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Pixels to Purchases: The Influence of In-Game Ad Interactivity, Brand Attitude, and Game-Product Congruence on Buying Intentions

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ABSTRACT

This study investigates the impact of IGA interactivity on purchase intention, with brand attitude as a mediator and game-product congruence as a moderator. With the growing digital marketing, it is imperative to understand the role of interactivity in shaping consumer behavior for advertisers and game developers. This study employed a quantitative survey method to collect data from 353 PUBG Mobile players exposed to McLaren IGA using convenience sampling. To measure key constructs validated questionnaires were adopted and validity and reliability were confirmed by Cronbach's alpha and composite reliability. Structural Equation modeling using the Measurement model and structural model was used for data analysis. Findings show that IGA interactivity has a significant positive direct and indirect impact on purchase intention via brand attitude, with stronger game product congruence adding to the impact. This paper integrates transportation theory into IGA literature to provide strategic insights for immersive, contextually relevant advertising.

| **KEYWORDS** | In-Game Advertising, Interactivity, Purchase Intention, Brand Attitude, Game-Product Congruence, Transportation Theory |

Introduction

As digital interactions suffuse today's market, digital platforms revolutionized advertising allowing brands to find new ways to interact with consumers (Pellegrino, 2024). Due to the growth of digital content consumption (Hussain et al., 2022), AdBlock technology (Shattuc, 2020), and consumer preference (Hussain et al., 2022), traditional advertising channels (i.e. television and print media) have become less effective. To respond to this, in-game advertising (IGA) has become an effective marketing strategy to integrate brand messages into digital gaming environments via a nondisruptive, engaging manner through the integration of interactive brand placements (Ghosh & Dwivedi, 2022; Engka, Tulung, & Arie, 2021). With the global revenue of the gaming industry expected to amount to $522 billion in 2025 (Statista, 2024), IGA is becoming an area important for brand investments to tap into its highly engaged audience (Hussain et al., 2022). Unlike conventional advertising, the IGA merges its ads in a more seamless, immersive way (Zagni & Pera, 2024), which is different from traditional ad fatigue and consumer avoidance (Pahari, Bandyopadhyay, & Manna, 2024). However, despite its growing prevalence, research questions the effectiveness of IGA in changing consumer attitudes and influencing purchase intention (Vashisht & Royne, 2019; Vashisht & Chauhan, 2017). Lastly, the psychological impact of interactivity in IGA on the players is underdeveloped as it impacts consumers' perceptions and behaviors (Hussain et al., 2022).

Interaction in IGA is the relationship entailed with the extent of advertiser/player interactivity within the video game (Vashisht & Chauhan, 2017). Literature has suggested that advertisements are more persuasive with an increased level of user involvement and emotional attachment (Liu & Shrum, 2002). Therefore, interactivity in the context of digital games promotes a sense of presence and transportation (being deeply immersed in

the game world), which increases receptivity (Green & Brock, 2000; Hilken et al., 2018). Drawing on transportation theory, we posit that consumers who are immersively engaged in the narrative experience will form a more positive attitude toward the embedded content (Van Laer et al, 2014), given that modern video games provide high levels of narrative complexity and user control.

Literature has suggested the effectiveness of IGA interactivity in engaging players, a critical gap remains in understanding the underlying psychological mechanism that connects interactivity to purchase intention. Prior studies suggest that an engaging and immersive game environment fosters favorable consumer-brand relationships (Vashisht, 2021; Vashisht, Mohan, & Chauhan, 2020). However, the attitude-behavior framework (Ajzen, 1991) proposes that attitude toward the advertised brand impacts purchase decisions (Hsiao, Lin, & Wu, 2022). Accordingly, Hsiao, Lin, & Wu (2022) found that players harboring a positive attitude towards the IGA brand will be more willing to have a positive attitude toward the IGA brand in-game advertising due to potential purchase intention. Therefore, the literature highlights the need for further investigation into how the IGA interactivity affects attitude formation toward advertised brands and then consumption behavior.

Additionally, the impact of IGA on user reactions is also understudied from the perspective of the game product congruence (GPC). The term GPC is game penguin candy (A.K.A. degree of alignment between the game's theme and the product being advertised) (Lee & Faber, 2007). Thus, high congruence improves the realism of brand placements, giving them a feel 'of an organic part of the gaming experience, rather than intrusive advertisement' (Vashisht, 2021). Therefore, congruent brand placements affect brand recall, consumer attitudes, and purchase intentions (Chaney et al., 2018; Martí-Parreño et al., 2017). However, incongruent placements contradict immersion, creating reactance and lessened ad effectiveness (Soebandhi & Adriansyah, 2017). Consequently, GPC should be considered a moderating variable between attitude toward brand of IGA and purchase intention, thereby allowing a more detailed understanding of the effectiveness of IGA. Therefore, this study aims to fill research gaps by developing a transportation theory framework to understand how interactivity in interactive gaming affects consumer attitudes towards IGA brands, how attitude mediates interactivity's effect on purchase intentions, and how game-product congruence moderates the relationship. This understanding will benefit academia and industry, helping advertisers improve interactive parts and brand placements.

Literature Review

IGA interactivity and Consumer purchase intention

Consumers are no longer the passive takers of ads; they want to embrace them. However, this resistance poses a threat to traditional advertising, forcing brands to find immersive digital experiences where consumers are engaging actively (Prakash, Bhardwaj, & Jindal, 2024). IGA stands out with its unique advantage of integrating branded content into interactive environments with deeper engagement (Yu, 2013). Therefore, the study of how IGA interactivity influences psychological and behavioral purchase intentions remains barely explored (Hussain et al., 2022).

Interactivity, a core feature of digital media, allows users to shape their experiences (Steuer, 1992), interact with branded elements, make in-game decisions, or socially engage with brand-sponsored activities (Martínez-Navarro et al., 2019). However, De Toni et al. (2022) and Jaafar, Lalp, & Naba (2012) suggested that purchase intention represents a consumer's planned buying decision that is influenced by cognitive and emotional reactions. Therefore, greater interactivity increases the likelihood of purchase, as interactivity appears to strengthen the consumer-brand connection (De Toni et al., 2022). Green & Brock's (2000) transportation theory suggests how immersion in a story

serves to diminish counter-arguing, thereby increasing persuasion. Interactivity increases this effect as it is traditionally used in television and print media (Escalas, 2004) as players get psychologically absorbed (de Regt, Plangger, & Barnes, 2021; Wang & Calder, 2009) as they shape their own narratives. Therefore, when the brands are naturally integrated into the gameplay, consumers gain natural interactions that make the presence, engagement, and brand connection more enjoyable (Vendemia, 2017) thereby resulting in positive emotions, increased brand attitudes, and purchase intentions (Vashisht et al., 2021).

Interactive ads evoke stronger emotional reactions (Hussain et al., 2022) such as joy and satisfaction (Vashisht & Chauhan, 2017) enhancing cognitive processing, emotional involvement, and brand recall (Bleier & Eisenbeiss, 2015) thereby enhancing active engagement (Martínez-Navarro et al., 2019) and strengthens brand associations, reinforcing the desire to purchase (Alsawaier, 2018). This is in accord with experiential marketing research (Schmitt, 1999) indicating that engaging with hands-on brand experiences leads to lasting impressions and purchase behavior. Thus, IGA interactivity not only enhances brand awareness and recall but also builds emotional and cognitive connections that begets higher purchase intentions. Based on these insights, the following hypothesis is proposed:

H1: IGA interactivity results in favorable purchase intentions.

Mediating Role of Attitude toward the IGA

Attitude toward the IGA brand reflects a player's evaluation of a brand within a game, shaped by cognitive, affective, and behavioral responses (Martí-Parreño et al., 2017). Ads traditionally go based on direct experience and product, and IGA interactivity leads to a more immersive brand experience creating recall, associations, and purchase intent (Hussain et al., 2022; Martínez-Navarro et al., 2019). Transportation is a key influencing mechanism on brand attitudes; a state of extreme narrative immersion in which players perceive the game world as real (Green & Brock, 2000). Therefore, interactive IGA improves this experience by integrating branded elements without distracting from the narrative (Zagni & Pera, 2024). Interactive ads have been shown to improve engagement, control, and ognitive involvement, leading to more positive brand evaluations (Martínez-Navarro et al., 2019; Malhotra, Mishra, & Saxena, 2021).

IGA interactivity is influenced by perceived intrusiveness, enjoyment, and narrative alignment. However, traditional IGAs often break gameplay, leading to negative brand perception (Hussain et al., 2022). Although interactive IGAs are well integrated, they increase immersion and brand perception (Verberckmoes et al., 2016). They enhance transportation when aligned with the game's storyline and mechanics and subsequently reinforce positive attitudes toward the game and brand (Martí-Parreño et al., 2017; Green et al., 2004). Therefore, IGA interactivity creates a better brand perception by integrating the brand deeply into the game world to provide higher engagement, purchase intention, and loyalty (Malhotra, Mishra, & Saxena, 2021; Zagni & Pera, 2024).

However, an IGA brand attitude is a key determinant of consumer behavior driving purchase intentions, brand engagement, and loyalty (Vanwesenbeeck, Walrave, & Ponnet, 2017) that encompasses cognitive (i.e. credibility, relevance), affective (i.e. emotional connection, affinity), and behavioral (i.e. purchase willingness, recommendations) components (Mishra & Malhotra, 2021; Lee & Faber, 2007). Therefore, a positive IGA attitude increases brand recognition, trust, and decision-making and influences consumer responses (Malhotra, Mishra, & Saxena, 2021). The Elaboration Likelihood Model (Petty & Cacioppo, 1986) suggests that players reach IGA through a central (deep thought about relevant ads), or peripheral (shallow thought about intrusive ads) route. However, well-integrated IGA leads to more positive brand attitudes and purchase intent via central route processing (Van Laer et al., 2014), while irrelevant ads lower engagement (Gledhill, 2019).

Studies have suggested that engaging and nonintrusive brand placements enhance brand recall (Dwivedi et al., 2021) thereby impacting consumer attitudes and trust and leading to greater purchase intent in both the game and in real life (Martínez-Navarro et al., 2019; Joassard & Capelli, 2024). According to Malhotra, Mishra, & Saxena, (2021), immersive IGA can create trust, and hence, more openness to in-game purchases and interactions with real-world brands. The Transportation Theory explains how deep narrative engagement increases receptiveness to embedded ads (Green & Brock, 2000). Players with high immersion show less skepticism and higher brand acceptance (Van Laer et al., 2014; Jain, 2024). The interactive nature of gaming accelerates this effect as players interact directly with branded tie-ins, creating stronger emotional connections and brand loyalty. Therefore, integrated IGA increases trust, familiarity, and propensity for purchase. The above discussion highlights that IGA interactivity and attitude toward the advertised brand are essential in shaping consumer purchase behavior. High interactivity enhances player engagement, fostering deep immersion and psychological involvement (Martínez-Navarro et al., 2019). This immersion strengthens emotional connections with both the game and the advertised brand (Jain, 2024). Interactive elements give players a sense of control and participation, increasing enjoyment, attachment, and receptiveness to brand messaging (Zagni & Pera, 2024). Attitude toward the IGA brand determines its effectiveness. Players with favorable brand perceptions engage more with ads and are likelier to consider purchases (Tabaeeian et al., 2024). The quality and depth of interactivity influence attitudinal responses, strengthening brand associations and purchase intentions (Nguyen et al., 2024; Lian et al., 2024). Conversely, intrusive interactivity leads to negative brand perceptions, reducing ad effectiveness.

Transportation Theory supports this mediation effect, as IGA interactivity enhances involvement, drawing players into the game's narrative and deepening emotional engagement (Green & Brock, 2000). Immersed players exhibit stronger brand recall and purchase likelihood (Vashisht & Chauhan, 2017). Psychological absorption makes in-game ads feel more natural, increasing brand message effectiveness (Hilken et al., 2018). Thus, IGA interactivity influences purchase intention through brand attitude. Positive interactivity fosters brand engagement and enhances consumer responsiveness, reinforcing brand attitude as a key mediator between IGA interactivity and purchase behavior. Thus, the following hypotheses are proposed:

H3: Attitude toward the IGA brand positively influences consumer purchase intention.

H2: IGA interactivity positively influences players' attitudes toward the IGA brand.

H4: Attitude toward the IGA brand mediates the relationship between IGA interactivity and consumer purchase intention.

Moderating Role of Game Product Congruence

GPC shapes consumer responses to IGA by ensuring seamless integration between the brand and the gaming environment (Lee & Faber, 2007). GPC refers to the alignment between the game's theme and the advertised product, where high congruence enhances immersion and ad effectiveness (Balasubramanian, Karrh, & Patwardhan, 2006; Russell, 1998). The brand makes sense within the setting, the narrative, and the mechanics of the game when it fosters stronger engagement, builds up positive brand attitudes, and raises purchase intent (Vashisht, Mohan, & Chauhan, 2020). On the other hand, low congruence hinders immersion, generates cognitive dissonance, and decreases ad effectiveness (Martínez-Navarro et al., 2019).

According to Transportation Theory, with high GPC, the cognitive disruptions are minimized and the emotional connections to the brand are reinforced (Van Laer et al., 2014; Green & Brock, 2000). In line with the above, studies indicate that congruent ads

lead to greater acceptance (Martí-Parreño et al., 2017), higher brand realism (Ramram, Harte, & Fleury, 2018), and higher purchase likelihood (Green, 2021). Additionally, interactive IGA, when combined with high GPC, strengthens brand attitudes and makes advertising more persuasive and less intrusive (Vashisht, 2021). However, two key factors influence IGA success such as plot connection and prominence (Gupta & Lord, 1998; Balasubramanian, Karrh, & Patwardhan, 2006). A well-integrated ad such as a luxury car in a racing game enhances brand authenticity and purchase intent (Chaney et al., 2018). Conversely, incongruent ads, like a soft drink in a medieval fantasy game, disrupt immersion and reduce brand appeal (Soebandhi & Adriansyah, 2017).

Therefore, attitude toward the IGA brand is a key driver of purchase intention, GPC moderates this relationship. High GPC strengthens brand familiarity and positive brand responses (Vashisht, 2021), while its direct impact on purchase remains underexplored. Hussain et al. (2022) extend Transportation Theory, showing that immersive gaming experiences only drive purchase intent when ads align with the game's mechanics and narrative. When congruence is high, stronger brand attitudes translate into higher purchase intent, but when ads are incongruent, they disrupt engagement and weaken brand influence (Martínez-Navarro et al., 2019). Thus, based on these insights, the following hypothesis is proposed:

H5: Game-product congruence moderates the relationship between attitude toward the game brand and consumer purchase intention, such that higher congruence strengthens this relationship.
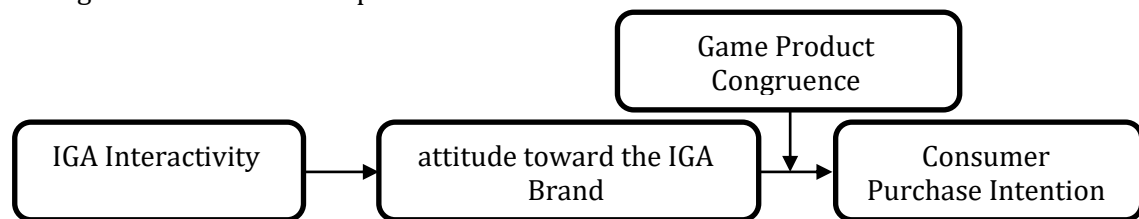

Figure: 1 Conceptual Framework

Material and Methods

This study employs an explanatory quantitative research design to examine the IGA interactivity on purchase intention, with brand attitude as a mediator and GPC as a moderator. A cross-sectional survey method was adopted to collect data from Pakistani PUBG Mobile players exposed to McLaren's in-game advertisement. Structural Equation Modeling (SEM) was utilized to analyze the relationships among the study variables. However, the target population comprised Pakistani PUBG Mobile players who had encountered McLaren's IGA within the game. Given the rapid expansion of the Pakistani gaming industry and the growing adoption of in-game brand promotions (i.e. ranks 11th globally in eSports earnings with 20% growth annually and 25 million daily active users; Hussain et al., 2022; PUBG Mobile Statistics, 2025), this population was deemed suitable for analyzing consumer responses to interactive digital advertising.bUsing the item-to-response ratio (20:1), a sample size of 360 respondents was determined. After data cleaning, 353 valid responses were retained, achieving a 97.05% response rate. Participants were recruited through online gaming communities and social media platforms, ensuring that only individuals with prior exposure to McLaren's IGA were included. The demographic analysis showed that most respondents were male (N = 277, 78.5%), aged below 25 years (N = 234, 66.3%), with 1–2 years of PUBG Mobile experience (N = 125, 35.4%).

Table 1
Participant Profile

Demographics		N	%
Gender	Male	277.0	78.5
	Female	76.0	21.5

Age	< 25 years	234.0	66.3
	26-35 years	87.0	24.6
	36-45 years	31.0	8.8
	> 45 years	1.0	0.3
Game Experience	<1 years	47	13.3
	1-2 years	125	35.4
	3-4 years	105	29.7
	5-6 years	55	15.6
	More than 7 years	21	5.9

Measures

The study used a self-administered questionnaire and validated scales, evaluating respondents using a five-point Likert scale, with face validity ensured by three professionals following Bolarinwa (2015). Therefore, the study adopted a three-item scale from Goh and Ping (2014), which showed a reliability value of 0.90. A sample item included, "My experience with the information about the McLaren vehicle in the PUBG was interactive." To assess attitudes toward IGA, the study used a five-item scale from Spears and Singh (2005), which demonstrated a reliability of 0.85. A sample item was, "My attitude toward the McLaren vehicle is Favorable." Furthermore, GPC was measured using a four-item scale from Lee and Faber (2007), with a reliability of 0.87. On a five-point Likert scale, respondents compared the congruence of PUBG and McLaren electric vehicles. "Sample item: 'The McLaren vehicle expresses itself to an environment the game occupies (i.e. PUBG)." However, Souiden et al., (2011) six-item scale was used to measure consumer purchase intention and was validated with reliability of 0.95 in the Pakistani context by Hussain et al., (2022). Results indicated a high scale reliability (α = 0.92). The sample item was "I am impressed by the McLaren vehicle." Moreover, the research also incorporated control variables of gender and age and Game Experience to address possible distinctions in gaming motivation and experience (Vashisht, 2021). A pilot study was conducted with 30 participants to ensure the clarity, reliability, and validity of the survey instrument. Minor modifications were made based on respondent feedback to enhance comprehensibility. However, a multi-stage analytical process started with preliminary analysis and then continued with confirmatory factor analysis (CFA), descriptive analysis, and hypothesis testing. The analysis utilized IBM SPSS along with AMOS which employed maximum likelihood estimation (MLE) for evaluating complex interrelationships and model fit indices (Islam et al., 2024). The analysis examined all data for SEM compliance through tests investigating both missing values and outliers alongside normality distribution and multicollinearity. CFA confirmed construct reliability and validity through two steps which demonstrated that the measurement model had both convergent and discriminant validity. Descriptive analysis generated standard deviation statistics as well as mean values and correlation data for variable measurement relationships. Bootstrapping with 5,000 resamples and 95% CI served to obtain reliable standard errors for hypothesis tests. The study followed a rigorous statistical framework that both ensures validity and improves our comprehension of game promotion strategies in developing markets.

Results and Discussion

Preliminary Analysis

The preliminary analysis dealt with checking for missing values, outliers, normality, multicollinearity, and CMV so that data would be of high quality and fit for statistical analysis further. Data was collected through a Google form with mandatory responses, resulting in no missing values in the dataset. Using the Mahalanobis distance test to identify outliers, seven extreme cases were removed to improve the model accuracy. Assumptions of normality were verified through skewness and kurtosis values and histograms to make sure the distributions of variables were suitable for further analysis. Harman's single factor test was performed to assess CMV and no single factor

accounted for more than 50 (49.5) % of the variance, which is less than 50 %, thus CMV was not significant (i.e. a concern in this study). Therefore, these steps were taken to ensure that the dataset would satisfy those assumptions necessary for robust hypothesis testing and SEM.

Confirmatory Factor Analysis

CFA was conducted using AMOS with MLE to assess construct validity, following recommendations by Hair et al. (2010) and Byrne (2010). Factor loadings exceeded 0.50, confirming strong item representation. The study used CR values higher than 0.70 to confirm internal consistency and AVE values exceeding 0.50 to establish convergent validity. The discriminant validity check verified that the square roots of AVE values exceeded all correlations between constructs (Fornell & Larcker, 1981). Model fit indices confirmed a well-fitting model, with χ^2/df = 2.418, TLI = 0.96, GFI = 0.91, CFI = 0.97, and RMSEA = 0.06, all within recommended thresholds (Hu & Bentler, 1999). However, these results validate the measurement model's reliability and structure, thereby adequate for the hypothesis testing.

Table 2
Confirmatory factor analysis

Variables	FL	α	CR	AVE	MSV
IGA1	0.87	0.87	0.877	0.705	0.103
IGA2	0.83				
IGA3	0.81				
AT_IGA1	0.77	0.94	0.943	0.77	0.469
AT_IGA2	0.89				
AT_IGA3	0.87				
AT_IGA4	0.92				
AT_IGA5	0.9				
GPC1	0.89	0.91	0.914	0.727	0.469
GPC2	0.86				
GPC3	0.9				
GPC4	0.73				
CPI1	0.78	0.93	0.935	0.707	0.458
CPI2	0.81				
CPI3	0.82				
CPI4	0.87				
CPI5	0.9				
CPI6	0.84				

Notes: IGA= IGA Interactivity; AT_IGA= Attitude toward the IGA Brand; GPC = Game Product Congruence; CPI = Consumer Purchase Intention.

Descriptive and Correlation Analysis

Descriptive statistics summarize the central tendency and variability of key constructs (Hair et al., 2019). The descriptive analysis indicates that IGA Interactivity (M = 3.69), Attitude toward the IGA Brand (M = 3.75), GPC (M = 3.42), and Consumer Purchase Intention (M = 3.88) received generally positive ratings, with moderate variability. This correlational analysis indicates a significant positive association among variables. Attitude toward IGA Brand IGA Interactivity correlated with r = 0.22 (p < 0.01), r = 0.18 (p < 0.01), r = 0.29 (p < 0.01, respectively). Attitude toward the IGA Brand shows strong correlations with GPC (r = 0.64, p < 0.01) and Consumer Purchase Intention (r = 0.65, p < 0.01), while GPC correlates with Consumer Purchase Intention (r = 0.66, p < 0.01). These results highlight the role of IGA interactivity in shaping brand attitude, congruence, and purchase intention.

Table 3
Descriptive and correlational analysis

Variables	IGA	AT_IGA	GPC	CPI	Mean	SD
IGA	1				3.69	0.93

AT_IGA	0.22**	1			3.75	0.78
GPC	0.18**	0.64**	1		3.42	0.76
CPI	0.29**	0.65**	0.66**	1	3.88	0.77

Notes: IGA= IGA Interactivity; AT_IGA= Attitude toward the IGA Brand; GPC = Game Product Congruence; CPI = Consumer Purchase Intention.

Hypotheses Testing

The study examined a structural model with 5,000 bootstraps at a 95% confidence level using AMOS. The results confirm that IGA interactivity positively influences consumer purchase intention ($\beta = 0.15$, SE = 0.03, CR = 3.5, $p < 0.01$), supporting H1. To assess mediation, the direct path between IGA interactivity and consumer purchase intention remained significant ($\beta = 0.15$, SE = 0.03, $p < 0.01$). The indirect path was analyzed by multiplying the β coefficient of IGA interactivity on attitude toward the IGA brand ($\beta = 0.22$, SE = 0.04, CR = 4.28, $p < 0.01$) with the β coefficient of attitude toward the IGA brand on consumer purchase intention ($\beta = 0.25$, SE = 0.04, CR = 6.1, $p < 0.01$). The indirect effect was significant ($\beta = 0.05$), with a total effect of $\beta = 0.20$, confirming partial mediation and supporting H4.

Table 4
Mediation evaluation

| Hypotheses	B	SE	P	CR	Mediation Effect		
					Direct Effect	In-direct Effect	Total Effect
IGA→CPI	0.15	0.03	0.00	3.5	0.15	0.05	0.20
IGA→AT_IGA	0.22	0.04	0.00	4.28			
AT_IGA→CPI	0.25	0.04	0.00	6.1			

Notes: IGA= IGA Interactivity; AT_IGA= Attitude toward the IGA Brand; GPC = Game Product Congruence; CPI = Consumer Purchase Intention, ** $p < 0.01$.

For moderation analysis, an interaction term was computed between attitude toward the IGA brand and GPC. The results show that both GPC ($\beta = 0.29$, SE = 0.09, CR = 3.08, $p < 0.01$) and attitude toward the IGA brand ($\beta = 0.25$, SE = 0.04, CR = 6.10, $p < 0.01$) significantly influence consumer purchase intention. The interaction effect ($\beta = 0.27$, SE = 0.01, CR = 2.79, $p < 0.01$) confirms that GPC strengthens the impact of attitude toward the IGA brand on consumer purchase intention, supporting H5. These findings highlight the mediating role of attitude toward the IGA brand and the moderating influence of game product congruence in shaping consumer purchase behavior in in-game advertising.

Table 5
Moderation Analysis

Hypotheses	B	SE	P	CR
Moderating role of Game Product Congruence				
AT_IGA →CPI	0.25	0.04	0.00	6.10
GPC→CPI	0.29	0.09	0.00	3.08
AT_IGA× GPC→CPI	0.27	0.01	0.00	2.79

Notes: IGA= IGA Interactivity; AT_IGA= Attitude toward the IGA Brand; GPC = Game Product Congruence; CPI = Consumer Purchase Intention, ** $p < 0.01$.
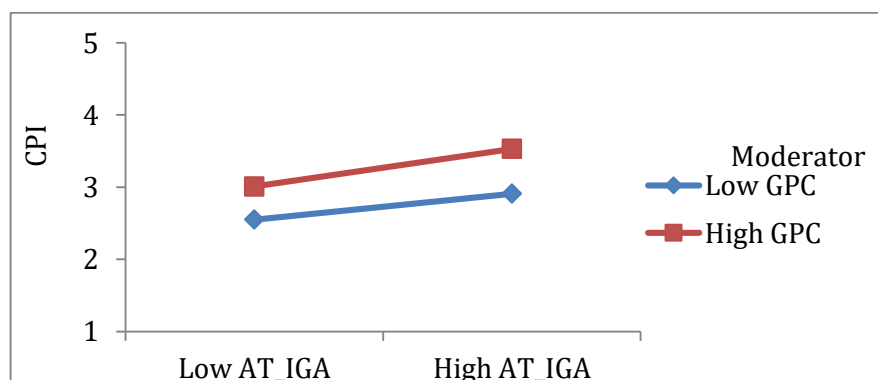
Conclusion

The study validates the significant role of IGA interactivity in shaping consumer purchase intention ($\beta = 0.15$, $p < 0.01$), reinforcing the Transportation Theory's premise that immersive experiences heighten engagement and reduce resistance to advertising (Green & Brock, 2000). Interactive ad formats enhance consumer involvement, making brand messages more persuasive and memorable (Jain, 2024; Martínez-Navarro et al., 2019). Engaging with in-game branded elements fosters deeper cognitive and emotional connections, increasing the likelihood of purchase.

IGA interactivity also exerts a substantial influence on attitude toward the IGA brand ($\beta = 0.22$, $p < 0.01$), as interactivity strengthens engagement and perceived control, leading to more favorable brand evaluations (Malhotra, Mishra, & Saxena, 2021; Vashisht & Chauhan, 2017). When players become deeply engrossed in the game, resistance to brand messaging diminishes, supporting the idea that interactivity enhances brand affinity and long-term recall (Van Laer et al., 2014).

Attitude toward the IGA brand, in turn, significantly influences purchase intention ($\beta = 0.25$, $p < 0.01$), indicating that while interactivity captures consumer attention, positive brand perceptions ultimately drive purchasing decisions (Hsiao, Lin, & Wu, 2022). A strong brand attitude fosters trust and familiarity, reinforcing consumer commitment. The mediation analysis confirms that attitude toward the IGA brand partially mediates the relationship between IGA interactivity and purchase intention (direct effect: $\beta = 0.15$, $p < 0.01$; indirect effect: $\beta = 0.05$, $p < 0.01$). This indicates that interactivity boosts the level of engagement but its impact on purchase decisions is contingent on how much consumers perceive the brand as positive.

The relationship between attitude and purchase intention is moderated by game-product congruence ($\beta = 0.29$, $p < 0.01$, interaction effect: $\beta = 0.27$, $p < 0.01$) via strengthening attitude purchase intention link when brand messaging matches with game narratives (Chaney et al., 2018; Vashisht, 2021). Immersion is heightened when congruence is high, increasing brand credibility and purchase likelihood, whereas when congruence is low, immersion is disrupted and ad effectiveness is weakened (Martínez-Navarro et al., 2019). These findings highlight the value of wholly integrated brand strategies within interactive advertising to maximize engagement, brand perception, and consumer action.

Implication

This study advances the application of Transportation Theory in IGA by demonstrating that interactivity enhances engagement, brand attitudes, and purchase intention (Green & Brock, 2000). Interactive advertisements create immersive experiences that heighten cognitive and emotional involvement, making brand messages more persuasive (Van Noort, Voorveld, & Van Reijmersdal, 2012). By confirming the mediating role of attitude toward the IGA brand, this research extends prior findings on brand attitude as a determinant of consumer behavior (Jain, 2024; MacKenzie et al., 1986). It establishes that interactivity alone is insufficient for driving purchase intention; rather, consumer attitudes toward the brand significantly shape decision-making.

Moreover, the study identifies GPC as a key moderator, reinforcing that congruent advertisements enhance immersion and brand credibility, thereby increasing purchase intention (Lupinek et al., 2021). This supports the notion that advertising effectiveness depends on seamless brand integration within the game environment, as high congruence strengthens consumer engagement, contrary disrupts immersion, and reduces persuasion. The study validates the relationship between ad content and digital context, underscoring the significance of alignment for maximizing consumer impact in interactive advertising.

From a managerial standpoint, the findings emphasize the necessity of interactive and contextually relevant in-game advertising to enhance brand engagement and purchase intention. It suggests replacing static ads with immersive formats like branded items, challenges, and product trials. Ads should align with the game's theme to maintain authenticity and avoid negative consumer perceptions. For game developers and publishers, strategic ad integration can drive monetization while preserving user experience. Highly interactive ads improve brand effectiveness and sustain player immersion, fostering a symbiotic relationship between advertisers and gaming platforms.

Recommendations

This study has several limitations. Being a cross-sectional design, one cannot make causal inferences between IGA interactivity, brand attitude, and purchase intention; therefore, longitudinal or experiment research is required. Although Harmon's test showed no CMV concerns, self-reported data may introduce bias, therefore future studies should use multi-source data (Podsakoff et al., 2003). GPC moderates the effectiveness of IGA, although other factors such as player involvement and familiarity with the brand could also be involved. The study emphasizes cognitive and attitudinal elements, overlooking enjoyment and nostalgia as emotional responses. However, generalizability may be hindered by cultural and sample limitations, which merit cross-cultural research (Hussain et al., 2022). Refining the framework and improving IGA strategies will require addressing these gaps.

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