

The Metaverse Wardrobe: Gamified Fashion Marketing and Gen Z Engagement

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ABSTRACT

In the digital age, Gen Z consumers exhibit a strong preference for interactive and immersive online experiences, challenging traditional marketing strategies. This research examines the role of gamification and virtual rewards in fashion marketing as tools to enhance consumer engagement and brand loyalty among this demographic. Data collected from 570 respondents aged 18–24 demonstrates that virtual rewards and social features significantly enhance consumer engagement, which in turn strongly predicts brand loyalty. Findings underscore the potential of gamification in transforming consumer-brand interactions in the fashion industry, with practical implications for marketers aiming to connect with Gen Z audiences. The study also highlights the importance of aligning gamification elements with consumer preferences to maximize engagement and loyalty, offering insights into sustainable and innovative digital marketing practices.

Key Words: Gamification, Virtual Rewards, Gen Z, Fashion Marketing, Consumer Engagement, Brand Loyalty, AR/VR.



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Introduction

In the digital age, brands are increasingly experimenting with innovative marketing strategies to capture the attention of Gen Z, a generation known for its digital fluency and strong preference for interactive online experiences. Gamification in fashion marketing, which incorporates game-like elements such as virtual rewards, achievements, and in-game purchases, has emerged as a promising tool to foster brand loyalty and engagement. By Integrating these interactive elements, brands aim to transform traditional shopping into an engaging experience that resonates with tech-savvy consumers who expect more than just a purchase—they seek memorable experiences.

This study investigates the impact of gamification and virtual rewards within the fashion industry as a marketing strategy, focusing on its effectiveness in driving engagement among Gen Z consumers. Gamification strategies in fashion include reward-based systems (such as virtual points or exclusive content), fashion-centric games, and AR/VR applications that allow users to experiment with virtual clothing. These elements not only personalize the shopping experience but also create a sense of achievement and connection to the brand. With the growing potential of gamified experiences, this research examines the question: To what extent can virtual rewards and achievements in

gamified environments increase engagement and brand loyalty in the fashion industry?

While several industries have successfully leveraged gamification, its specific application in fashion remains underexplored. This study seeks to fill that gap by examining how fashion brands can capitalize on gamification, exploring both its benefits and potential challenges. The insights gained could be pivotal for fashion marketers looking to create meaningful and lasting connections with younger audiences who are accustomed to interactive digital experiences. This research investigates whether gamification and virtual rewards in fashion marketing can bridge the gap between brand and consumer engagement, particularly in the context of Gen Z and enhance consumer loyalty and engagement for fashion brands. The main objectives of this study are:

- To examine how virtual rewards (e.g., points, badges, discounts) influence consumer engagement and brand loyalty in gamified fashion marketing.
- To analyze the effect of social features (e.g., leaderboards, competitions) on consumer engagement and their subsequent impact on brand loyalty.
- To investigate the role of interactivity (e.g., AR/VR try-ons, in-game purchases) in enhancing consumer engagement and driving brand loyalty.
- To explore the mediating effect of consumer engagement on the relationship between

gamification elements (virtual rewards, social features, interactivity) and brand loyalty.

Literature Review and Hypothesis Development

The literature on gamification and virtual rewards in digital marketing is expansive, with numerous studies suggesting that interactive, game-like elements positively influence consumer behaviour. However, specific research on gamification within the fashion sector, particularly its effect on Gen Z consumers, is limited.

Deterding et al. (2011) defined gamification as the use of game mechanics in non-gaming contexts to engage users and enhance experiences. In marketing, gamification has been shown to positively impact user engagement by offering immediate rewards and creating a competitive or rewarding environment (Hamari et al., 2014). Werbach and Hunter (2012) explored the mechanics behind successful gamification, such as points, badges, and leaderboards, which foster a sense of achievement and progress. A study by Pace & Perito (2022) highlights that gamification in the fashion retail industry can enhance customer engagement, loyalty, and brand awareness. However, its effectiveness depends on understanding customer preferences and ensuring the gaming elements align with brand identity. Rane et al. (2023) explore the area of Metaverse for enhancing customer loyalty and posit that tailored avatars, immersive environments, and gamified experiences act as key strategies for retaining customer loyalty in the Metaverse. They further emphasize the importance of aligning digital experiences with user preferences for effective brand building. Kumari & Gujral (2023) explore the impact of gamification elements on consumer behaviour using the Self-Determination Theory framework and submit that gamification elements like rewards and challenges positively influence consumer motivation, purchase intentions, and engagement. Systematic literature review conducted by Tobon et al. (2020) investigates how gamification affects online consumer behaviour and underscores the fact that gamified elements, such as rewards, challenges, and social interactivity, enhance user engagement and promote positive consumer decisions, including purchase intent and loyalty.

Few researchers have also studied the impact of fashion gamification with special focus on Gen Z. Evgenieva (2024) highlights that innovative marketing technologies like gamification, influencer marketing, and personalized content resonate strongly with Generation Z which is a digitally native audience. A study by Prensky (2001) indicates that Gen Z, having grown up with digital technologies, is particularly receptive to gamified experiences and unlike prior generations, they expect a high level of interactivity in their online interactions and are more likely to connect with brands that offer innovative, experience-based marketing. Zichermann & Linder (2013) assert that virtual rewards, which offer a sense of achievement and

exclusivity, are shown to increase brand loyalty by creating positive associations with the brand particularly among younger audiences, who seek personalization and interactivity in their brand relationships. A study by Medina (2023) highlights that branded fashion products in gaming metaverses, such as Roblox, attract Gen Z consumers by leveraging gamified and personalized experiences. Key factors like avatar customization, emotional connection, and social interaction drive purchase decisions and sustained engagement within the platform. Donhauser (2024) studied the role of immersive brand environments in building both attitudinal and behavioural loyalty among Gen Z consumers and found a significant positive relationship between the two. Tu & Binh (2023) explored the role of gamification in influencing Gen Z's online impulse buying behaviour with special reference to the Vietnamese market by using theoretical frameworks like SOR (Stimulus-Organism-Response) and Theory of Mind, and concluded that gamified elements, such as badges, points, and random rewards, enhance both cognitive and emotional engagement, leading to increased purchase intentions.

The research by Aidanpää, (2023) reveals that Virtual Reality (VR) can enhance the fashion shopping experience by offering immersive and interactive environments and suggest that participants view VR as a tool for promoting sustainability, though its widespread adoption requires addressing concerns related to accessibility and practicality. Lau & Ki (2021) demonstrate that VR fashion apps, like Taobao Life, enhance consumer purchase intentions by integrating gamification, personalization, and social engagement. They further posit that features such as avatar customization and game-like challenges effectively satisfy intrinsic needs for autonomy and competence, which drive continuous app use and in-app purchases. Choi et al. (2020) posit that Fashion brands, such as Gucci and Nike, have successfully implemented gamified elements like AR fashion try-ons and virtual items, which drive engagement and brand perception.

The present study views fashion gamification as a multi-dimensional concept encompassing varied aspects based on which Gen Z customers align themselves with a fashion brand and how can the brand use gamification techniques to enhance consumer loyalty and engagement. The study is based on five constructs namely Virtual rewards, social features, interactivity, consumer engagement and brand loyalty. Out of these five, first three are independent constructs whose impact on the dependent variable consumer engagement is studied. Further the mediating effect of consumer engagement on the relationship between gamification elements and brand loyalty is studied. Figure 1 exhibits the framework for the study and the hypotheses thus proposed. Table 1 depicts the various items used to measure the five latent constructs.

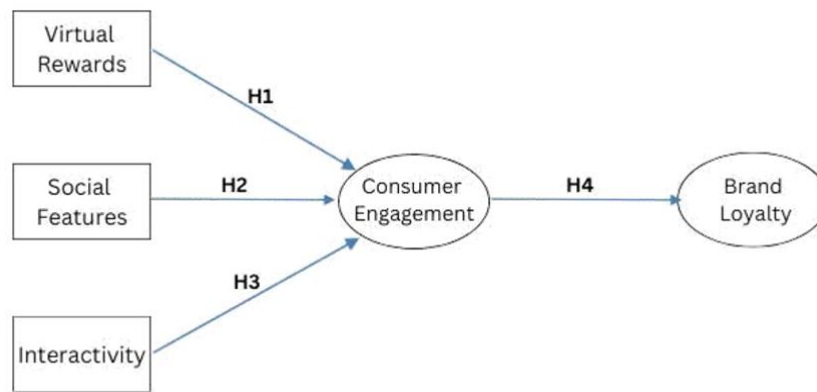


Figure 1: Conceptual Framework of the study

Proposed Hypotheses

- **H0:** Virtual rewards, social features, and interactivity do not significantly affect consumer engagement, and consumer engagement does not mediate the relationship between these gamification elements and brand loyalty.
- **H1:** Virtual rewards positively and significantly affect consumer engagement.
- **H2:** Social features positively and significantly affect consumer engagement.
- **H3:** Interactivity positively and significantly affects consumer engagement.

- **H4:** Consumer engagement positively and significantly affects brand loyalty

The study also aims at examining whether consumer engagement would mediate the relationship between gamification elements and brand loyalty. Thus, the following hypothesis is proposed:

- **H5:** Consumer engagement mediates the relationship between:
 - a. Virtual rewards and brand loyalty
 - b. Social features and brand loyalty
 - c. Interactivity and brand loyalty

Table 1: Constructs of the study

Virtual Rewards (e.g., points, badges, discounts)	VR1	I find the virtual rewards (e.g., points, badges, discounts) offered by fashion brands appealing.
	VR2	The rewards make me feel valued or exclusive as a customer.
	VR3	I actively participate in earning virtual rewards (e.g., completing tasks, purchases).
	VR4	The availability of virtual rewards motivates me to engage with the brand more frequently.
Social Features (e.g., leaderboards, competitions, give away competitions)	SF1	Leaderboards or rankings make the shopping experience more engaging.
	SF2	I enjoy participating in competitions or challenges hosted by fashion brands.
	SF3	I share my achievements (e.g., rewards, ranks) on social media or within the brand's platform.
	SF4	I feel connected to the brand community through its social features.
Interactivity (e.g., AR/VR try-ons, in-game purchases)	I1	I enjoy using AR/VR try-ons to visualize products before purchasing.
	I2	The interactive features provided by the brand enhance my shopping experience.
	I3	In-game purchases or activities within the brand's platform are appealing to me.
	I4	I spend more time on platforms that offer interactive features.
Consumer Engagement	CE1	I often explore the brand's interactive features (e.g., AR/VR, games) during my shopping sessions.
	CE2	I feel emotionally connected to brands that offer engaging gamified features.
	CE3	The interactive elements make me return to the brand's platform frequently.
	CE4	I enjoy the overall experience provided by gamified fashion platforms.

Brand Loyalty	BL1	I am likely to recommend the brand to others because of its interactive features.
	BL2	The brand's gamified features make me prefer it over competitors.
	BL3	I would continue to purchase from a brand that uses gamification elements in the future.
	BL4	I feel loyal to brands that incorporate gamification in their marketing strategies.

Research Methodology

The study employs a quantitative research approach, allowing for the systematic analysis of relationships between gamification elements (Virtual Rewards, Social Features, Interactivity) and consumer outcomes (Engagement and Brand Loyalty). A descriptive research design is adopted to explore how these gamification elements influence the behaviour of Gen Z consumers. Quantitative methods are used to collect and analyze numerical data, enabling the identification of statistical relationships and patterns among variables. The study employed convenience sampling, a non-probability sampling method, to select participants based on accessibility and willingness to participate. This method was particularly effective for gathering responses from Gen Z consumers who are active on gamified fashion platforms, ensuring efficient data collection. The framework has been analyzed using SPSS 31.0 and AMOS 31.0.x. Structural Equation Modelling (SEM) which is an advanced technique of hypothesis testing & Model Development has been used to test the framework.

Web link of the questionnaire was sent to 700 prospective respondents and produced 590 returned responses. Of these, 20 questionnaires have been eliminated because they either appeared unreliable or were incomplete. Finally, a total of 570 usable surveys provide the data for analysis. The study targeted gen Z, urban and semi urban tech savvy consumers in the age group of 18 to 24 years who were active on digital platforms offering gamified fashion experiences.

Data Analysis & Findings

Analysis of the demographic data collected from the respondents shows that about 84.8% of respondents are less than 24 years indicating large portion of Gen Z respondents. A very small portion of about 15.2% of respondents were 25 & above. Since the study pertains to fashion gamification, as expected the number of female respondents is higher (65.6%) while 34.4% Males responded. Out of the total respondents approximately 66.3% respondents engaged frequently with gamified features in fashion marketing, around 17.4% engaged less frequently and 16.3% engaged rarely with gamified features in fashion marketing

In this section, each construct is first examined for its reliability and validity. Subsequently, the hypotheses developed in the previous section are tested, leading to the development and assessment of the final structural equation model. Reliability and validity of the constructs are evaluated using Cronbach's alpha, where a value of 0.7 or above signifies strong reliability. Table 2 presents the mean (M), standard deviation (SD), and Cronbach's alpha (α) for all constructs. Following the guidelines of Fornell and Larcker (1981) and Hair et al. (2006), construct reliability and validity are further assessed through composite reliability (CR) and average variance extracted (AVE), with threshold values of 0.7 and 0.5, respectively. As indicated in Table 2, all CR, AVE, and Cronbach's alpha values surpass the recommended benchmarks, demonstrating a high level of reliability. Correlation statistics of all five constructs are shown in table 3.

Table 2 Construct reliability and validity statistics

Construct Name	M	SD	α	CR	AVE
Virtual Rewards (VR)	3.84	0.57	0.959	0.97	0.892
Social Features (SF)	3.83	0.60	0.950	0.964	0.869
Interactivity (I)	4.06	0.51	0.939	0.956	0.846
Consumer Engagement (CE)	3.83	0.66	0.943	0.959	0.869
Brand Loyalty (BL)	3.84	0.69	0.941	0.958	0.892

Table 3: Correlation Statistics of the constructs

Construct Name	VR	SF	I	CE	BL
Virtual Rewards (VR)	0.922				
Social Features (SF)	0.810	0.925			
Interactivity (I)	0.655	0.810	0.920		
Consumer Engagement (CE)	0.804	0.907	0.799	0.932	
Brand Loyalty (BL)	0.694	0.790	0.704	0.835	0.944

The Fornell-Larcker criterion confirms discriminant validity if the square root of the AVE (diagonal values) for each construct is greater than its correlation with other constructs. The discriminant validity is

confirmed, as each construct is distinct from the others. This means the constructs are measuring unique dimensions in the model.

Having established a theoretically defensible model, structural equation modelling (SEM) was conducted to test hypothesized relationships as depicted in figure 2. All SEM models were assessed against the generally accepted fit indices: $\chi^2/df < 2$, Tucker Lewis Index (TLI) $> .90$, Goodness-of-fit Index (GFI) $> .80$,

Comparative Fit Index (CFI) $> .95$, Root-Mean-Square Error of Approximation (RMSEA) < 0.08 . As shown by table 4, the model demonstrates excellent fit indices, further validating the structural relationships and constructs.

Figure 2: Structural Equation Model

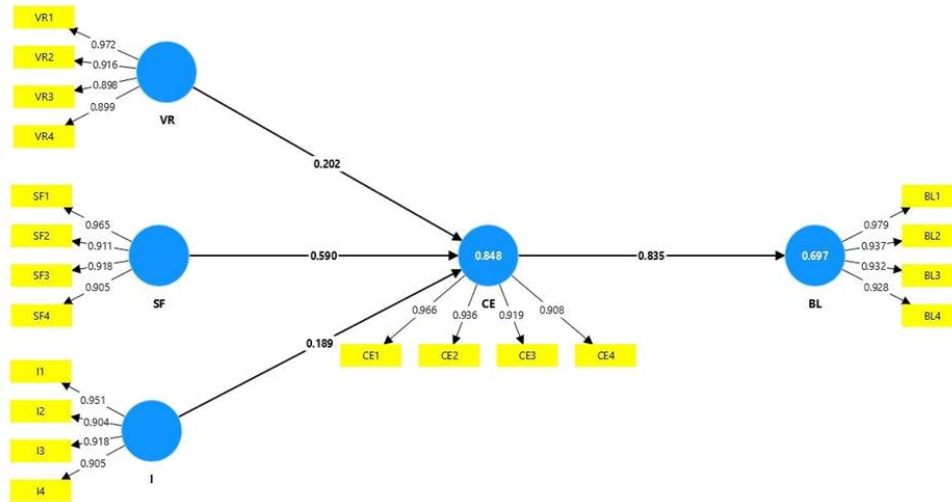


Table 4: Goodness of fit-statistics for Structural equation model

χ^2	df	χ^2/df	CFI	GFI	TLI	SRMR	RMSEA
1810.06***	479	3.7	.923	.79	.89	.032	.05

Notes: N = 570; *** p < 0.001

Table 5 shows the results of Hypothesis testing between independent variable and dependent variable, Path coefficients, t-statistic and P value are shown. It is evident that all hypotheses were supported. The results indicate a positive but moderate relationship between virtual rewards and customer engagement. As virtual rewards increase, customer engagement also rises to some extent. The t-statistic is highly significant (p = 0.000), confirming that the impact of virtual rewards on engagement is statistically significant and not due to chance. Social features also positively influence customer engagement, though the effect size is moderate. The very high t-statistic and significant p-

value suggest that the relationship is robust and meaningful in the context of the research. Similar to social features, interactivity positively affects customer engagement, though the effect size is moderate. The significant t-statistic demonstrates that interactivity's influence on engagement is statistically reliable. The results show a strong and substantial positive relationship between customer engagement and brand loyalty. Increased engagement significantly drives brand loyalty. The extremely high t-statistic and p-value indicate a very strong and statistically significant relationship.

Table 5: Hypotheses testing results

SNo	Description	Path Coefficient	t-Statistic	p-Value	Result
H1:	Virtual rewards positively and significantly affect consumer engagement.	0.202	4.765	***	Supported
H2:	Social features positively and significantly affect consumer engagement	0.590	9.332	***	Supported
H3:	Interactivity positively and significantly affects consumer engagement.	0.189	4.352	***	Supported
H4:	Consumer engagement mediates the relationship between gamification elements and brand loyalty.	0.835	55.533	***	Supported

*** p < 0.001

Mediation analysis was carried out using bootstrapping approach through SPSS macro-PROCESS model 4 (Hayes, 2013). To assess indirect effects through attitude, bootstrapping approach was used. Mediation

was tested by running four separate PROCESS Model 4 analyses. Using 5000 bootstrap samples, the indirect effects were calculated. An indirect effect (IE) is considered significant if its 95% confidence intervals

(95% CI's) does not include a zero. Table 6 shows the results of mediation analysis. Indirect effect of Virtual rewards on brand loyalty, IE = 0.26, (SE = 0.02) 95%

CI: 0.20, 0.31 was greater than zero. On similar lines, results for other hypotheses b, and c. H 5 (a, b, and c) was thus supported.

Table 6: Results of Mediation Analysis

	β	SE	95%CI	
			Lower Bound	Upper Bound
H5 a: VR→CE→BL	0.26	0.02	0.20	0.31
H5 b: SF→CE→BL	0.43	0.03	0.36	0.50
H5 c: I→CE→BL	0.39	0.03	0.31	0.47

Results of data analysis suggest that Virtual rewards, social factors and interactivity have a very significant positive impact on Consumer engagement which in turn greatly and positively impacts brand loyalty. It can be concluded that Marketeers can use gamification elements to significantly increase consumer engagement and eventually increase the brand loyalty amongst Gen Z consumers. Results of the mediation analysis indicates the influence of all gamification elements on brand loyalty is mediated by consumer engagement.

Conclusion

This research highlights the significance of gamification and virtual rewards in transforming fashion marketing strategies to engage the tech-savvy Gen Z demographic. By integrating elements such as virtual rewards, social features, and interactivity, brands can enhance consumer engagement and foster brand loyalty. The study confirms that these gamification components positively influence engagement, which in turn strongly mediates their impact on loyalty, offering a clear pathway for marketers to connect with younger audiences effectively.

The findings emphasize that social features, such as leaderboards and competitions, have the most substantial impact on engagement, followed by virtual rewards and interactivity. This underscores the importance of fostering community and personalization in gamified marketing efforts. Furthermore, the strong link between consumer engagement and brand loyalty reinforces the critical role of immersive and interactive experiences in driving long-term customer relationships.

While the study makes significant contributions to understanding gamification in the fashion industry, it also acknowledges its limitations, including sampling constraints, geographic focus, and reliance on cross-sectional data. These limitations present opportunities for future research to explore broader contexts, diverse demographics, and emerging technologies such as the Metaverse and AI-driven personalization.

In conclusion, gamification is a powerful strategy for brands seeking to resonate with Gen Z consumers. By aligning gamified experiences with consumer preferences and maintaining authenticity, fashion

marketers can not only enhance engagement but also build sustainable brand loyalty, positioning themselves as leaders in the competitive digital marketplace.

Implications for Practice

The results of this study suggest several key implications for practitioners seeking to enhance consumer engagement through gamified marketing. Organizations should leverage personalized virtual rewards—such as points, badges, discounts, and exclusive content—to motivate participation and strengthen emotional connections with the brand. Integrating social features, including leaderboards, competitions, and sharing tools, can foster a sense of community and amplify brand visibility through peer interaction. Investment in interactive technologies such as augmented reality (AR) and virtual reality (VR) can further enhance the consumer experience, offering immersive features like virtual try-ons that appeal to technologically adept audiences and encourage repeat engagement. It is also critical that gamification strategies align with the brand's core values and aesthetic to maintain authenticity and coherence. Furthermore, integrating sustainability and ethical considerations into gamified initiatives—such as promoting environmentally responsible virtual products—can reinforce brand credibility and appeal to ethically conscious consumer segments, particularly within Generation Z.

In addition, practitioners should prioritize long-term engagement over short-term promotional outcomes. Sustained participation can be encouraged through evolving loyalty programs and continuous challenges that reward ongoing interaction. The application of data analytics is essential for understanding consumer preferences and tailoring gamified experiences accordingly, thereby enhancing personalization and loyalty. Regular evaluation of engagement metrics, repeat purchase rates, and user feedback enables practitioners to assess effectiveness and adapt strategies to emerging trends. Moreover, designing for accessibility and inclusivity ensures that gamified experiences are intuitive and usable across diverse consumer groups, including those with varying levels of digital literacy. Finally, educating consumers on the benefits and functionality of gamified features can increase their confidence and willingness to participate. Collectively, these implications emphasize the need for gamification strategies that are authentic, data-driven, sustainable, and inclusive to foster meaningful and enduring consumer relationships.

Implications for Research

The findings of this study underscore the need for further empirical investigation into the mechanisms by which gamification influences consumer engagement, brand loyalty, and purchase intentions across diverse market contexts. Future research should explore the mediating and moderating factors that shape the effectiveness of gamified marketing strategies, such as consumer motivation, digital literacy, and cultural differences. Comparative studies across generational cohorts could also provide deeper insights into how preferences for gamified features differ between Gen Z, Millennials, and older consumers. Additionally, there is scope to examine how various types of rewards—monetary, symbolic, or experiential—affect emotional attachment and long-term behavioral outcomes. Longitudinal studies are particularly needed to assess whether gamification yields sustained engagement over time or whether its effects diminish once novelty declines.

Moreover, future research should consider the ethical and psychological dimensions of gamification, including issues of data privacy, consumer manipulation, and the potential for addictive behaviors. Investigating how transparency and ethical design influence trust and brand perception would contribute to a more holistic understanding of responsible gamification. Scholars may also examine how emerging technologies—such as artificial intelligence, augmented reality, and virtual reality—can be integrated into gamified marketing in ways that balance innovation with user well-being. Finally, expanding research beyond commercial contexts to include non-profit, educational, and sustainability-driven applications of gamification would enrich the theoretical foundations of the field and inform best practices for diverse industries. Collectively, these avenues of inquiry highlight the need for interdisciplinary approaches that bridge marketing, psychology, technology, and ethics to advance the academic understanding of gamified consumer experiences.

Limitations and Future Research Directions

This study has several limitations that should be considered when interpreting the findings. The use of convenience sampling may have introduced sampling bias, as participants were primarily Gen Z consumers active on gamified fashion platforms. Consequently, the results may not fully represent the views of less tech-savvy individuals within this demographic. Additionally, the study focused on urban and semi-urban consumers, potentially overlooking behavioral differences among Gen Z individuals in rural or less digitally advanced regions. The cross-sectional design also limits the ability to assess changes in consumer attitudes and engagement over time; thus, longitudinal studies would provide deeper insights into the long-term effects of gamification on consumer loyalty. Furthermore, the study examined only selected gamification elements—such as virtual rewards, social features, and interactivity—while other influential

aspects like storytelling, progression systems, or multiplayer dynamics were not explored. The reliance on self-reported data introduces the potential for social desirability bias, and assumptions about participants' digital literacy and access to technology may not hold true across all population segments. Finally, as the study focuses exclusively on Gen Z consumers, the findings may not be generalizable to other generational cohorts.

Future research should address these limitations by employing more diverse and representative sampling methods, including participants from different geographic, cultural, and technological backgrounds. Longitudinal and cross-generational studies could offer valuable insights into how gamification influences consumer engagement over time and across age groups. Expanding the range of gamification elements examined, as well as incorporating mixed methods or experimental designs, may further enhance understanding of how different features shape user experience and brand loyalty. Additionally, exploring ethical considerations, sustainability, and inclusivity in gamified marketing would contribute to a more holistic and responsible framework for future applications.

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