No	Demographic of Characteristics		Frequency	Percentage
1.	Gender	Male	82	31.8%
		Female	176	68.2%
2.	Age	< 17 years old	35	13.5%
		17-20 years old	49	18.8%
		21-24 years old	144	55.4%
		25-28 years old	32	12.3%
3.	Highest Education	Senior High School or below	170	65.9%
		Diploma (D1/D2/D3)	17	6.6%
		Bachelor degree (S1)	58	22.5%
		Master degree (S2)	13	5%
4.	Job	Student	191	74%
		PNS/TNI/POLRI	19	7.4%
		Private employees	41	15.9%
		etc.	7	2.7%
5.	Monthly Income	< IDR 1,000,000	122	47.3%
		IDR 1,000,000 - IDR 3,000,000	52	20.2%
		IDR 3,000,001 - IDR 5,000,000	39	15.1%
		> IDR 5,000,000	45	17.4%

Source: Processed data (2025)

Measurement Model (Outer Model)

This study assessed the validity and reliability of the instrument to ensure accurate measurement of latent variables. Validity testing included Convergent Validity, evaluated through loading factors and Average Variance Extracted (AVE), as well as Composite Reliability. Discriminant Validity was assessed using the Fornell-Larcker criterion. Reliability was evaluated by calculating Cronbach's Alpha.

Table 3. Validity and Reliability Test

Construct	Codes	Loading Factor	Average Variance Extracted (AVE)	Composite Reliability	Cronbach's Alpha
Impulse Buying (IB)	IB1	0.862	0.733	0.956	0.947
	IB2	0.881			
	IB3	0.879			
	IB4	0.911			
	IB5	0.858			
	IB6	0.839			
	IB7	0.893			
	IB9	0.712			
Gamification (G)	G1	0.785	0.688	0.960	0.954
	G2	0.834			
	G3	0.837			
	G4	0.752			

Construct	Codes	Loading Factor	Average Variance Extracted (AVE)	Composite Reliability	Cronbach's Alpha
	G5	0.801			
	G6	0.827			
	G7	0.845			
	G8	0.876			
	G9	0.862			
	G10	0.850			
	G11	0.845			
Price Discount (PD)	PD1	0.897	0.836	0.939	0.902
	PD2	0.931			
	PD3	0.916			
Positive Emotion (PE)	PE1	0.821	0.713	0.926	0.899
	PE2	0.872			
	PE3	0.860			
	PE4	0.811			
	PE5	0.857			

Source: Processed data (2025)

One item from the impulse buying scale (IB8), specifically "I usually plan most of my purchases carefully," was found to be invalid based on the results of the validity and reliability analysis, with a loading factor of 0.388, which is below the 0.70 threshold. As a result, this item was removed to ensure the reliability and validity of the impulse buying construct. After removing IB8, the data processing results indicated that the loading factor values for all statements related to Gamification, Price Discount, Impulse Buying, and Positive Emotion were greater than 0.70, confirming that all indicators were valid in measuring their respective constructs. Additionally, the Average Variance Extracted (AVE) values for all four variables were ≥ 0.50 , meeting the criteria for construct validity (Haryono, 2016). Furthermore, the Cronbach's Alpha and Fornell-Larcker values (shown on Table 4) for the reliability of all variables were ≥ 0.70 , demonstrating good reliability.

Table 4. Fornell-Larcker

Variables	Gamification	Impulse Buying	Positive Emotion	Price Discount	Conclusion
Gamification	0.829				Valid
Impulse Buying	0.682	0.856			Valid
Positive Emotion	0.514	0.507	0.845		Valid
Price Discount	0.605	0.536	0.677	0.915	Valid

Source: Processed data (2025)

R-Square Test

R-Square in PLS-SEM measures the extent to which latent independent variables can explain the variability of latent dependent variables. R^2 values range from 0 to 1, with higher values indicating stronger model predictions. The following presents the results of R-Square from this analysis.

Table 5. R-Square Test

Variables	R-Square	R-Square Adjusted
Impulse Buying	0.503	0.498
Positive Emotion	0.475	0.471

Source: Processed data (2025)

The analysis results revealed an R-squared value of 0.503 for impulse buying, indicating that the independent variables in the model explained 50.3% of the variability, with other factors accounting for 49.7%. This suggests a strong relationship. In contrast, the R-squared value of 0.475 for positive emotion indicates that the model explained 47.5% of the variation, while external factors accounted for 52.5%. This reflects a moderate relationship, suggesting that while the model explains most factors influencing positive emotions, external influences still play a significant role.

Hypotheses Testing

Direct Effect

The results of the direct effect bootstrapping are presented in Table 6, as shown below.

Table 6. Direct Effect

Direction	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values	Decision
G → IB	0.538	0.542	0.090	5.985	0.000	Significant
G → PE	0.164	0.170	0.067	2.470	0.007	Significant
PE → IB	0.163	0.153	0.097	1.689	0.046	Significant
PD → IB	0.101	0.109	0.095	1.062	0.144	Insignificant
PD → PE	0.577	0.571	0.084	6.860	0.000	Significant

Source: Processed data (2025)

The direct effect analysis in Table 6 shows that gamification (G) significantly influences impulse buying (IB) and positive emotion (PE), with T-statistics of 5.985 and 2.470, respectively, and p-values below 0.05. Positive emotion also has a significant effect on impulse buying (T = 1.689, p = 0.046). Meanwhile, price discount (PD) significantly affects positive emotion (T = 6.860, p = 0.000), but its direct effect on impulse buying is not significant (T = 1.062, p = 0.144).

Indirect Effect

The results of the indirect effect bootstrapping are presented in Table 7, as shown below.

Table 7. Indirect Effect

Direction	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Conclusion
PD → PE → IB	0.094	0.085	0.054	1.755	0.040	Significant
G → PE → IB	0.027	0.026	0.020	1.353	0.088	Insignificant

Source: Processed data (2025)

Table 7 presents the results of the indirect effect analysis. The path from Price Discount (PD) to Impulse Buying (IB) through Positive Emotion (PE) is significant ($p = 0.040$), indicating that positive emotion mediates the relationship between price discounts and impulse buying. In contrast, the indirect effect of Gamification (G) on Impulse Buying via Positive Emotion is not significant ($p = 0.088$), suggesting that while gamification influences impulse buying, this effect is not substantially mediated by positive emotion.

Discussion

The findings indicate that gamification exerts a positive and significant influence on positive emotion ($p = 0.007$; $t = 2.470$), thereby supporting Hypothesis 1 (H1). This outcome suggests that the incorporation of game elements—such as rewards and achievements—enhances user enjoyment and engagement, which in turn fosters positive emotional experiences. These elements serve as intrinsic motivators, promoting a sense of competence and satisfaction by fulfilling key psychological needs. This aligns with the Stimulus-Organism-Response (S-O-R) framework (Mehrabian & Russell, 1974), which posits that external stimuli (e.g., gamification) affect internal states (e.g., positive emotions), which then lead to specific behavioral responses.

Hypothesis 2 (H2) is also supported, as price discounts were found to have a positive and significant effect on positive emotion ($p = 0.000$; $t = 6.860$). Discounts create a perception of value and savings, which elicit positive affective responses. The pleasure derived from obtaining a favorable deal enhances the overall shopping experience and activates the brain's reward systems, thereby increasing emotional engagement. These findings are consistent with previous research by Noor (2020) and Xu and Huang (2014), which highlights the capacity of discounts to generate positive emotional states.

Support was also found for Hypothesis 3 (H3), wherein gamification significantly influenced impulse buying behavior ($p = 0.000$; $t = 5.985$). The interactive and engaging nature of gamification reduces cognitive resistance and encourages unplanned purchasing decisions. By capturing users' attention and eliciting emotional arousal, gamification fosters spontaneous buying tendencies. Furthermore, elements such as urgency and reward embedded within gamified systems support impulsive consumer behavior, in line with the findings of Shao et al. (2019), who emphasize the role of intrinsic motivation in such processes.

In contrast, Hypothesis 4 (H4) was rejected, as price discounts did not significantly affect impulse buying ($p = 0.144$; $t = 1.062$). This suggests that discounts alone are insufficient to trigger impulsive purchasing behavior in the absence of other contextual or psychological cues, such as time pressure or immersive experiences. Consumers may still rely on rational evaluations, thereby mitigating the impulsive effects of discounts. This finding is consistent with Klein and Sharma (2022), who argue that additional persuasive strategies are necessary to convert discounts into impulsive actions.

Hypothesis 5 (H5) is supported, demonstrating that positive emotion significantly influences impulse buying ($p = 0.046$; $t = 1.689$). When consumers experience positive emotions—such as happiness, excitement, or satisfaction—they are more likely to engage in spontaneous purchases without extensive deliberation. Positive affect reduces self-regulatory control and increases the appeal of immediate gratification, reinforcing impulsive decision-making. This is consistent with both the S-O-R theory and findings by Devi and Jatra (2020), which underscore the central role of affective states in impulsive consumer behavior.

Hypothesis 6 (H6) was not supported, as the indirect effect of gamification on impulse buying through positive emotion was not statistically significant ($p = 0.088$; $t = 1.353$). This result indicates that the influence of gamification on purchasing behavior operates more strongly through direct mechanisms rather than emotional mediation. Moreover, individual differences in personality traits—such as extroversion, openness, and neuroticism—may influence emotional responses to gamified experiences. Additionally, the capacity of gamification to

elicit positive emotions may depend on the extent to which it satisfies fundamental psychological needs, including autonomy, competence, and relatedness (Bitrián et al., 2021).

Finally, Hypothesis 7 (H7) was supported, as positive emotion significantly mediated the relationship between price discount and impulse buying ($p = 0.040$; $t = 1.755$). This suggests that the emotional gratification derived from receiving a discount can enhance consumers' likelihood of engaging in impulsive purchases. The perception of value not only increases emotional engagement but also facilitates the transformation of rational incentives into spontaneous buying behavior. This finding reinforces the relevance of the S-O-R framework (Chandon et al., 2000; Mehrabian & Russell, 1974) by demonstrating the mediating role of affective states in consumer decision-making processes.

CONCLUSION

This study aims to examine the influence of gamification and price discounts on impulse buying behavior in e-commerce, with a particular focus on the role of positive emotion as a mediating variable. The primary objective is to understand how external stimuli, such as gamified elements and price discounts, influence positive emotions, and how these emotions, in turn, drive spontaneous purchasing decisions, particularly among Gen Z consumers. The study is grounded in the Stimulus-Organism-Response (S-O-R) framework, which serves as a theoretical basis for explaining the relationship between digital marketing strategies and consumer behavior.

The results reveal that gamification has a direct effect on impulse buying, while its influence on positive emotions is comparatively smaller. In contrast, price discounts have a stronger impact on positive emotions, but do not directly trigger impulse buying. Mediation analysis shows that positive emotion mediates the relationship between price discounts and impulse buying but does not mediate the relationship between gamification and impulse buying. These findings suggest that price discounts first elicit positive emotions, which then facilitate impulsive purchasing behavior, whereas gamification directly influences impulse buying.

The findings of this study offer both practical and strategic insights for e-commerce practitioners, particularly in understanding how gamification and price discounts shape consumer behavior. Gamification has been shown to directly drive impulse buying by enhancing emotional engagement and providing interactive user experiences, making it an effective tool for fostering long-term customer loyalty (Hamari et al., 2014; Hofacker et al., 2016). In contrast, price discounts are more effective in generating positive emotions that indirectly stimulate impulse buying, thus making them a suitable strategy for driving transactions in the short term by creating a sense of urgency (Grewal et al., 2017). The integration of both strategies presents an opportunity to combine short-term and long-term tactics into a comprehensive approach that can boost sales conversions while strengthening customer relationships. Furthermore, these results hold valuable implications for digital platform developers and UX/UI designers, emphasizing the importance of creating interfaces that foster emotional engagement and promote an affection-based shopping experience, ultimately influencing spontaneous purchasing decisions (Bitrián et al., 2021).

Further research is recommended to explore additional mediating variables that may influence the relationship between gamification, price discounts, and impulse buying. Recent studies have highlighted variables such as "brand coolness" as a potential mediator in the relationship between gamification marketing and purchase intention (Liao et al., 2024). Other factors, including perceived enjoyment, perceived value, urgency perception, flow experience, and perceived scarcity, also warrant further investigation to deepen our understanding of consumer behavior in the digital era.

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