From Enjoyment to Impulse: Effects of Gamification and Promotions on Online Buying Behaviour

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Abstract. The transformation of digital commerce in recent years has markedly reshaped consumer behaviour, with impulsive buying emerging as a prevalent phenomenon within online retail environments. Drawing upon the Stimulus–Organism–Response (S-O-R) theoretical framework, this study investigates how gamification and promotional pricing influence impulsive buying, both directly and indirectly, through the mediating role of shopping enjoyment. A cross-sectional survey was conducted among 300 active online shoppers in West Java, Indonesia, a region characterised by its high digital adoption and varied consumer demographics. The research employed Partial Least Squares Structural Equation Modelling (PLS-SEM) to analyse the relationships among four key constructs: gamification, promotional pricing, shopping enjoyment, and impulsive buying. The results reveal that both gamification and promotional pricing exert significant positive effects on shopping enjoyment and, subsequently, on impulsive buying behaviour. Furthermore, shopping enjoyment was found to partially mediate the relationships between the stimuli and impulsive buying, emphasising the pivotal role of affective engagement in e-commerce. These findings substantiate and extend the applicability of the S-O-R model to contemporary online shopping contexts, highlighting the intertwined effects of psychological triggers and marketing strategies on consumer decision-making. The study offers theoretical insights into digital consumer psychology and provides practical recommendations for retailers aiming to design ethically persuasive, emotionally engaging, and commercially effective digital experiences.

Keywords: Gamification, Promotional Pricing, Shopping Enjoyment, Impulsive Buying, Consumer Behaviour.

1 Introduction

The evolution of online commerce in the post-pandemic era has reshaped consumer purchasing behaviour, leading to a notable increase in impulsive buying decisions. This behavioural shift is particularly evident within digital marketplaces, where technological features and psychologically driven marketing strategies are employed to elicit spontaneous purchases. Recent studies consistently report that unplanned buying behaviour is significantly influenced by interactive and affective stimuli within digital environments [1, 2].

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Among the various strategies adopted by retailers, gamification and promotional pricing have emerged as dominant tools in shaping online consumer experiences. Gam- ification refers to the application of game-design elements such as points, badges, and leaderboards in non-game contexts. It is commonly used to enhance user engagement, entertainment, and immersion during online shopping. Scholars have observed that these features stimulate affective responses and increase customer enjoyment, ulti- mately leading to impulsive purchases [3, 4, 5]. However, the influence of gamification is nuanced. While intrinsic elements such as fun and challenge have consistently shown positive effects, extrinsic motivators such as monetary rewards may diminish the per- ceived enjoyment of the experience and potentially reduce long-term engagement [6, 1].

In parallel, promotional pricing strategies such as flash sales, discount codes, or time-limited offers are widely used to stimulate urgency and perceived value. These tactics exploit behavioural triggers such as scarcity, anticipated regret, and loss aversion, all of which reduce rational deliberation and increase purchase intention [7]. Stud- ies show that promotional efforts are even more effective when they are gamified, as the combination enhances emotional arousal and consumer attention [8, 9]. Neverthe- less, some scholars caution that excessive reliance on extrinsic promotional cues may backfire, particularly when not aligned with consumer expectations or platform design [6, 10].

Affective responses, particularly shopping enjoyment, are considered key mechanisms that translate these marketing stimuli into behavioural outcomes. Grounded in the Stimulus–Organism–Response (S-O-R) framework, enjoyment functions as an internal emotional state resulting from external stimuli, subsequently leading to observa- ble consumer behaviours such as impulsive buying [11, 12, 2]. Shopping enjoyment is characterised by pleasure, excitement, and a sense of play, and has been found to me- diate the relationship between both gamification and promotional pricing with un- planned purchase behaviour [3, 13, 14]. Consumers who perceive shopping as enjoya- ble are more likely to respond spontaneously to stimuli, particularly when digital plat- forms are designed to enhance hedonic experiences.

Despite the robust findings reported in existing literature, several gaps remain unaddressed. Most notably, there is limited empirical research examining the combined influence of gamification and promotional pricing on impulsive buying, particularly through the mediating mechanism of shopping enjoyment. Furthermore, previous stud- ies have largely focused on Western or urban consumer groups. Little is known about how these mechanisms operate in emerging markets, especially within regions where digital commerce adoption is accelerating rapidly, such as in Indonesia.

This study seeks to address these gaps by investigating the effects of gamification and promotional pricing on consumer impulsive buying behaviour, mediated by shopping enjoyment. The research is situated in South Sulawesi Province, Indonesia, which provides a representative and diverse population for examining contemporary digital consumer behaviour. The findings are expected to contribute to the theoretical refine- ment of the S-O-R framework within the e-commerce context and to offer practical insights for marketers seeking to design consumer-centred, hedonic, and ethical digital experiences.

2 Literature Review

2.1 Stimulus–Organism–Response (S-O-R) Theory

This study is underpinned by the Stimulus–Organism–Response (S-O-R) theoretical model, originally proposed by Mehrabian and Russell [15]. The model posits that external environmental stimuli (S) influence the internal states or affective reactions of individuals (O), which, in turn, lead to behavioural responses (R). Within the scope of consumer behaviour, this framework has been widely applied to explain how marketing stimuli evoke psychological responses that lead to actions such as impulsive purchasing [1, 2].

In this research, Gamification (GAM) and Promotional Pricing (PRP) are conceptu- alised as environmental stimuli, while Shopping Enjoyment (SEN) represents the or- ganism component, reflecting consumers' internal emotional states. The ultimate be- havioural response is Impulsive Buying (IMP). The S-O-R framework is particularly relevant in interactive digital shopping environments, where emotionally charged stim- uli are strategically deployed to trigger immediate and unplanned purchasing behav- iours [12, 4].

2.2 Gamification and Shopping Enjoyment

Gamification refers to the application of game-like elements such as points, badges, leaderboards, and challenges in non-gaming contexts. It has emerged as a prominent strategy within e-commerce to enhance user experience and foster engagement. Existing literature suggests that gamification has a strong positive impact on consumers' hedonic experiences, primarily by increasing their sense of enjoyment during shopping activities [18, 1, 5].

Specifically, Lim et al. [1] identified "fun" as the most significant predictor of engage- ment in gamified environments, whereas reward-based mechanisms produced incon- sistent effects. These findings are consistent with the S-O-R framework, wherein gam- ified features act as stimuli that enhance emotional engagement, resulting in positive affective states such as enjoyment. Based on this theoretical perspective and empirical evidence, the following hypothesis is proposed:

H1: Gamification has a positive effect on Shopping Enjoyment.

2.3 Promotional Pricing and Shopping Enjoyment

Promotional pricing encompasses marketing strategies such as discounts, time-limited offers, vouchers, and scarcity-based incentives aimed at stimulating consumer demand. These pricing stimuli often evoke urgency and excitement, which in turn enhance the shopping experience [9]. In gamified contexts, promotions are frequently embedded within interactive games, encouraging consumer participation while leveraging psy- chological mechanisms such as effort justification and anticipated regret [3, 7].

The literature consistently highlights the ability of promotional pricing to evoke pos- itive emotions, including arousal and enjoyment, especially in high-engagement digital retail environments. Such emotional responses align with the S-O-R model's organism component, where promotional stimuli positively influence consumers' internal affec- tive states. Based on these considerations, the following hypothesis is formulated:

H2: Promotional Pricing has a positive effect on Shopping Enjoyment.

2.4 Shopping Enjoyment and Impulsive Buying

Shopping enjoyment refers to the intrinsic pleasure and emotional gratification derived from the act of shopping, independent of utilitarian outcomes. It has been identified as a key antecedent to unplanned or spontaneous purchasing behaviour, commonly re- ferred to as impulse buying [11, 16, 2]. Shopping enjoyment increases psychological engagement and reduces cognitive control, thereby enhancing the likelihood of impulse buying [14].

Under the S-O-R paradigm, enjoyment represents the internal emotional state (organism) that is shaped by external stimuli and subsequently triggers behavioural responses such as impulsive purchasing. Numerous empirical studies have established a robust linkage between emotional enjoyment and immediate, unreflective buying deci- sions. Accordingly, the following hypothesis is advanced:

H3: Shopping Enjoyment has a positive effect on Impulsive Buying.

2.5 Gamification and Impulsive Buying

While the affective route through shopping enjoyment is central, recent evidence also indicates a direct effect of gamification on impulse buying. Gamified marketing, particularly when it involves competitive or playful elements, has been found to create immediate emotional arousal that bypasses rational evaluation and encourages spontaneous purchases [2]. This direct pathway is often explained by heightened engagement, immersion, and reduced self-regulation during gameplay-infused shopping [6, 4].

This notion supports the idea that gamified stimuli may act not only through affective mediation but also directly influence consumer responses, as proposed in extended S- O-R applications. Based on this logic, the following hypothesis is proposed:

H4: Gamification has a significant positive effect on Impulsive Buying.

2.6 Promotional Pricing and Impulsive Buying

In addition to evoking enjoyment, promotional pricing has the potential to exert a direct impact on consumer impulse buying. Studies have shown that promotions especially, when framed as urgent or exclusive can create a sense of scarcity and anticipated regret that leads to unplanned purchases [8, 7]. This direct effect often occurs when consumers act quickly to secure perceived deals, bypassing cognitive deliberation.

The literature supports the argument that such pricing stimuli can directly trigger impulsive buying without the necessity of affective mediation, particularly in environments where time pressure and gamified promotions converge. Consequently, the following hypothesis is developed:

H5: Promotional Pricing has a positive effect on Impulsive Buying.

2.7 The Mediating Role of Shopping Enjoyment

A growing body of research highlights shopping enjoyment as a significant mediator in the relationship between gamified or promotional stimuli and impulsive consumer re- sponses [12, 3, 14]. Enjoyment enhances involvement, reduces resistance to buying impulses, and strengthens emotional triggers that precede impulsive decisions. Thus, even when external stimuli are present, the internal emotional experience often serves as the decisive mechanism that explains the behavioural outcome.

In light of these findings, shopping enjoyment is posited to partially mediate the effect of both gamification and promotional pricing on impulsive buying. Accordingly, the following hypotheses are proposed:

H6: Shopping Enjoyment mediates the effect of Gamification on Impulsive Buying.
H7: Shopping Enjoyment mediates the effect of Promotional Pricing on Impulsive Buying.

3 Methodology

This research applies a quantitative approach through a cross-sectional survey design to investigate the influence of gamification and promotional pricing on impulsive buying behaviour, with shopping enjoyment acting as a mediating variable. The study focuses on the Indonesian e-commerce context, where platforms increasingly deploy gamified features and promotional incentives to stimulate consumer engagement. Building upon existing theoretical and empirical foundations, this model is evaluated using Partial Least Squares Structural Equation Modelling (PLS-SEM), a method suitable for exploratory and predictive models that involve latent variables and mediation effects [17].

The study targets consumers residing in West Java Province, Indonesia, who actively engage in digital shopping. West Java is selected based on its demographic richness, status as the most populous province in the country, and high levels of digital infra- structure and e-commerce participation. The region includes major urban and semi- urban areas such as Bandung, Bogor, Bekasi, Depok, and Sukabumi, offering a repre- sentative setting for capturing diverse consumer behaviour. Respondents were required to fulfil specific inclusion criteria: aged between 18 and 45 years, residing in West Java, having completed at least one online purchase within the last three months, and having engaged with gamification or promotional pricing features on platforms such as Shopee or Tokopedia. Examples of such features include Shopee Candy, digital stamp collec- tion, spin-to-win discounts, and flash sales with limited-time offers. These features have

been shown to be highly influential in shaping impulsive behaviour by increasing shop- ping enjoyment and stimulating hedonic motivation [3, 1, 2].

The study employs purposive sampling, a form of non-probability sampling appropriate for behavioural research where participants must have specific experiences [17]. Data were collected through an online questionnaire distributed via social media plat- forms and digital community networks across West Java to ensure broad reach and relevant coverage.

The research model comprises four main constructs. Gamification, the first independent variable, refers to the perception of interactive and playful game-like elements in online shopping environments, such as rewards, badges, and competitions, which have been linked to higher shopping enjoyment and engagement [4, 1]. Promotional pricing, the second independent variable, denotes the perceived attractiveness of tem- porary price incentives including coupons, discounts, and scarcity-based promotions, which are known to drive urgency and impulse [8, 7]. The mediating variable, shopping enjoyment, captures the hedonic pleasure and emotional gratification experienced dur- ing the shopping process and is a key predictor of impulse buying [3, 14, 2]. The de- pendent variable, impulsive buying behaviour, reflects unplanned, emotionally driven purchase actions triggered by situational and promotional cues [1, 16].

Each construct is operationalised as a reflective latent variable and measured using indicators adapted from validated scales in prior studies. All items are measured on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument was constructed in Bahasa Indonesia and reviewed by three subject-matter experts in marketing and consumer behaviour. A pilot test was conducted with 30 qual- ified respondents to ensure clarity, reliability, and relevance. Based on pilot results, minor adjustments were made to phrasing. Reliability and validity measures from the pilot data indicated that Cronbach's Alpha and Composite Reliability exceeded 0.70 for all constructs, confirming initial internal consistency [17].

Data were analysed using SmartPLS version 4, applying the two-step approach recommended for PLS-SEM. The first stage involved evaluation of the measurement model, assessing indicator reliability, internal consistency (via Cronbach's Alpha and Composite Reliability), convergent validity (via Average Variance Extracted), and dis- criminant validity (via Fornell-Larcker criterion and HTMT ratio). The second stage involved assessment of the structural model, including path coefficients, coefficient of determination (R^2), effect sizes (f^2), and significance of hypothesised paths. Signifi- cance testing used a bootstrapping procedure with 5,000 resamples to estimate the pre- cision of path estimates and indirect effects, as suggested by Hair [17].

This research adheres to ethical standards involving human participants. Respondents were informed of the voluntary nature of their participation and provided informed consent digitally before completing the questionnaire. They were assured that all data would remain anonymous and confidential, and that no sensitive personal information would be collected. The study posed minimal risk to participants and followed institu- tional ethical guidelines.

4 Result

This analysis presents the empirical findings of the study, beginning with the demographic and contextual profile of the respondents. Descriptive statistics are provided to illustrate the characteristics of the individuals who participated in the survey, followed by the results of the measurement and structural model assessments using Partial Least Squares Structural Equation Modelling (PLS-SEM). The data were obtained from 300 respondents who met the eligibility criteria defined in the methodology chapter, includ- ing residency in West Java Province, engagement with e-commerce platforms, and prior exposure to gamified features and promotional pricing mechanisms. The details of the respondent demographics and behavioural attributes are summarised in Table 1.

Table 1. Demographic and Behavioural Characteristics of Respondents

Category	Subcategory	Frequency	Percentage
Gender	Male	135	45.0%
	Female	165	55.0%
Age Group	18–25 years	78	26.0%
	26–35 years	127	42.3%
	36–45 years	95	31.7%
Education Level	High school or equivalent	88	29.3%
	Diploma / Undergraduate (D1–S1)	155	51.7%
	Postgraduate (S2/S3)	57	19.0%
Main Activity	Employed (formal/informal)	143	47.7%
	Student	62	20.7%
	Entrepreneur / Online seller	49	16.3%
	Housewife	31	10.3%
	Unemployed / others	15	5.0%
Region of Residence	Bandung (urban)	98	32.7%
	Bogor (semi-urban)	66	22.0%
	Bekasi (urban)	73	24.3%
	Cimahi (semi-urban)	38	12.7%
	Sukabumi & surroundings (rural/coastal)	25	8.3%
E-Commerce Platform Used Most Frequently	Shopee	181	60.3%
	Tokopedia	95	31.7%
	Others (Lazada, Blibli, etc.)	24	8.0%

Familiarity with Gamified Features	Frequently encounter gamification (e.g., Shopee Candy)	212	70.7%
	Occasionally notice gamification	68	22.7%
	Unfamiliar / do not engage	20	6.7%
Response to Promotional Prices	Often purchase due to discounts	246	82.0%
	Rarely influenced by promotions	41	13.7%
	Never influenced	13	4.3%

Source: Primary Data processed 2025

As shown in Table 1, the survey comprised 300 respondents, with a relatively balanced gender distribution consisting of 55.0% female and 45.0% male participants. This com- position reflects a realistic distribution of digital consumers in West Java, where women increasingly participate in online retail activities, particularly in categories such as fash- ion, groceries, and household items. The majority of respondents were between 26 and 45 years of age (74.0% combined), aligning well with the primary age group of digital shoppers in Indonesia, as identified in recent consumer behaviour reports. This age bracket represents both digitally literate and economically active individuals who are most likely to engage with gamified marketing and discount-based promotions.

In terms of education, over half of the respondents (51.7%) held a diploma or under- graduate degree, and a further 19.0% had attained postgraduate qualifications. This level of educational attainment suggests a respondent pool that is generally proficient in interpreting and interacting with digital interfaces such as gamified e-commerce fea- tures. Employment status also supports this finding, as nearly half (47.7%) of partici- pants were employed in either formal or informal sectors, and an additional 16.3% iden- tified as entrepreneurs or online sellers. Students comprised 20.7% of the sample, indi- cating a substantial youth segment within the respondent base, which is relevant given the documented sensitivity of younger users to gamification and hedonic triggers.

Geographically, respondents were distributed across major urban and semi-urban centres in West Java, with the highest proportions from Bandung (32.7%) and Bekasi (24.3%). These cities are recognised as e-commerce hubs with dense populations and high digital penetration. Furthermore, the data indicate strong familiarity with gamified features, with 70.7% of respondents reporting frequent encounters with such mecha- nisms, and 82.0% admitting that promotional prices often influenced their purchase decisions. These findings suggest a high degree of behavioural alignment between the sample and the constructs under investigation in this study.

To ensure the reliability and validity of the measurement model, descriptive statistics and measurement quality indicators were assessed for each latent construct. Table 2 provides a summary of the mean scores, standard deviations, outer loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) for all indicators. The constructs include gamification, promotional pricing, shopping enjoyment, and impulsive buying, which were measured using reflective indicators

adapted from prior studies. These statistics serve as the foundation for evaluating the robustness of the measurement model prior to structural model analysis.

Table 2. Descriptive Statistics and Construct Reliability Indicators

Construct	Item	Mean	St. Dev.	Outer Loading	Cronbach's Alpha	CR	AVE
Gamification (GAM)	GAM1	4.08	0.76	0.832	0.873	0.909	0.667
	GAM2	4.01	0.79	0.819			
	GAM3	4.15	0.82	0.854			
	GAM4	4.12	0.75	0.801			
Promotional Pricing (PRP)	PRP1	4.23	0.69	0.844	0.860	0.899	0.690
	PRP2	4.20	0.71	0.832			
	PRP3	4.18	0.74	0.813			
	PRP4	4.26	0.68	0.822			
Shopping Enjoyment (SEN)	SEN1	4.11	0.81	0.851	0.884	0.918	0.737
	SEN2	4.13	0.78	0.860			
	SEN3	4.09	0.80	0.877			
	SEN4	4.05	0.84	0.812			
Impulsive Buying (IMP)	IMP1	3.97	0.86	0.829	0.871	0.910	0.717
	IMP2	3.92	0.90	0.861			
	IMP3	4.02	0.82	0.852			
	IMP4	3.95	0.85	0.837			

Source: Primary Data processed 2025

The descriptive statistics in Table 2 show that all construct items received generally favourable responses from the 300 participants. The mean scores for gamification items ranged from 4.01 to 4.15, indicating that respondents moderately to strongly agreed with the presence and influence of interactive and game-based features on e-commerce platforms. This aligns with previous findings that highlight consumers' familiarity and engagement with gamified shopping features such as rewards and playful interfaces [3, 2]. Similarly, promotional pricing items scored consistently high, with means ranging from 4.18 to 4.26, reflecting respondents' acknowledgement of frequent exposure to discount-based promotions and their potential impact during shopping sessions. These results are consistent with the assertion that promotional cues are prominent in trigger- ing consumer response during digital transactions [9]. Shopping enjoyment also dis- played relatively high mean values between 4.05 and 4.13, suggesting that participants perceive their online shopping experiences as engaging and pleasurable. The impulsive buying construct yielded slightly lower mean scores, ranging from 3.92 to 4.02, but all

items remained above the scale midpoint, indicating the presence of unplanned purchasing behaviour among respondents.

In terms of measurement quality, all indicators demonstrated acceptable psychomet- ric properties. Outer loading values for each item exceeded the commonly accepted threshold of 0.70, which supports individual indicator reliability [17]. Cronbach's alpha values ranged from 0.860 to 0.884, and composite reliability (CR) values were between 0.899 and 0.918, indicating strong internal consistency reliability. Additionally, aver- age variance extracted (AVE) values for all constructs surpassed the minimum thresh- old of 0.50, with values ranging from 0.667 to 0.737, demonstrating sufficient conver- gent validity [17]. These results suggest that all measurement items reliably captured the intended constructs and that the measurement model meets the standard criteria re- quired for structural model analysis using PLS-SEM.

Following the assessment of the measurement model, the next stage involved evaluating the structural model to examine the hypothesised relationships between constructs. Table 3 presents the results of the path analysis, including the original path coefficients (β), standard deviations, *t*-statistics, *p*-values, and hypothesis decisions. The structural model evaluates five direct paths: from gamification and promotional pricing to shopping enjoyment, and from these constructs, both directly and indirectly, to impulsive buying. The model was assessed using bootstrapping with 5,000 subsamples, as recommended by Hair [17], to test the statistical significance of the hypothesised relationships.

Table 3. Structural Path Analysis and Hypothesis Testing Results

Path	Original Sample (β)	Std. Dev.	*t*-stat.	*p*-values	Decision
GAM → SEN	0.428	0.062	6.903	0.000***	H1 is accepted
PRP → SEN	0.392	0.060	6.533	0.000***	H2 is accepted
SEN → IMP	0.506	0.065	7.785	0.000***	H3 is accepted
GAM → IMP	0.146	0.056	2.607	0.009**	H4 is accepted
PRP → IMP	0.129	0.054	2.389	0.017**	H5 is accepted

Note: $t > 1.96$.*** $p < 0.001$; ** $p < 0.05$.
Source: Primary Data processed 2025

The results of the structural model assessment presented in Table 3 indicate that all hypothesised relationships among the constructs are statistically significant. The path coefficient from Gamification (GAM) to Shopping Enjoyment (SEN) yields a standardised β value of 0.428 with a *t*-statistic of 6.903 ($p < 0.001$), suggesting a strong and positive relationship. Similarly, Promotional Pricing (PRP) shows a positive influence on Shopping Enjoyment, with a coefficient of 0.392 ($t = 6.533$, $p < 0.001$). These results indicate that both gamification and promotional pricing have a meaningful impact on consumers' perceived enjoyment during the shopping experience.

Moreover, the relationship between Shopping Enjoyment (SEN) and Impulsive Buy- ing (IMP) is also strong and significant ($\beta = 0.506$, $t = 7.785$, $p < 0.001$), highlighting the importance of the emotional aspect of shopping in influencing unplanned purchase behaviour. In addition to these indirect pathways, Gamification (GAM) and

Promotional Pricing (PRP) also exhibit direct positive effects on Impulsive Buying, with β values of 0.146 and 0.129 respectively, both achieving significance at the 0.05 level ($t = 2.607$ and $t = 2.389$).

Overall, the structural model supports the acceptance of all hypothesised relationships, with each path exceeding the minimum *t*-statistic threshold of 1.96. These findings confirm the statistical adequacy of the model and indicate the presence of both direct and mediated effects among the constructs. Further examination of the mediation effects will be reported in the subsequent section.

To assess the mediating role of Shopping Enjoyment (SEN), a bootstrapping procedure with 5,000 subsamples was employed to test the significance of indirect effects. This approach is in line with the recommendations of Hair [17], particularly when using Partial Least Squares Structural Equation Modelling (PLS-SEM). Table 4 presents the results of the mediation analysis, specifically examining whether Shopping Enjoyment mediates the relationship between Gamification and Impulsive Buying, as well as be- tween Promotional Pricing and Impulsive Buying.

Table 4. Mediation Analysis Results of Indirect Effects

Hypothesis Code	Mediation Path	Indirect Effect	*t*-stat	*p*-value	Result
H6	GAM → SEN → IMP	0.217	4.902	0.000	Supported; Partial Positive Mediation
H7	PRP → SEN → IMP	0.198	4.587	0.000	Supported; Partial Positive Mediation

Note: $t > 1.96$ indicates significance at $p < 0.05$
Source: Primary Data processed 2025

The results of the mediation analysis demonstrate that Shopping Enjoyment (SEN) plays a significant mediating role in the relationships between both Gamification (GAM) and Promotional Pricing (PRP) with Impulsive Buying (IMP). Specifically, the indirect effect of GAM on IMP via SEN (H6) is statistically significant, with a coeffi- cient of 0.217, a *t*-statistic of 4.902, and a *p*-value less than 0.001. This indicates the presence of a partial positive mediation, as the direct effect from GAM to IMP remained significant in the structural model.

Similarly, the indirect path from PRP to IMP through SEN (H7) is also significant, yielding an indirect effect coefficient of 0.198, with a *t*-statistic of 4.587 and a *p*-value below 0.001. This result likewise supports partial mediation. These findings suggest that while gamification and promotional pricing directly influence impulsive buying, their impact is considerably enhanced when mediated by consumers' perceived enjoyment during the shopping experience.

5 Discussion

The findings of this study confirm the significant influence of gamification and promo- tional pricing on consumers' impulsive buying behaviour, both directly and indirectly through the mediating role of shopping enjoyment. These results are consistent with the theoretical underpinning of the Stimulus–Organism–Response (S-O-R) model, which posits that external stimuli (in this case, gamification and promotional pricing) affect internal emotional states (shopping enjoyment), leading to observable behavioural out- comes (impulsive buying) [1, 15, 2].

From a theoretical perspective, the results contribute to a more nuanced understand- ing of how hedonic and promotional stimuli interact in digital retail environments. The robust direct relationship between gamification and shopping enjoyment ($\beta = 0.428$, $p < 0.001$) supports prior findings that game elements such as points, challenges, and rewards enhance affective engagement during online shopping [3, 1, 5]. Similarly, pro- motional pricing demonstrates a significant effect on shopping enjoyment ($\beta = 0.392$, $p < 0.001$), validating earlier assertions that urgency-inducing offers and discounts can heighten emotional responses and perceived pleasure [9]. The combined effect of these stimuli through shopping enjoyment reinforces the mediating role of affective engage- ment, affirming the S-O-R framework's relevance in digital commerce contexts.

Furthermore, the mediation analysis confirms that shopping enjoyment partially me- diates the relationship between both independent variables and impulsive buying, indi- cating that while stimuli have a direct behavioural impact, their effects are significantly amplified through emotional engagement. This finding is in line with prior research that identifies shopping enjoyment as a key mechanism that bridges external marketing ef- forts with internal consumer responses [12, 3, 14].

The implications for practice are substantial. E-commerce platforms should recog- nise that beyond functional convenience, creating affectively rich shopping experiences is crucial for stimulating consumer engagement and purchase behaviour. Features such as interactive games, leaderboards, reward systems, and gamified discount mechanisms can increase not only customer retention but also transaction frequency. This is partic- ularly relevant in regions like West Java, Indonesia, where digital adoption is high, and consumers display strong sensitivity to both hedonic and promotional cues.

Retailers should also be cautious not to over-rely on extrinsic rewards, which may diminish long-term engagement. Instead, integrating intrinsic game elements that evoke challenge, surprise, and discovery may yield more sustainable outcomes [6, 1]. More- over, promotional pricing should be designed with behavioural triggers in mind lever- aging scarcity and time limitations effectively, while maintaining transparency and per- ceived fairness to avoid consumer backlash [7].

6 Conclusion

This study investigated the influence of gamification and promotional pricing on con- sumers' impulsive buying behaviour, with shopping enjoyment acting as a mediating variable. Grounded in the Stimulus–Organism–Response (S-O-R) framework, the

research model conceptualised gamification and promotional pricing as external stimuli that shape emotional responses, ultimately leading to impulsive behavioural outcomes.

The findings revealed that both gamification and promotional pricing have a significant and positive effect on shopping enjoyment. Shopping enjoyment, in turn, significantly drives impulsive buying. Moreover, both independent variables also exhibited a direct influence on impulsive buying, confirming their dual impact both directly and through affective mediation. The mediating analysis indicated that shopping enjoyment partially mediates the relationship between the stimuli and the consumer response.

Overall, the results confirm the importance of emotional experience in consumer decision-making, particularly within online and digitally mediated shopping environments. By demonstrating that gamification and pricing strategies can effectively elicit enjoyment and stimulate spontaneous purchasing, the study highlights the relevance of integrating psychological engagement into digital marketing strategies. This study of- fers a valuable contribution to marketing theory by affirming the applicability of the S- O-R model in the context of modern retail, particularly within gamified and promotion- ally driven online experiences. It also enriches the understanding of emotional media- tion in consumer behaviour, highlighting shopping enjoyment as a pivotal construct in linking external marketing stimuli with internal behavioural responses.

Future research is recommended to explore additional mediating variables such as perceived value, flow, or trust. Investigating the role of demographic or cultural moderators may further refine theoretical insights, especially given the variability in consumer responses across different segments. From a managerial perspective, businesses should invest in gamification strategies that enhance intrinsic enjoyment, such as through interactive features, competition, or social engagement. Relying solely on extrinsic rewards may yield short-term gains but can reduce consumer loyalty over time. Promotion designs should incorporate time-limited offers or interactive mechanisms that encourage positive emotional engagement without exploiting consumer impulsivity unethically. Marketing strategies should be tailored to consumer segments that are more responsive to hedonic cues. Designing enjoyable, playful, and emotionally engaging shopping experiences can be a powerful driver of conversion and brand differentiation, especially in increasingly saturated digital markets.

References

1. Sofyani, H.: “It’s not all fun and games: Gamification in e-commerce on consumers’ impulse buying of retail food products,” British Food Journal, 127(3), 1098–1113 (2025).
2. Zhang, L.: “Gamification and online impulse buying: The moderating effect of gender and age,” International Journal of Information Management, 61, 102267 (2021).
3. Che, T.: “The impacts of gamification designs on consumer purchase: A use and gratification theory perspective,” Electronic Commerce Research and Applications, 59, 101268 (2023).
4. Ho, Y. J. I.: “Fun shopping: A randomized field experiment on gamification,” Information Systems Research, 34(2) (2023).

5. Xu, X. Y.: "Exploring the gamification affordances in online shopping with the heterogene- ity examination through REBUS-PLS," Journal of Theoretical and Applied Electronic Com- merce Research, 18(1) (2023).
6. Bauer, J. C.: "Gamifying the digital shopping experience: Games without monetary participation incentives increase customer satisfaction and loyalty," Journal of Service Management, 31(3) (2020).
7. Wu, Y.: "How does scarcity promotion lead to impulse purchase in the online market? A field experiment," Information & Management, 58(1), 103283 (2021).
8. Bandyopadhyay, N.: "Immediate or delayed! Whether various types of consumer sales promotions drive impulse buying? An empirical investigation," Journal of Retailing and Consumer Services, 61, 102532 (2021).
9. Hock, S. J.: "Promotional games increase consumer conversion rates and spending," Journal of Consumer Research, 47(1) (2020).
10. Shahzad, M. F.: "Impact of gamification on green consumption behavior integrating technological awareness, motivation, enjoyment and virtual CSR," Scientific Reports, 13(1) (2023).
11. Arghashi, V.: "Shopping with augmented reality: How wow-effect changes the equations!," Electronic Commerce Research and Applications, 54, 101166 (2022).
12. De Canio, F.: "Engaging shoppers through mobile apps: The role of gamification," International Journal of Retail and Distribution Management, 49(7), 919–940 (2021).
13. Huang, Q.: "Is 'she' more impulsive (to pleasure) than 'him' during livestream e-commerce shopping?," Journal of Retailing and Consumer Services, 78, 103707 (2024).
14. Kaur, J.: "Exploring the impact of gamification elements in brand apps on the purchase intention of consumers," Journal of Global Information Management, 31(1) (2023).
15. Mehrabian, A., & Russell, J. A.: An approach to environmental psychology. MIT Press, (1974).
16. Lin, S. C.: "Exploring factors influencing impulse buying in live streaming shopping: A stimulus–organism–response (SOR) perspective," Asia Pacific Journal of Marketing and Logistics, 35(6) (2023).
17. Hair, J., & Alamer, A.: "Partial least squares structural equation modeling (PLS-SEM) in second language and education research: Guidelines using an applied example," Research Methods in Applied Linguistics, 1(3), 100027 (2022).
18. Chen, C., & Li, X.: "The effect of online shopping festival promotion strategies on consumer participation intention," Industrial Management & Data Systems, 120(12) (2020).

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