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Brands in a game or a game for brands? Comparing the persuasive effectiveness of in-game advertising and advergames

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Abstract

Although a rich body of knowledge exists in the domain of gamification of advertising, no research emphasis has been given to compare the persuasive effects of two well-known gamification formats—in-game advertising and advergame. Also, we do not know much about their comparative effects on child and adult gamers. The present research fills these gaps by conducting three experiments in which we examine the effects of gamification format (advergame vs. in-game advertising) and age of consumers (children vs. adults) on attitude toward fictitious and real brands (Studies 1 and 2) and purchase intention of fictitious brands (Study 3). The findings reveal that children have more favorable attitude and purchase intention when the brand is advertised in an advergame than in an in-game advertising format, while adults demonstrate higher brand attitude and purchase intention in the latter as compared to the former gamification format. Also, brand familiarity differentially moderates the relationship between gamification format, age, and brand attitude (Study 2). Finally, consumers' engagement in the game positively mediates the relationship between the independent variables and purchase intention (Study 3). Our research contributes to academia by advancing the literature on gamification of advertising through a granular evaluation of persuasive efficacy of IGA and advergame played by adults and children. It also informs managers to effectively persuade consumers of different age groups by the usage of the right gamification format.

KEYWORDS

advergames, computer games, digital games, gamification, IGA, in-game advertising

1 | INTRODUCTION

Competition and advertising clutter make it extremely difficult for marketers to attract consumers toward brand messages and engage them for longer durations. Specifically, when advertised through traditional communication channels such as TV, print, and radio, consumers often demonstrate various advertisement avoidance behaviors such as switching TV channels during commercial breaks (Dix & Phau, 2017), turning the newspaper and magazine pages that contain advertisements (Prendergast et al., 2010), and removing cognitive attention from radio advertisements (Speck & Elliott, 1997). These behaviors have compelled marketers to explore various ingenious ways to persuade consumers. One such method is the gamification of advertising that allows marketers to use

entertainment media such as digital games to promote brands (Peters & Leshner, 2013).

Marketers advertise through digital games in two main ways—advergames and in-game advertising (IGA). Advergames are video games "specifically created to function as advertisements to promote brands, where the entertainment content mimics traditional game forms" (Kretchmer, 2005, p. 7). They are built around the core positioning of brands and have a clear rhetoric which ensures the transfer of specific brand-related information to the consumers (Peters & Leshner, 2013). In other words marketers design an advergame in such a way that the game itself represents the brand message (Nelson & Waiguny, 2012). For example, in an attempt to showcase the superiority of one of its cereal brands (*Fruit Loops*) over fresh fruits, Kellogg's developed an advergame that allowed game players to earn more points by throwing the branded cereal instead of fruits in the mouth of a monster (Mallinckrodt & Mizerski, 2007). The monster also felt more satisfied and made a loud pleasing sound ("Mmmmm") when it ate the cereal in comparison to a moderate sound ("mmm") in the case of fruit. This form of gamification can be distinguished from IGA that closely resembles traditional product placement (see Babin et al., 2021 for a meta-analytic investigation on how product placement works) and embeds brand elements such as brand names and logos in the form of billboards, posters, and banners in existing digital games (Terlutter & Capella, 2013). The predominant purpose of these games is to entertain players and not promote any singular brand (Nelson & Waiguny, 2012; Wang & Chou, 2019; Whittaker et al., 2021). To cite an example, the movie *Ironman* was advertised in a game called *Sims 3* by including dynamic advertising posters of the film in the gaming environment. The earliest form of inclusion of brands in digital games was to augment game realism which gradually converted into paid placements as time progressed (Nelson & Waiguny, 2012). Another significant difference between advergame and IGA is that the former gamification format is easier to learn and less complicated to play than the latter (Nelson & Waiguny, 2012). They are also often targeted to stimulate casual game-playing situations and offer quick rewards as compared to real games in which brand elements could be embedded (Cauberghe & De Pelsmacker, 2010).

Despite these explicit structural differences between IGA and advergame, no research has been conducted to date which compares the outcomes of using these gamification formats on individuals, specifically, children and adults. Therefore, the present research objective is to empirically conduct such a comparison and examine how the brand attitude and purchase intention of consumers of different ages are distinctively affected by these gamification formats. Addressing this gap is important for several reasons. First, IGAs and advergames substantially vary in the degree of subtlety or integration of brand messages into the game mechanics (Kuo & Rice, 2015; Nelson & Waiguny, 2012). Therefore, consumers' persuasion knowledge, that is, their perception of the persuasive motive of advertisements (Friestad & Wright, 1994) might differ across the gamification formats which may eventually affect their brand attitude. Also, since persuasion knowledge strengthens with age (Wright et al., 2005), it becomes critical to examine how children, as compared to adults, react to the persuasive attempts through these games and form varying levels of brand attitude and purchase intention. Second, since these gamification formats also vary in playability and level of challenge posed to the players with advergames being less complex, shorter in duration, and easier to play than IGAs (Cauberghe & De Pelsmacker, 2010; Nelson & Waiguny, 2012), children and adults—who possess dissimilar levels of cognitive abilities and playing skills (Bayliss et al., 2003; Nelson & Waiguny, 2012; Plebanek & Sloutsky, 2017; Sparks & Chung, 2016) may perceive these challenges across the gamification formats differently. Therefore, depending upon whether they are under- or over-challenged (Waiguny et al., 2014), their emotions toward these games as well as level of engagement within the gaming environment might also vary. To explain this differential effect of gamification format we use the affect transfer theory (Fiske, 1982; Fiske & Pavelchak, 1982) that suggests these variations in emotions would transfer from one attitudinal object (i.e., game) to another object (i.e., advertised brand) and generate dissimilarities in brand attitude and purchase intention. We test these predictions in the present research.

Our research makes significant contributions to theory and practice. First, we advance extant literature on gamification of advertising by segregating and empirically comparing the effects of IGA and advergame on brand attitude and purchase intention, a topic that remained completely unexplored despite the prominent presence of both these gamification formats for long. Second, we also add to the gamification literature by comparing for the first time how adults versus children perceive the difficulty level of these formats which affect their perception formation and purchase intention of the advertised brands. To the best of our knowledge such an exploration has never been done in the past. Although a study conducted by Waiguny et al. (2012) made an attempt to examine the varying effects of game-induced challenge on brand attitude, the researchers did not look at different types of gamification formats. Rather, it was measured by the researchers through observing the emotions and behaviors of the players while playing the game. Moreover, they considered only children gamers and did not investigate adults as well as the pragmatic aspect of challenge-skill fit among players of different age groups. Third, we enrich the literature on persuasion knowledge model (PKM) (Friestad & Wright, 1994) by extending the formation of persuasion knowledge and its subsequent influence on brand attitude in a casual and reward-driven scenario such as playing computer games. In the past researchers adopted the aforementioned model to explain consumer scepticism toward brands in more *formal* setups such as watching a TV ad, reading a print ad from a magazine or listening to a radio ad. The use of computer games helps us examine the robustness of the PKM when information processing switch from a formal context to a more casual one. Last, our research also investigates and increases the applicability of the affect transfer theory (Fiske, 1982; Fiske & Pavelchak, 1986) by departing from traditional media vehicles and bringing into focus a new media vehicle such as computer game. Such an investigation is necessary

because computer games are generally not meant to promote brands when compared with TV, print, radio, or social media. But when they do so, it is necessary to understand how positive or negative feelings arising from playing these games transfer to another attitudinal object such as the brands embedded within them. This is exactly what our present research investigates.

From the practitioners' perspective our research also adds significant value. Marketers have been spending prolifically on these gamification formats to get through their potential customers of different ages. An investigation of this kind would help them make an informed decision and map the gamification formats accurately with their target segments. Also, consumers across the globe have drastically increased their consumption of the Internet after the Covid-19 pandemic and lockdown. A recent survey conducted by Beech (2020) revealed that Internet usage has increased by 70% approximately after the pandemic. Also, user engagement in online mobile gaming has increased by three times with 30% more traffic (Amin et al., 2020). This provides marketers' a better opportunity to reach consumers through Internet-based persuasive tools such as IGAs and advergames. However, at present, there is a lack of systematic knowledge and marketers are still experimenting with these formats based upon their advertising budget. Our research would enable them to customize their efforts related to developing branded entertainment and facilitate more productive returns in the future. Finally, we provide marketers the wisdom to appreciate the psychological effects of the level of challenge in these games on consumers. They get salient instrumental cues about how to enhance brand attitude of consumers of different ages by manipulating the difficulty of these gamification formats.

2 | LITERATURE REVIEW AND HYPOTHESES

2.1 | Gamification of advertising

Play has continually captivated and charmed the mankind. As the Internet continues to grow and proliferate geographically to a large number of individuals across the globe, it is common sense that digital games would also keep on diffusing at a high pace. A recent survey suggests that the total gaming audience across the world was 1.82 billion in 2014 which is expected to reach 3.22 billion by 2023 (Statista, 2022). Although digital games are explicitly targeted toward young players, many individuals of all ages are involved in gaming (Vashisht et al., 2019). As the consumption of digital games increased marketers followed their target audience and started exploiting this medium in creative ways to advertise about their products and services (Eisingerich et al., 2019). Arguably the first instance of an in-game advertisement was reported in 1978 when a computer game called *Pirate Adventure* was advertised within another game called *Adventureland*. From that time onward marketers have been indigenously using computer games to reach out to consumers of all ages with persuasive messages.

A large number of researchers started examining the persuasive effectiveness of gamification of advertising as its usage among the marketers gained significant momentum. A literature synthesis was done by Terlutter and Capella (2013) the outcome of which is a holistic framework that suggests how IGAs and advergames affect the consumers. We understand from their framework that a host of game- and brand-related characteristics (e.g., game genre, level of game novelty, technical platforms, game-brand fit, nature of brand placement, etc.) directly influence consumers' psychological reactions to the games and the brands embedded within them. These cognitive, affective, and conative reactions further determine consumer behaviour such as purchase and pestering for the brand, brand and game recommendations, and game replay (Terlutter & Capella, 2013). It is also suggested that a host of individual and social factors (e.g., level of players' maturity, persuasion knowledge, brand familiarity, gaming experience, entertainment and immersiveness of the game, etc.) moderate the afore-mentioned relationships (Terlutter & Capella, 2013). Due to the enormity of research articles in the domain of gamification of advertising, another recent review of empirical studies was done by Vashisht et al. (2019). In this study the authors built on the framework provided by Terlutter and Capella (2013) by suggesting a couple of units of analysis related to the efficacy of gamification research such as antecedents and consequences of (a) game-related factors and (b) individual and social factors. This article also add value by posing a series of critical research questions that need to be answered by academics in the days to come.

Despite significant advancement in research in this domain two major dilemmas remain and await empirical investigation. The first one is the absence of a consensus among researchers on the meaning of the term advergame and its fundamental differences as compared to IGA (Svahn, 2005). Although few researchers have taken a genuine attempt to articulate the dissimilarities between them explicitly (e.g., Cauberghe & De Pelsmacker, 2010; Nelson & Waiguny, 2012; Terlutter & Capella, 2013), many others continue to ambiguously and interchangeably use these gamification formats in their research (e.g., Sreejesh et al., 2018; Sreejesh, Ghosh, et al., 2021; Vanwesenbeeck et al., 2017; Vashisht & Royne, 2016). The second dilemma which bothers the advertisers and game developers more than the scholars is regarding the suitability of each of the two gamification formats as a promotional tool for children and adult gamers. While a lot of studies depict the effects of gamification on consumer behavior for all four possible game–gamer combinations, that is, IGA and children (Hang & Auty, 2011), IGA and adults (Chaney et al., 2018), advergame and children (Mallinckrodt & Mizerski, 2007; Waiguny & Terlutter, 2011), and advergame and adults (Sreejesh, Dwivedi, et al., 2021), surprisingly there is a lack of research that precisely compares the psychological processes and their effects on the behavior of children (Tarabashkina et al., 2018) and adult gamers playing each of these two gamification formats. The present research seeks to fill this study void by empirically examining suitable research hypotheses built on the theories such as the PKM and the affect transfer hypotheses discussed next.

2.2 | PKM

Many researchers who deal with advertising effects have investigated how individuals develop an understanding of advertisements and marketplace persuasion. The most widely known theoretical framework used for this purpose is the PKM (Friestad & Wright, 1994). It refers to consumers' beliefs about the motives, tactics, and strategies adopted by marketers to persuade them; the appropriateness and effectiveness of various persuasion tactics; the psychological activities that mediate tactic effectiveness; and the processes adopted by consumers to cope up with persuasion attempts (Ham & Nelson, 2019). This model highlights the importance of three knowledge structures within individuals: (1) topic knowledge (beliefs of individuals about the message topic such as product, service, candidate, or social cause), (2) persuasion knowledge, and (3) agent knowledge (individuals' beliefs about the attributes, capabilities, and objectives of the persuasion agent such as a sales executive or advertiser) (Friestad & Wright, 1994; Ham et al., 2015). The interaction between these knowledge structures helps individuals "identify how, when, and why marketers try to influence them" (Friestad & Wright, 1994, p. 1) eventually determining the effectiveness of persuasion attempts.

Consumers with high persuasion knowledge can cope with different types of persuasion attempts by selecting appropriate response tactics. Typically, these response tactics comprise of a set of cognitive, affective, and physical actions toward different types of persuasive appeals. Some of these actions include developing negative brand attitude in television advertisements (Boerman et al., 2012), showing low credibility and high skepticism toward ads on the Internet (Boerman et al., 2018), reducing purchase intention after being exposed to corporate social responsibility campaigns (Ham & Kim, 2019), reducing the level of perceived diagnosticity and brand trust in social media channels (Z. F. Chen & Cheng, 2019), and lowering brand beliefs, brand preference, and pestering intention in advergames (Waiguny et al., 2014). In general, consumers use their coping knowledge across a multitude of persuasion situations to gain control over the outcome of specific episodes of persuasion (Friestad & Wright, 1994).

The persuasion knowledge within every individual is developmentally contingent, that is, it continues to develop throughout his or her life span (Friestad & Wright, 1994). As individuals' essential cognitive skills mature with age, their information-processing capabilities and the accumulated experience of social encounters with persuasion agents also develop leading to the incremental development of persuasion knowledge (Friestad & Wright, 1994; Wright et al., 2005). Therefore, an adultlike understanding of the domain of marketplace persuasion becomes a benchmark for children (Wright et al., 2005). Their beliefs about advertising remain immature and they cannot handle marketplace persuasion as effectively and efficiently as adults (Friestad & Wright, 1999; Wright et al., 2005). Over time, the content and structure of children's advertising knowledge become more robust along with the overall development of their cognitive capabilities that make them capable of dealing with various types of persuasion attempts resourcefully. For the present research, these distinctions become extremely important as we hypothesize the effects of IGA and advergame on children and adults. However, before we do so, one more crucial theoretical framework is discussed in the next section that also aids in the development of the research hypotheses.

2.3 | Affect transfer theory

Deeply rooted in psychology, this theory is best described by the process of schema-triggered affect transfer which suggests that emotional feelings are transferred from one attitudinal object to another when an existing schema matches a new item (Fiske, 1982; Fiske & Pavelchak, 1986). A schema is defined as a "cognitive structure that represents knowledge about a concept or type of stimulus, including its attributes and the relations among those attributes" (Fiske & Taylor, 1991, p. 93). According to these authors, the schema also carries an affective tag that is transferred to an incoming stimulus if congruent with the existing schema. This theory was introduced by Fiske (1982) in the social science domain which was later adopted by marketing scholars to explain various persuasion-related activities in the domain of advertising. Some of these activities include ad evaluations (MacKenzie et al., 1986), consumers' judgment about brand extensions and sub-brands (He et al., 2016), celebrity endorsements (Wong et al., 2020), brand placement in TV programs (D'Hooge et al., 2017), response to advergames (Waiguny et al., 2013), social shopping (Jin et al., 2022), and digital advertising (Steward et al., 2018) to name a few.

For the present research, we focus our discussion on the usage of this theory in the domain of advertising. In the advertising context, marketers often combine an unconditioned stimulus such as a TV advertisement with a conditioned stimulus such as the advertised brand. Due to this schema-congruent paring, consumers' disliking or liking of the unconditioned stimulus often gets partly or wholly transferred to the conditioned stimulus (Allen & Janiszewski, 1989; Tom, 1995). In other words, the affect transfer mechanism reflects the arousal and transmission of emotions from one attitudinal object (e.g., advertisement) to the other (e.g., brand) (Gardner, 1985; MacKenzie et al., 1986; Shimp, 1981). This classic "$Attitude_{Ad} \rightarrow Attitude_{Brand}$" effect has also been captured and explored in the context of gamification of advertising. For example, it has been found in extant studies that children's favorable attitude toward an advergame is transferred to the advertised brand thereby increasing their brand purchase request (Neyens et al., 2017; Panic et al., 2013). In the present research, we advance these prior understandings on the usage of affect transfer theory in gamification literature in a novel way. Here, we first segregate the effects based on their degree of positivity developed while playing IGA and advergames by adults and children, following which we explain the classic affect transfer mechanism. This way, we show that the transfer process is essential, but researchers and marketers should also pay attention to the fact that the degree of positive or negative emotions might differ based

on the match between the gamification formats and age of the consumers who play them. Next, we precisely explain these effects which are based on the interplay of the two theories just discussed.

2.4 | Effects of gamification format and age of consumers on brand attitude

It is evident from the discussion so far that IGAs and advergames significantly vary in terms of their overall structure, level of brand-game integration, and the intensity of challenges and difficulties faced by consumers during the gameplay. Coupled with these differences, the disparity in cognitive development and the knowledge of marketplace persuasion among adults and children motivate us to predict that gamification format would interact with consumers' age that would lead to differential effects on brand attitude. We first hypothesize these effects in the case of adult gamers.

Researchers argue that a digital game is considered worthy by the users if it offers "playability" expressed in the form of immersiveness, flow, and optimal experience (Fabricatore et al., 2002). This experience is derived by maintaining a delicate balance between an individual's skills and the challenges posed by the game he or she plays (Csikszentmihalyi & LeFevre, 1989). Adults are fully developed in terms of their cognitive abilities and possess a useful repository of attentional resources that could be devoted while playing digital games (Kahneman, 1973; Plebanek & Sloutsky, 2017). Also, IGA is similar to full-fledged video games with plenty of challenging and exciting tasks (Nelson & Waiguny, 2012) that would generate enough cognitive load on the adult players to retain a perfect skill-challenge balance. Such a balance would produce optimal experiences among the adults and would further motivate them to develop favorable or positive feelings toward the IGA. Eventually, these positive emotions would transfer from the IGA to the embedded brand and result in a more desirable brand attitude. In comparison, since advergames do not have complicated rules and challenging tasks (Nelson & Waiguny, 2012), they would be perceived as less challenging than IGAs. This would result in a suboptimal level of experience among the adult players, and the aforementioned equilibrium would not be achieved because cognitive skills would outweigh the challenges. Eventually, adult players would generate not as much of positive attitude toward the advergame and the advertised brand (through affect transfer).

Another dimension of argumentation behind the differential effects of IGAs and advergames on adults is conceptualized using the lens of the PKM. Advergames are built around the brands' core positioning (Nelson & Waiguny, 2012; Vashisht et al., 2019) and ask the players to *directly* learn about the use of the brand or its main value propositions through the gameplay (recall the *Fruit Loops* game mentioned in the Introduction) (Huang & Dinu, 2010). Such a persuasion technique would be easily exposed to the adult players because they possess rich advertising and coping knowledge about marketplace persuasion. This would lead to the deployment of a high level of cognitive defence mechanism and a less favorable attitude toward the brand. In comparison, since IGAs allow the embedded brands to appear in the *background* of the gaming environment and do not interrupt or directly intervene in the game-playing process (Nelson & Waiguny, 2012; Terlutter & Capella, 2013) there is a lesser chance that adults would fully employ or activate their persuasion knowledge. In such a scenario, they would show a more favorable attitude toward the embedded brand. Therefore, the following hypothesis is developed:

H1: Adults have a more favorable attitude toward the brand (fictitious) advertised in an IGA as compared to the brand advertised in an advergame.

For children, these logical underpinnings would reverse. It has been argued that in general gamification is more attractive to younger market segments (Dwivedi et al., 2022). Children have limited attentional resources and underdeveloped cognitive skills as compared to adults (Kahneman, 1973; Plebanek & Sloutsky, 2017) which would severely restrict them to efficiently and effectively perform in an IGA. In other words, they would feel over-challenged in IGAs due to the imbalance between skills and difficulty of the tasks involved. This would result in suboptimal experiences or even negative emotions such as anxiety or anger (Nakamura & Csikszentmihalyi, 2002; Waiguny et al., 2012) which would subsequently transfer to the embedded brand. In comparison to IGA, advergames would be perceived much more comfortable to play due to the absence of complex rules and challenging game objectives. More importantly, the playability of advergames would represent a delicate balance between the limited cognitive skills of the children and the inherent challenges. Therefore, the overall experience would be fun-filled and optimal for children which would allow them to transfer favorable game attitude toward the advertised brand.

Furthermore, it is argued that advergames would be less likely to trigger cognitive defence mechanism among children unlike adult players. Since advergames are found very appealing, they would not be able to understand the psychological influences and persuasive mechanisms of these games (Panic et al., 2013). In other words, the commercial intent of advergames would not be exposed to them unlike the adults. Therefore, the subtle nature of advergames would be maintained for children who, with their limited experience to marketplace persuasion and underdeveloped coping tactics, would not raise sceptical viewpoints against the game and the advertised brand. Therefore, we hypothesize:

H2: Children have a more favorable attitude toward the brand (fictitious) advertised in an advergame as compared to the brand advertised in an IGA.

In addition to these aforementioned hypotheses wherein we compare the effects between IGA and advergame separately for adults (H1) and children (H2), it is also encouraging to compare brand attitude between adults and children separately for each of the two gamification formats. Based upon similar lines of argumentation

highlighted above, we hypothesize that when an IGA is played by adults and children, a better skill-challenge fit and, therefore, an optimum level of game-playing experience would be observed for the adults, but not for the children. Enriched game-playing experiences would trigger more favorable attitude toward the game and, eventually, toward the advertised brand for the adults as compared to the children. Therefore, we hypothesize the following:

H3: An IGA triggers more favorable brand attitude when played by adults than when played by children.

However, in the context of playing an advergame, the children would be in an advantageous position than the adults so far enjoying the game is concerned. As discussed earlier, children have inferior cognitive abilities than adults which would eventually match a low-challenging gaming context such as advergame. This would allow developing high positive attitude toward the game and, eventually, toward the advertised brand. On the other hand, since adults have higher cognitive abilities than children, an advergame would not excite them to stay engaged and would generate less favorable game and brand attitude. Therefore, we hypothesize the following:

H4: An advergame triggers more favorable brand attitude when played by children than when played by adults.

2.5 | Brand familiarity as a moderator

The hypotheses developed so far compare the effects of various types of gamification formats and age of the consumers on their attitude toward the fictitious brands embedded in the game. However, for the purpose of validating the robustness and generalizability of the present research, it is important that we also include real brands in our research that are dissimilar in brand familiarity. Such an inclusion would provide critical insights about how to market well-known and less-known brands. In terms of research design, we build on the previous hypotheses to further examine how brand familiarity plays the role of a moderator in the relationship between gamification format, age of consumers, and brand attitude.

In the marketing domain, brand familiarity is a well-researched construct across a wide array of consumption and decision-making situations (e.g., Huang, 2016; J. E. Lee et al., 2018; Velasco Vizcaíno & Velasco, 2019; Verhellen et al., 2016). It is conceptualized as the level of prior exposure or usage of a brand by a consumer in various contexts (Kent & Allen, 1994). This construct also reflects the amount of knowledge and different types of associations a consumer has about a particular brand in her memory (Campbell & Keller, 2003). Consumers are familiar with many advertised brands and unfamiliar with several others. Generally speaking, a brand becomes familiar to an individual due to factors such as prior usage, positive recommendations from family members, friends, and colleagues, exposure to advertisements or some form of persuasive communication about the brand, and general knowledge about packaging, positioning, and so forth. (Campbell & Keller, 2003). Alternatively, a brand becomes unfamiliar if it is new to the market or has never been used by the consumer (J. E. Lee et al., 2018). In this study, we examine how familiar versus unfamiliar brands moderate the relationship between gamification format and brand attitude of adults and children who play the game.

In the past, a large number of studies have been conducted that has taken into account a host of antecedent and consequences of this construct, that is, brand familiarity. For the purpose of developing hypotheses, we consider those empirical works that examine how information about familiar versus unfamiliar brands are processed to form brand attitude. In this context, past studies reveal that consumers do not process information about familiar brands in an extensive manner (Snyder & Stukas, 1999). This happens because when an individual is exposed to a brand about which he or she knows a lot and already possesses deep knowledge structures, extensive information processing is not required; rather, a shallow processing of available information about the brand is sufficient for the consumer to confirm his prior beliefs and knowledge about it (Snyder & Stukas, 1999). Consequently, repeated persuasive information about familiar brands across media such as TV, print, and the Internet become less entertaining and lead to the development of less favorable brand attitude (Campbell & Keller, 2003; Verhellen et al., 2016).

Things are different in the case of unfamiliar brands and that is due to differences in the nature of information processing and brand attitude formation. Since consumers do not possess rich knowledge about unfamiliar brands, their information processing goals are different as compared to familiar brands (Campbell & Keller, 2003). Therefore, when an individual is exposed to persuasive information in an advertisement about an unfamiliar brand, the novelty in stimuli drives the individual to extensively process the information and develop her cognitive schema or knowledge structure (Rhee & Jung, 2019; Verhellen et al., 2016). In such a scenario, if the advertisement is perceived to be exciting and likeable by the consumer, positive attitude and emotions are developed toward the advertisement which are later transferred to the unfamiliar brand (Machleit & Wilson, 1988). Such a transfer of positive attitude takes place because the brand is new to the individual and the advertisement is treated as the only available source of *ready-made* information about the brand (Machleit & Wilson, 1988).

Besides these direct relationships between brand familiarity, information processing, and brand attitude, prior studies have also examined how brand familiarity plays the role of a moderator in a plethora of advertising contexts, for example, online advertising (Y. F. Chen & Chang, 2016), event sponsorships (Simões & Agante, 2014), gamification of advertising (Ghosh et al., 2021), cross-media effects (Huang, 2016), and celebrity-based brand endorsements (Knoll & Matthes, 2017). These studies consistently demonstrate the negative moderation effect of brand familiarity on the relationship between advertising cues and consumers' cognitive, affective, and conative reactions, that is, consumers' reactions to the advertising cues are found to be stronger for unfamiliar as compared to familiar brands.

One simple way to explain this negative moderation is looking through the lens of the schema theory (Simões & Agante, 2014). A schema is "an organized collection of beliefs and feelings represented in a cognitive category" (Solomon et al., 2006, p. 654). The schema is made up of product- and brand-related attributes (Keller, 1993) which becomes stronger as consumers acquire more information or experience about brands (Lord et al., 1979). If a brand is unfamiliar to the consumer, its schema is more susceptible to change with additional information (Simões & Agante, 2014). Therefore, if consumers favorably evaluate an ad of an unfamiliar brand whose schema is not well-developed, the positive evaluations transfer from the ad to the unfamiliar brand and help establish or *upgrade* the weak schema structure (Knoll & Matthes, 2017). In comparison, for familiar brands having rich knowledge structures or stronger schema, positive associations about other attitudinal objects (e.g., ads) are not able to transfer and upgrade the schema of the brands (Cacioppo et al., 1992; Knoll & Matthes, 2017).

Based on these afore-mentioned studies, we hypothesize the moderating role of brand familiarity in the relationships between gamification format, age, and brand attitude. Specifically, we argue that the adult consumers who play an IGA would not deeply process persuasive messages from a familiar brand because of their fully-developed brand knowledge structures. Instead, when they find that a familiar brand is intervening and disrupting their game-playing activity in an IGA, they would feel less likely to form a positive attitude toward the brand. In contrast, when an unfamiliar brand is embedded in an IGA, consumers would process the brand deeply because they do not know much about it. Also, due to the absence of any prior attachment with the brand, positive emotions from the game would be transferred to the unfamiliar brand and, in turn, would result in more favorable brand attitude. Therefore, we hypothesize that:

H5a: Adults have a more favorable attitude toward the unfamiliar brand advertised in an IGA as compared to the familiar brand.

In the advergame, we do not expect any significant difference in brand attitude between an unfamiliar and familiar brand because of the reasons stated below. First, we expect a less favorable attitude of adult players toward familiar brands because they already possess deep knowledge structure or schema about these brands (Snyder & Stukas, 1999), which is difficult to be upgraded through newer positive associations (Knoll & Matthes, 2017). Second, when these adult consumers get exposed to unfamiliar brands in the advergame, they would not find the game challenging enough due to the absence of complex rules and difficult tasks (Nelson & Waiguny, 2012). This would lead to less favorable attitude toward the advergame, as postulated in the first hypothesis. Therefore, although the brand remains unfamiliar to them, a less favorable attitude toward the advergame would transmit through the affect transfer mechanism (Machleit & Wilson, 1988; Rosengren et al., 2020) to the unfamiliar brands. Eventually, the attitude of the adult players toward these unfamiliar brands would also be less favorable in nature. Therefore, we hypothesize that:

H5b: Adults have a similar attitude toward the unfamiliar and familiar brand embedded in an advergame.

Contrary to the nature of brand familiarity effects on adult consumers, we expect a different set of psychological processes and affective outcomes for children. If the brand is perceived to be familiar in the advergame, children would be able to better identify and connect with the relevant brand-related information than the adults (Waiguny et al., 2012). They would also demonstrate a more favorable brand attitude because their prior brand knowledge structures are extremely endurable over time (Phelps & Hoy, 1996). These possibilities do not arise when encountering an unfamiliar brand about which they do not possess any brand knowledge (Simões & Agante, 2014). Therefore, the following hypothesis is developed:

H6a: Children have a more favorable attitude toward the familiar brand advertised in an advergame as compared to an unfamiliar brand.

Finally, similar to the adult players, brand familiarity is expected to exert no substantial effect on children's brand attitude in the case of IGA. Such a postulation is based on earlier findings that children would demonstrate less favorable attitude toward the IGA because of its complexity in rules and difficulty in completion of game-related tasks (Nelson & Waiguny, 2012; Terlutter & Capella, 2013). Eventually, through the aforementioned affect transfer mechanism (Machleit & Wilson, 1988; Rosengren et al., 2020) less favorable attitude toward the IGA would transmit to the familiar brands advertised in the game. For the unfamiliar brand about which they already possess incomplete brand knowledge structures (Knoll & Matthes, 2017; Simões & Agante, 2014) a less favorable attitude is expected. This leads to the following hypothesis:

H6b: Children have a similar attitude toward the unfamiliar and familiar brand embedded in an IGA.

2.6 | Effects of gamification format and age of consumers on purchase intention mediated by game engagement

We further predict the effect of gamification format and consumers' age on the intention to pursue the advertised brands. During the course of this examination we also plan to study the underlying process through which the aforementioned effect takes place. For this purpose individuals' engagement while playing either an advergame or an IGA is used as a potential mediator. First, we argue that when adults play an IGA, they would feel more engaged in the game than when they play an advergame. This would happen

because an IGA, as compared to an advergame, is more complex (Cauberghe & De Pelsmacker, 2010; Nelson & Waiguny, 2012) and offers higher congruence between the difficulty level of the game and the cognitive skills of adults, which would lead to better playability and flow experience (Csikszentmihalyi & LeFevre, 1989; Fong, et al., 2015). In other words, since adults have fully-developed attentional resources and cognitive capabilities, they would be able to deploy these capabilities in an IGA to handle its high level of complexity and challenge and, therefore, feel more immersed (i.e., flow) and engaged in the medium. On the other hand, since an advergame mostly offers simplicity and a low level of challenge, adults would not be able to use all of their cognitive capabilities and, therefore, would feel less engaged. Eventually, a more immersed or engaged player having optimal experience would demonstrate higher purchase intention of the advertised brand as found in other mediated and information processing contexts such as smartphone advertising (Martins et al., 2019), online shopping (Ozkara et al., 2017), social commerce (Yusuf et al., 2018), fan page in social media (Rahman et al., 2018), and live streaming digital marketing (Addo et al., 2021) to name a few. Therefore, we hypothesize that:

H7: Adults have a higher game engagement in an IGA as compared to an advergame that subsequently has a positive effect on purchase intention.

When children gamers are taken into consideration, we argue that they would feel more engaged in an advergame than when they play an IGA. Advergames are less challenging and simpler to play than IGAs, which would match the underdeveloped cognitive capabilities of children. This challenge-skill fit would lead to higher game engagement in the context of an advergame than an IGA. Eventually, higher engagement would lead to more favorable purchase intention as discussed above. Therefore, we develop the following hypothesis:

H8: Children have a higher game engagement in an advergame as compared to an IGA that subsequently has a positive effect on purchase intention.

3 | OVERVIEW OF STUDIES

We test the research hypotheses using three studies. In Study 1, we examine H1–H4 in the context of fictitious brands. In Study 2, we include real brands and test H5a, H5b, H6a, and H6b. Finally, in Study 3, we use fictitious brands to test the mediation effects of game engagement depicted in H7 and H8. In the following two sections, we separately present the research methodologies and results of these studies (see Figure 1 for the conceptual framework).

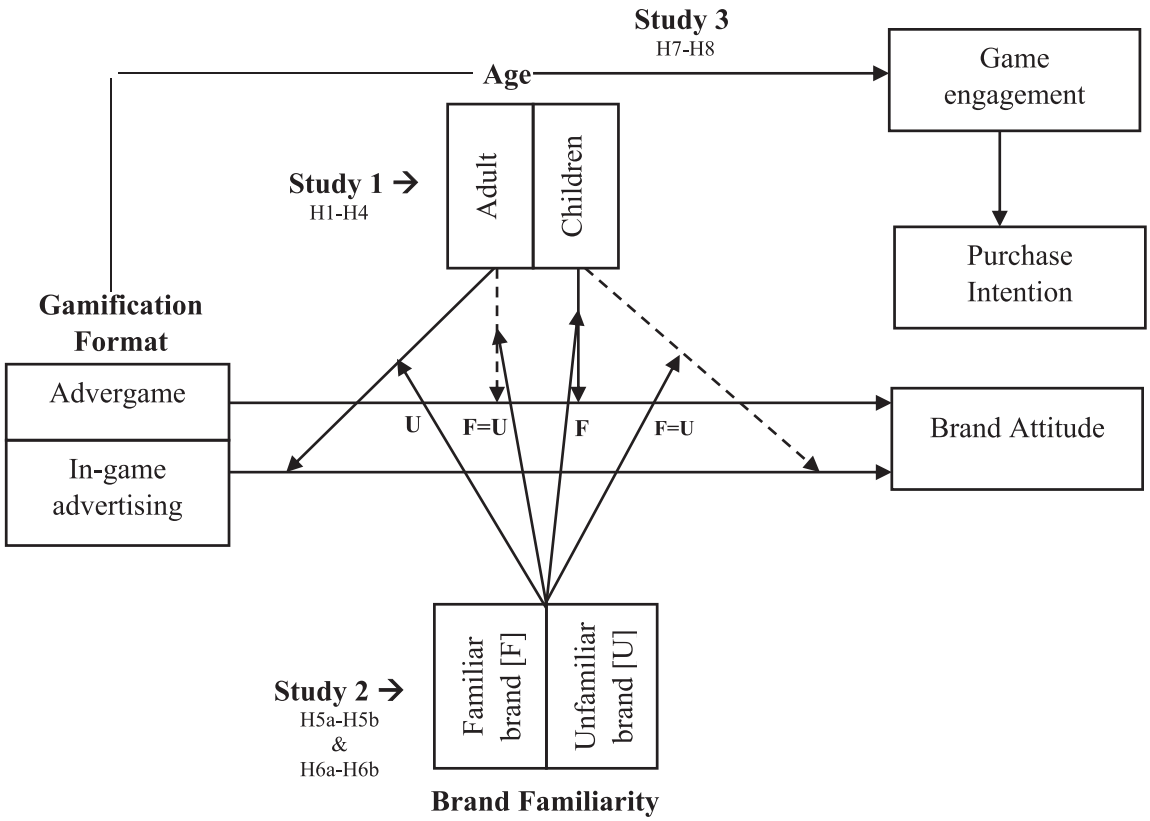

FIGURE 1 Conceptual framework

4 | STUDY 1

4.1 | Method

For testing the hypotheses, we applied a 2 (gamification format: advergame vs. IGA) × 2 (age: children vs. adults) mixed experimental design. In the experiment, gamification format was manipulated as a repeated measure variable, and age was treated as a between-subject measure while brand attitude was the dependent variable.

4.1.1 | Stimuli development

To develop the stimuli, two focus group interviews were first conducted using participants from different age groups. Children respondents were selected from a primary school in a major city in southern India. Adult respondents were post-graduate students of a large South Indian university. In the first focus group interview, the participants were children (n = 11, M_{age} = 7.2 years, SD = 1.22 years) and in the second focus group, the participants were adults (n = 12, M_{age} = 22.3 years, SD = 2.23 years). These focus group interviews were conducted primarily with a twofold objective. The first objective was to identify a popular game genre preferred by players across adults and children. The second objective was to identify two product categories based on which the brand integration could be executed in the advergame and the IGA. During both the focus group interviews, the participants repeatedly cited that 'action and adventure' was their preferred game genre. The results also revealed the following product categories that could be advertised in games: mobile phone, cosmetics, carbonated beverage, energy drink, apparels, laptop, chocolate bar, ready-to-eat food, and engine oil. We subsequently asked each focus group participant to rank these product categories based upon their perceived frequency of occurrence in video games. Eventually, we selected the two most frequently reported products and developed fictitious brand names for each of them (Product Category 1: Energy drink, Mean Frequency Rank = 2.91, Brand Name: GATRIOT POWER; Product Category 2: Chocolate bar, Mean Frequency Rank = 2.95, Brand Name: CANDY BAR). Subsequently, we contacted a game development agency and consulted with them on the nature of action and adventure game to be developed. It was suggested by them that a first-person shooter game would be a good fit in this genre. Accordingly, we asked them to develop the game and embed the identified brands (i.e., GATRIOT POWER and CANDY BAR) within the gaming environment. The details of these games are described below.

In the games (IGA and advergame) the subjects played the role of a commando whose mission was to make destructive raids in the enemy territories. Although these two games belonged to the same genre and were identical in terms of the overall gaming environment (e.g., gaming background, peripheral scenes, game music, gaming objects, sound and graphics quality, and the character of the commando and his enemies), the way brands were integrated within the game were completely different. In the advergame, the brand was the central object of gameplay with no additional placement in the background. The player had to frequently consume the branded energy drink (GATRIOT POWER) and replenish the energy level which kept on reducing automatically as the game proceeded. Moreover, the message "Gatriot Power ingested—energy refilled—strength boosted" explicitly appeared on the right-hand upper corner of the screen every time the commando consumed the drink. In comparison, the IGA embedded the branded chocolate bar (CANDY BAR) as banners in both the central and peripheral areas of the screen. Thus, the brand message was not interwoven in the IGA as it happened in the case of advergame. Moreover, there were other explicit structural differences in the IGA and the advergame that were developed. While the IGA had four missions or stages with an overall high level of difficulty (enemies were tough to be killed, eight different weapons that varied in power and functionality), the advergame had only one mission with a low difficulty level (enemies could be easily killed, two weapons with different power but same functionality). The approximate time to complete the IGA and the advergame also varied significantly—22 min for the former and 6 min for the latter format. Finally, these structural differences between IGA and advergame met the criteria suggested by Kinard and Hartman (2013) in two ways. First, while the brand was integrated as a central theme in the advergame, the brand embedded in the IGA did not qualify for centrality as it was introduced just as a background (i.e., banner) in the gaming environment. Second, the product was presumed to carry a better match with the overall game theme or lifestyle (action/shooter) in the advergame condition (energy drink) than in the IGA condition (chocolate bar).

After the stimuli development, the games were pre-tested using two different groups ($N_{group\ 1}$: 29, M_{age} = 15.55 years, SD = 2.11 years; $N_{group\ 2}$: 32, M_{age} = 16.75 years, SD = 2.31 years). In the pretests, the subjects played one of these two games after which we asked them to report the extent of perceived realism (e.g., "the game which I played is realistic in nature"), and two other questions measuring the brand as a central theme (e.g., "I consider that the brand used in the game worked as the central theme") and congruence between the game lifestyle and the advertised product ("The lifestyle of the game appreciate the product embedded in the game"). Also, we measured the perceived difficulty in playing the IGA and the advergame using the item from Ghosh (2016) ("The game is difficult to play"). All these questions were evaluated on a seven-point Likert scale (1 = "totally disagree" to 7 = "totally agree"). Further, the analysis of the realism scores were reported as high in both the game conditions ($M_{advergame}$ = 4.91, SD = 0.67; M_{IGA} = 4.96, SD = 0.69). In addition, the results also supported that game as a central theme ($M_{advergame}$ = 4.88, SD = 0.88; M_{IGA} = 2.91, SD = 0.71; $t_{(59)}$ = 12.11, p < 0.01), game lifestyle congruence ($M_{advergame}$ = 4.71, SD = 0.82; M_{IGA} = 3.11, SD = 0.66; $t_{(59)}$ = 23.11, p < 0.01, and difficulty levels ($M_{advergame}$ = 4.58, SD = 0.65; M_{IGA} = 3.21, SD = 0.61; $t_{(59)}$ = 9.13, p < 0.01) were statistically different across the gamification formats. Thus, the pretests confirmed that the stimuli were suitable for manipulation in the main experiment.

4.1.2 | Participants and procedure

Since the study required experimentation with children and adult players, we recruited subjects from two different settings, that is, primary school and university, and the experiments were conducted in these respective locations. In the school setting, the subjects were identified by the supervising teacher based on their interest in playing video games. In total, 120 student gamers (M_{age} = 7.11 years, SD = 1.03 years, 59% males, 41% females, see Table 1 for sample demographics) from a primary school were identified and their parents were contacted for permission to participate in a video game-related experiment. Specifically, permission was sought for allowing their children to play a shooting game that had violent content in it. We also obtained important ethical clearances from the school authority before conducting the study. Once we obtained the necessary permission, these subjects were assigned with a unique ID and later divided into six batches (n = 20 in each batch). All of them were then invited to the computer lab of the school during two different slots (morning and afternoon). When the subjects arrived, they were randomly assigned to the computer consoles. Thereafter, some basic experiment-related instructions were provided to them, and were asked to click any one of the two preinstalled game icons (advergame vs. IGA) and complete playing the game only once. Similarly, in the afternoon session, they were again invited to the computer lab and instructed to play the *other* game that they did not play in the morning session. After the gameplay in each session, the questionnaire in the form of a booklet was provided to the subjects. Two research assistants were available who guided the subjects through the questionnaire in case there was any difficulty. Finally, during the debriefing session, none of the subjects could identify the research objectives which ruled out any potential demand bias. The same process of experimentation was carried out with the adult gamers except the fact that no permission was taken from their parents and no assistance was provided in answering the questions presented in the questionnaire. These subjects were selected from a large South Indian university after seeking their willingness to participate in a game-playing experiment. Upon invitation, 176 under-graduate and post-graduate students reported their willingness from which we randomly selected 130 students (M_{age} = 22.33 years, SD = 2.34 years, 65% males, 35% females). In both settings, we ensured that no other game-related experimentation happened recently (last 3 months) with any of the subjects. Finally, we debriefed and thanked the subjects for their active participation in the experiments.

4.1.3 | Measurement

The questionnaire booklet consisted of several sections. In the first section, the subjects reported their demographics (e.g., age and gender). In the second section, we measured the potential covariates such as video game-playing experience with a specific genre, and perceived easiness to play the game. Game-playing experience was evaluated using the following item from Perse (1986) (e.g., "playing action and adventure games is one of the things I do every day": 1 = "totally disagree" to 7 = "totally agree"). Another item (e.g., "I find it easy to play the game": 1 = "totally disagree" to 7 = "totally agree") measured subjects' perceived easiness which was adapted from Davis (1985). In the third section, subjects were asked to report their perception of realism. To check for the manipulation of the gamification format, we also asked two separate questions in this section. The items used to measure perceived realism and IGA versus advergame manipulation were similar to those used in the pretests. Finally, in the fourth section, we measured subjects' brand attitude toward using a scale adapted from Cicchirillo and Mabry (2016). In this scale, there were 11 items which were semantic differential in nature and were evaluated on anchors between one to seven. These items asked the participants to report their evaluation toward the brand featured in the advergame and the IGA.

4.2 | Data analysis and results

We first examined the extent of realism perceived in both the gamification formats. Results supported that children and adult subjects found both the formats to be highly realistic in nature ($M_{adult\text{-}advergame}$ = 4.77, $M_{adult\text{-}IGA}$ = 4.90, $M_{children\text{-}advergame}$ = 4.69, $M_{adult\text{-}IGA}$ = 4.76). Further, a manipulation check for gamification format was done and the result revealed a significant difference in the mean score across the formats ($M_{advergame}$ = 4.65, M_{IGA} = 2.82,

TABLE 1 Sample demographics

Demographics	Categories	Study 1		Study 2	
		Adult (%)	Children (%)	Adult (%)	Children (%)
Gender					
	Male	85 (65%)	71 (59%)	98 (61%)	99 (62%)
	Female	45 (35%)	99 (41%)	62 (39%)	61 (38%)
Average age (in years)		22.33	7.11	27.77	7.66
Family income (in Rs.)	Less than 5 Lakhs	35 (23%)	15 (13%)	29 (17%)	35 (22%)
	6–10 Lakhs	43 (33%)	46 (38%)	43 (28%)	51 (32%)
	Above 10 Lakhs	52 (40%)	59 (49%)	88 (55%)	74 (46%)

$t_{(248)} = 23.11$, $p < 0.01$). Further, we also found that there was a difference in the mean age across the children vs. adults ($M_{adult} = 22.33$, $M_{children} = 9.33$, $t_{(248)} = 18.66$, $p < 0.01$). Thus, the intended effects of manipulation on the subjects were confirmed. Thereafter, we checked some important assumptions such as sphericity of the repeated measure, homogeneity of variance of the between-subject measure, and normality assumptions. The test of sphericity assumption with respect to variable gamification format reported that it follows the assumption (Mauchly'W = 0.965, Chi-square = 0.612, $p = 0.736$). Similarly, the test of equality of variance following Levene's test also supported that the data follows the assumptions ($advergame_{[male\ vs.\ female]} = 1.009$, $p > 0.01$, $IGA_{[male\ vs.\ female]} = 0.865$, $p > 0.01$). Finally, the test of normality of the data also supported that it follows the assumption of normality (Shapiro–Wilk = 0.896, $p = 0.065$).

To examine the hypotheses, we applied a 2 (gamification format: advergame vs. IGA) × 2 (age: children vs. adult) mixed-measures analysis of covariance (ANCOVA) with the gamification format as a repeated measure and age as a between-subject measure. The attitude toward the brand was the dependent variable, and game-playing experience and perceived easiness were incorporated as the covariates. However, the results revealed that the covariates such as game-playing experience ($F_{(1,\ 246)} = 0.001$, $p = 0.979$ and perceived easiness ($F_{(1,\ 246)} = 0.840$, $p = 0.360$) had no statistically significant effect on the dependent variable.

Next, we examined the effect of a two-way interaction between gamification format and age on gamers' brand attitude. As shown in Figure 2 and Table 2, a statistically significant effect ($F_{(1,\ 246)} = 789.67$, $p = 0.000$) was found. Followed by this, we performed two different planned contrast tests. In these tests, we found that when children were repeatedly exposed to the advergame (vs. IGA), the brand advertised in the advergame generated a more favorable attitude than the brand advertised in the IGA (Wilk's $\Lambda = 0.344$, $F_{(1,\ 248)} = 243.89$, $p < 0.01$; $M_{children\text{-}advergame} = 4.70$, $M_{children\text{-}IGA} = 3.14$). Similarly, the results also showed that when adults were repeatedly exposed to the advergame (vs. IGA), their attitude toward the brand embedded in the IGA was more favorable than the brand advertised in the advergame (Wilk's $\Lambda = 0.422$ $F_{(1,\ 248)} = 339.25$, $p < 0.01$; $M_{adult\text{-}advergame} = 3.38$, $M_{adult\text{-}IGA} = 4.65$). Therefore, the study supported hypotheses H1 and H2.

Further, we also conducted two planned simple contrast tests to examine whether differences in game formats (IGA and advergame) trigger differences in brand attitude when played by adults (vs. children). In this attempt, the first contrast test reported that in the case of IGA, it triggered more favorable attitude when played by adults ($M_{[adults]} = 4.66$) in comparison with children ($M_{[children]} = 3.14$, $F_{[1,\ 248]} = 461.54$, $p < 0.00$). The second contrast test revealed that in the case of advergame there was more favorable attitude when it was played by children ($M_{[adults]} = 4.70$) in comparison with adults ($M_{[children]} = 3.38$, $F_{[1,\ 248]} = 363.36$, $p < 0.00$). Thus, we found support for H3 and H4.

5 | STUDY 2

5.1 | Method

In study 2, we used a 2 (gamification format: advergame vs. IGA) × (age: children vs. adults) × 2 (brand familiarity: familiar vs. unfamiliar) between-subjects experimental design that included

TABLE 2 Contrast test results [Study-1]

Age	Game format	Mean	Wilks' Λ	*F* (*df*)
Children	Advergame	4.70	.344	243.89* (1, 248)
	IGA	3.14		
Adult	Advergame	3.38	.422	339.25*
	IGA	4.65		(1, 248)

Abbreviation: IGA, in-game advertising.

*Significant at 0.01 level.

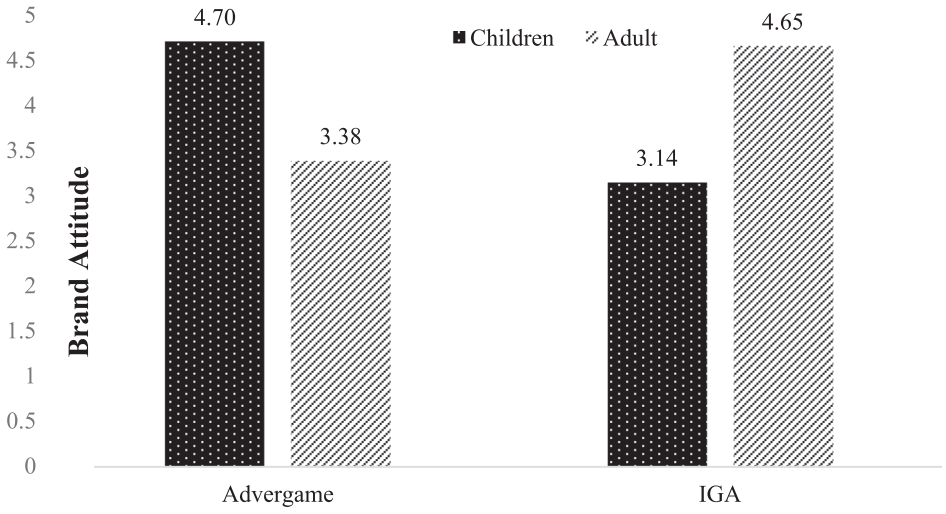

FIGURE 2 Interaction of gamification format × age on brand attitude [Study-1]. *Note*: IGA refers to in-game advertising.

brand attitude as the outcome variable. This study was different from the previous one in the following ways. First, in the previous study, we repeatedly exposed the subjects to two different gamification formats; thus, the confounding effects of their prior gaming exposure could not be avoided. In Study 2, we not only eliminated the possibility of any such effects but also validated the robustness of the research by using a between-subjects design. Second, we designed this experiment to examine the moderating role of brand familiarity as an important contextual factor. Finally, we used real brands and nonstudent adult subjects which also increased the generalizability of the present research.

5.1.1 | Stimuli development

Similar to Study 1, the same games (advergame and IGA) and product categories (energy drink and chocolate) were used as stimuli. However, we selected real brands from these product categories. For this purpose, two focus group interviews were conducted using adults ($n = 12$, $M_{age} = 26.12$ years) and children ($n = 10$, $M_{age} = 8.2$ years) participants. The same primary school and the South Indian university used in Study 1 were approached to select the children and adult respondents for these interviews. The focus group interviews led to the selection of two brands in each product category (energy drink—familiar brand: *Red Bull*, unfamiliar brand: *Crunk*; chocolate—familiar brand: *Cadbury Bournville*, unfamiliar brand: *Parle Kisme*). Thereafter, a pre-test was done to validate the familiarity of the selected brands among adults and children ($n_{adults} = 26$, $n_{children} = 29$). This pretest exposed the subjects to the selected brands and measured their brand familiarity using a semantic differential scale (1 = "not at all familiar," 7 = "highly familiar") adapted from Campbell and Keller (2003). The results reported significantly higher mean scores for the familiar brands than the unfamiliar ones in the energy drink category ($M_{Red\ Bull} = 4.11$ vs. $M_{Crunk} = 2.17$, $p < 0.01$) and chocolate category ($M_{Cadbury\ Bournville} = 4.23$ vs. $M_{Parle\ Kisme} = 2.21$, $p < 0.01$). Following the pretest, the game development agency hired earlier was reappointed for advertising the brands in both the gamification formats. The energy drink and chocolate brands were advertised in the advergame and IGA respectively (similar to Study 1). This resulted in four experimental stimuli: advergame with familiar brands, advergame with unfamiliar brands, IGA with familiar brands, and IGA with unfamiliar brands. In the advergame, the subjects were required to use both the brands in tandem (i.e., Red Bull and Crunk) for the revival of energy. After using one brand (say, Red Bull) through a dedicated on-screen push button, a message (e.g., "Red Bull ingested—energy refilled—strength boosted") flashed on the screen. Immediately after this, the push-button was deactivated while another dedicated push-button for the other brand (i.e., Crunk) became active, and the subject continued playing the game. This process alternately continued throughout the game play. In the IGA, both the brands (i.e., Cadbury Bournville and Parle Kisme) were embedded as banners in the background of the gaming environment.

5.1.2 | Participants and procedure

In Study 2, we selected the children from a school that had a prominent student forum, while the adults were recruited from a consumer panel. We invited the subjects ($n_{adults} = 160$, $M_{Age} = 7.66$ years, 62% males, 38% females; $n_{children} = 160$, $M_{Age} = 27.77$ years, 61% males, 39% females, see Table 1 for sample demographics) after they showed their willingness to be a part of the experiment similar to the previous study. For the children, we took necessary permission and ethical clearances from the parents and the school authority respectively. When they arrived for the experimentation, subjects in each demographic group (children, adults) were separately directed to one computer lab where they were further alocated randomly into one of the four experimental conditions. Later, they were instructed to choose their respective computer consoles which were pre-installed with one of the four stimuli. Before the gameplay, the researcher briefed the modalities and provided some basic instructions. After completing playing the game only once, the subjects were directed to the questionnaire seeking their responses toward various measurements. Research assistants were available to provide general help to child subjects when they filled up the questionnaires. Finally, we debriefed and thanked all the subjects for actively participating in the experiment.

5.1.3 | Measurement

The measures used in the questionnaire were similar to the previous study, including the items on manipulation check, covariates, and the outcome variables. However, in Study 2 we included additional covariates that measured product category involvement and brand image. A single item on brand familiarity was adapted from Campbell and Keller (2003). Subjects' brand image was measured by adapting the scale from Martínez Salinas and Pina Pérez (2009). It could confound with the cause-and-effect relationships proposed in the current study and hence, was considered as a covariate.

5.2 | Data analysis and results

We first tested some assumptions related to the usability of the data set such as normality and homogeneity of variance assumptions. Thereafter, manipulation checks were conducted which revealed that the average age of the subjects (adults vs. children) was statistically different ($M_{children} = 7.66$ years vs. $M_{adults} = 27.77$ years; $t_{(318)} = 21.11$, $p < 0.01$). Further, the difference in gamification formats was assessed by comparing the mean scores of all three parameters used in Study 1, that is, lifestyle, centrality, and difficulty level. As expected, the results indicated a higher average score of the parameters in the advergame as compared to the IGA ($M_{Advergame} = 4.33$ vs. $M_{IGA} = 2.91$; $t_{(318)} = 18.12$, $p < 0.01$). Finally, brand familiarity also varied significantly as expected ($M_{familiar} = 4.54$ vs. $M_{unfamiliar} = 2.50$; $t_{(318)} = 11.15$,

$p < 0.01$). Thus, we confirmed that the manipulations were successfully done in this study.

To test the hypotheses, we performed a 2 (gamification format: advergame vs. IGA) × 2 (age: children vs. adults) × 2 (brand familiarity: familiar vs. unfamiliar) between-subjects ANCOVA. The outcome variable was brand attitude. In the ANCOVA, covariates such as brand image and product category involvement, easiness to play the game, and subjects' game-playing experience did not show any statistical significance ($p > 0.05$). Further, we examined the effect of a three-way interaction (age × gamification format × brand familiarity) on brand attitude. Table 3 revealed that this interaction effect was significant ($F_{(1,\ 309)} = 11.067$, $p < 0.01$). This allowed us to conduct four follow-up contrast tests to examine the research hypotheses (H5 and H6). Results revealed that when adults were exposed to the IGA containing an unfamiliar (vs. familiar) brand, higher brand attitude was manifested ($M_{\text{IGA-unfamiliar brand}} = 4.81$ vs. $M_{\text{IGA-familiar brand}} = 3.45$; $F_{(1,\ 309)} = 207.81$, $p < 0.05$). This led us to support H5a. However, when they played the advergame containing an unfamiliar brand as compared to a familiar one, no significant difference in brand attitude was observed ($M_{\text{advergame-unfamiliar brand}} = 3.71$ vs. $M_{\text{advergame-familiar brand}} = 2.99$; $F_{(1,\ 309)} = 3.684$, $p > 0.05$). Therefore, we also supported H5b. Further, as shown in Figure 3 and Table 4, the results also revealed that when children were exposed to the advergame that advertised a familiar (vs.

TABLE 3 Between-subjects ANCOVA results [Study-2]

Parameters	*F* (*df*)	Sig.
cov1 (perceived easiness)	0.977 (1, 309)	0.324
cov2 (game-playing experience)	0.139 (1, 309)	0.710
cov3 (brand image)	0.009 (1, 309)	0.926
cov4 (product category involvement)	0.108 (1, 309)	0.778
Age	8.863 (1, 309)	0.003
Game format	24.027 (1, 309)	0.000
Brand familiarity	2.418 (1, 309)	0.121
Age × Game format	297.717 (1, 309)	0.000
Age × Brand familiarity	319.363 (1, 309)	0.000
Game format × Brand familiarity	251.136 (1, 309)	0.000
Age × Game format × Brand familiarity	11.067 (1, 309)	0.000

Note: values in the parentheses show degrees of freedom. Sig. indicates associated probability values of the test statistics.

Abbreviation: ANCOVA, analysis of covariance.

TABLE 4 Contrast test results [Study-2]

Age		Mean	*F* (*df*)	Sig.
Children				
Advergame	Unfamiliar	3.128	374.28	0.000
	Familiar	4.953	(1, 309)	
IGA	Unfamiliar	3.448	0.021	0.885
	Familiar	3.462	(1, 309)	
Adult				
Advergame	Unfamiliar	3.172	3.684	0.056
	Familiar	2.991	(1, 309)	
IGA	Unfamiliar	4.814	207.818	0.000
	Familiar	3.451	(1, 309)	

Note: values in the parentheses show degrees of freedom. Sig. indicates associated probability values of the test statistics. IGA refers to in-game advertising.

Abbreviation: IGA, in-game advertising.

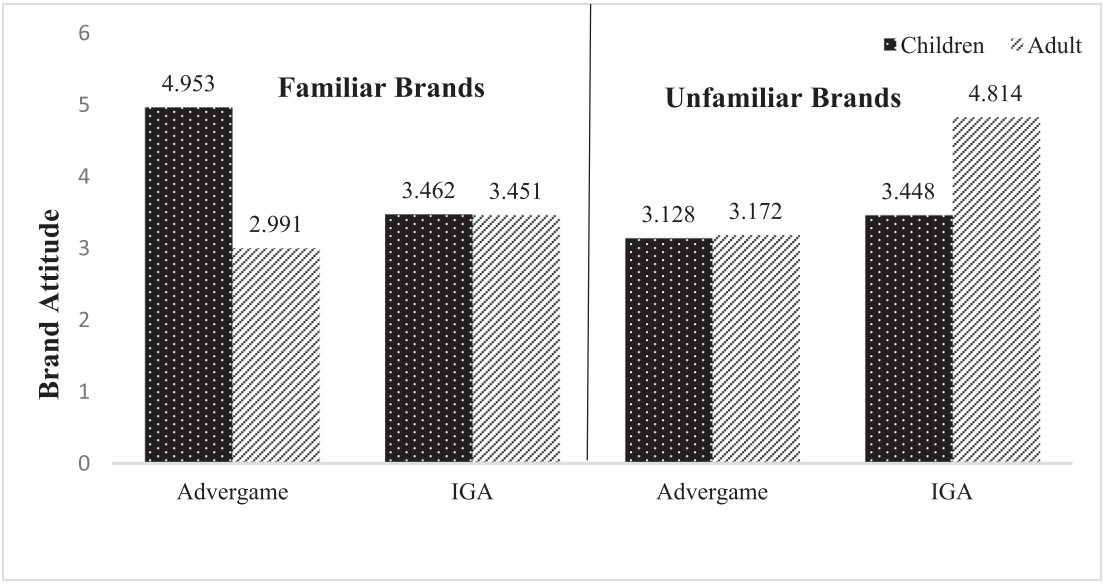

FIGURE 3 Interaction of gamification format × age × brand familiarity on brand attitude [Study-2]. IGA refers to in-game advertising.

unfamiliar) brand, a more favorable brand attitude was found ($M_{\text{advergame-familiar brand}} = 4.95$, $M_{\text{advergame- unfamiliar brand}} = 3.12$; $F_{(1,\ 309)} = 374.28$, $p < 0.05$). Therefore, we found support for H6a. Finally, it was revealed that when the child subjects played the IGA that embedded a familiar (vs. unfamiliar) brand, no significant difference in brand attitude existed ($M_{\text{IGA-familiar brand}} = 3.46$, $M_{\text{IGA-unfamiliar brand}} = 3.44$; $F_{(1,\ 309)} = 0.021$, $p > 0.05$). Therefore, we also supported H6b in the study.

6 | STUDY 3

6.1 | Design

Study 3 advanced the previous two studies in several ways. First, in this study, we examined the interactive effect of gamification format and age on purchase intention, a conative element of consumer behavior. Second, this study examined the process mechanism (e.g., game engagement) between the interaction effect and purchase intention and tested H7 and H8. Thus, the study used a 2 (gamification format: advergame vs. IGA) × 2 (age: children vs. adults) mixed design with purchase intention as the outcome variable. In this design, gamification format was used as the repeated measure and age as a between-subject measure.

6.1.1 | Participants and procedure

In this experiment, we used the same stimuli as used in Study 1. However, unlike Study 1 we used the same brand name in both the formats of gamification (e.g., GATRIOT POWER). The study recruited the subjects from two different online gaming community platforms. These two gaming community platforms differed based on the age group and membership eligibility. In the first community, the membership was exclusively for children (less than 15 years old) and in the second one, the majority of the participants were adults and reported an average age of 28.9 years. We sought participation through an open invitation on the respective community pages. Although the children were already members of the gaming community, permission were sought from their parents through emails. Following this, 100 interested subjects were randomly chosen from each age group and invited to the online experiment ($n_{\text{children}} = 100$, $n_{\text{adult}} = 100$) which was moderated by both the researchers through a video-conferencing platform. After providing detailed instruction to the subjects about playing the game, they were exposed to the gamification formats with a break of 30 min. To control the order bias, we randomized the order in which the participants were exposed to these formats. As a part of this exposure, two different game URLs embedding each of these formats were sent to the subjects and were instructed to play the game on their computer consoles one after the other. After the gameplay, we instructed them to close the game window and respond to the online questionnaire containing manipulation questions, covariates, mediator, and relevant demographic details. Once they completed this process, the subjects were informed about their participation incentive, debriefed, and thanked for their active participation.

6.1.2 | Measurement

The manipulation and covariate measurements were the same as in Study 1. The outcome variable, that is, purchase intention, was measured using three items adapted from Till and Busler (2000). The mediator, that is, game engagement, was measured through an eight-item scale adapted from Hamari et al. (2016).

6.2 | Data analysis and results

Before the formal test of hypotheses, we first examined the effect of manipulation of the gamification format. Specifically, here we examined whether subjects who played an advergame or an IGA perceived whether the advertised brand was integrated (i.e., advergame) or not integrated (i.e., IGA) in the gaming environment. The result revealed a significant difference in the mean score across the formats ($M_{\text{advergame}} = 4.32$, $M_{\text{IGA}} = 3.10$, $t = 17.28$, $p < 0.01$). Further, to test the research hypotheses (H7 and H8), we followed the PROCESS approach (Hayes, 2013) and used model 7 with 5000 bootstrapped samples. In this model, we applied indicator-coded age (0 = adults, 1 = children) as the independent variable, gamification format (0 = advergame, 1 = IGA) as the moderator, game engagement as the mediator, and purchase intention as the outcome variable. We also controlled the covariates; however, they did not show any statistically significant effects ($p > 0.05$). The results supported that age ($\beta = 2.17$, SE.= 0.0862, LLCI = 2.02, ULCI = 2.31, $t = 25.21$, $p < 0.01$), and gamification format ($\beta = 1.81$, SE.= 0.0862, LLCI = 1.66, ULCI = 1.95, $t = 21.06$, $p < 0.01$) influenced game engagement. Further, the results also supported a statistically significant interaction (age × gamification format) on engagement ($\beta = -4.027$, SE = 0.1218, LLCI = −4.22, ULCI = −3.82, $t = -33.05$, $p < 0.00$). The results also supported that, the mediator engagement positively influenced the purchase intention ($\beta = 0.8305$, SE = 0.0385, LLCI = 0.766, ULCI = 0.8940, $t = 21.54$, $p < 0.00$). The conditional mediation analysis demonstrated that adults had higher engagement in the IGA in comparison to the advergame, which further resulted in purchase intention that was statistically significant (effect = 1.5084, Boot-SE = 0.0840, 95%Boot-LLCI = 1.349, Boot-ULCI = 1.674). Another set of conditional mediation analysis revealed that children had lower engagement in the IGA as compared to the advergames which affected purchase intention significantly (effect = −1.836, Boot-SE = 0.0823, 95%Boot-LLCI = −1.99, Boot-ULCI = −1.678). Finally, this difference in conditional indirect effect was also supported by the significant index of moderated mediation (index = −3.34, Boot-SE = 0.1335, 95%Boot-LLCI = −3.60, Boot-ULCI = −3.088).

Further, to test the age-specific hypothesis (as mentioned in H7 and H8), we performed two separate analyses for adults and children.

The first analysis (for adults) revealed that game engagement was higher in an IGA (coded as 1) that an advergame (coded as 0) ($\beta = 1.81$, SE = 0.08, $p < 0.01$) that eventually resulted in purchase intention ($\beta = 0.10$, SE = 0.03, $p < 0.01$). It was also evident from the indirect effect estimates (indirect effect = 0.181, Boot-SE = 0.0455, 95% Boot-LLCI = 0.09182, Boot-ULCI = 0.2701) that adults exposed to an IGA (in comparison to an advergame) had higher engagement and purchase intention. Thus, we found support for H7. The second analysis (for children) also revealed that while exposed to an advergame (coded as 1) in comparison to an IGA (coded as 0) the game engagement was higher ($\beta = 1.77$, SE = 0.05, $p < 0.01$) that affected purchase intention significantly ($\beta = 0.11$, SE = 0.041, $p < 0.01$). The indirect analysis of the same also reported a statistically significant result (indirect effect = 0.1947, SE = 0.043, 95%Boot-LLCI = 0.1104, Boot-ULCI = 0.2789). Thus, the study supported H8.

7 | DISCUSSION

Marketers have been using video games to persuade consumers for decades. Persuasion through gamification is approached in two main ways: (1) developing a game that is centered around the key value propositions of the brand where the gameplay is quick and easy without any complicated rules and targets (i.e., advergame) and (2) placing brand elements such as names and logos in the form of billboards and banners in prebuilt and full-fledged video games (i.e., IGA). Although both these formats have coexisted for many years, not much research has been conducted to date to compare their persuasive effectiveness. Moreover, even though marketers use IGA and advergames to persuade consumers of all ages, an explicit comparison of the persuasive efficacy between children and adults is also missing.

Motivated by the absence of research in the extant gamification literature, the present article proposed and validated a framework that examined the effects of gamification format (advergame vs. IGA) and age (children vs. adults) on brand attitude and purchase intention. Three studies were conducted for this purpose. In Studies 1 and 2, the outcome variable was brand attitude while in Study 3, we tested the effects on purchase intention. Moreover, in Study 1 we used fictitious brands while in Study 2, real brands with varying levels of familiarity were used. Finally, in Study 3, we examined the mediating influence of game engagement to explore the underlying mechanism of the effectiveness of gamification formats and age of consumers on purchase intention.

The first study revealed that adults rated the brand advertised in the IGA more favorably than the one advertised in the advergame based on the hypotheses developed using the theoretical underpinnings on the PKM and affect transfer mechanism. There were two main reasons behind this finding. First, the IGA generated an optimal level of experience for the adults because their improved cognitive skills matched the game's high level of challenge. In comparison, the advergame was perceived to be under-challenging by the adults and triggered a suboptimal level of experience. Therefore, the adult players had more positive feelings toward the IGA than the advergame, which subsequently transferred to the advertised brand. Moreover, the IGA generated a lesser amount of cognitive defence mechanism because the brand was placed in the background of the gaming environment and did not interrupt the game-playing process. In comparison, the advergame explicitly exposed its persuasive intent to the adults because the gameplay itself reflected the brand message. This also resulted in a more favorable attitude to the brand advertised in the IGA than in the advergame.

For the children, a different set of psychological processes was operational during the gameplay. Since children had little persuasion knowledge, they could not identify the persuasive agenda of the advergame like an adult, which triggered a lesser amount of cognitive defence against the advertised brand. Besides, due to the possession of limited cognitive skills, they were able to fully absorb the fun component of the advergame and also appreciate the easiness in playability. This helped in maintaining an optimum balance between the cognitive skills and overall game challenge for the children. Eventually, they had more positive emotions toward the advergame, which later transferred to the advertised brand. Compared to this situation, when the children played the IGA, the complex rules, difficult-to-manipulate objects, and challenging nature of the game led to less favorable game attitude and subsequently attitude toward the brand. These research outcomes related to brand attitude of adults and children are not only original and insightful but also consistent with the postulations made in past literary works, specifically, in line with the concept of flow experience in computer games that is derived by striking a fine balance between the challenge in game tasks and skills of the payers (Csikszentmihalyi, 1988; Teng et al., 2022a, 2022b; Waiguny et al., 2012). Similar to what Nakamura and Csikszentmihalyi (2002) postulated, our research reveals that suboptimal solutions (situations of mismatch between challenge and skills) are reached in two cases—first, when the level of game challenge is more than the skills of the players (situation 1: children playing IGA) and second, when the skills outweigh the challenge (situation 2: adults playing advergame). In these situations, optimal flow experience is not developed which leads to less favourable attitude toward the embedded brands.

In Study 2, we introduced familiar and unfamiliar brands in both the gamification formats and demonstrated varying effects of familiarity on brand attitude of children and adults. Specifically, it was revealed that the adults have a less favorable attitude toward the familiar brands as compared to the unfamiliar ones. However, attitude did not vary significantly between these brands in the advergaming context because the adult players had an overall less favorable attitude toward the game. In other words, since they did not like playing the advergame due to its overtly simplistic nature, it was irrelevant for them to distinguish between familiar and unfamiliar brands. Results were, however, different for the children. They exhibited a more favorable attitude toward familiar brands because children, in general, can identify and relate with familiar brands in a better manner than adults. However, they did not discriminate between familiar and unfamiliar brands while playing IGA. Their overall emotional feelings toward this gamification

format were less favorable as they were always over-challenged during the gameplay.

Finally in Study 3, we tapped into the critical behavioral aspect of the adults and children by examining the effects of gamification format on purchase intention. We also explored the psychological process through which such an effect was observed. We found that engagement in the game played a critical role in positively mediating the effects of challenge-skill fit on intention to purchase the advertised brands. While adults showed higher engagement while playing an IGA as compared to an advergame, the reverse was true for the children who were more engaged or immersed in the advergame than the IGA. Subsequently, higher game engagement increased the efficacy of these gamification formats in terms of more favorable intention to buy the brands advertised in these formats.

8 | CONCLUSION

8.1 | Theoretical implications

We contribute significantly to the extant literature on gamification of advertising. First and foremost, it solves the conundrum related to IGA and advergame's conceptualization by explicitly comparing their persuasive effects on the consumers. Though some scholarly attempts were taken in the past to critically differentiate between these two gamification formats (Nelson & Waiguny, 2012; Terlutter & Capella, 2013) or to study the effects of game-induced challenge on persuasion (Waiguny et al., 2012), the authors limited their discussion either at a conceptual level or did not explicitly compare between IGA and advergames by realistically manipulating the level of challenge. Perhaps, that was why many other researchers continued to use these formats in their articles interchangeably. This paper advances previous research that attempted to elucidate the differences between IGA and advergame. It demonstrates that these formats fundamentally vary in terms of the degree of centrality and integration of the brands in the gaming environment, which, in turn, lead to different psychological processes and brand attitudes among the consumers.

Second, the present research is a first attempt to empirically compare the effects of gamification of advertising between children and adult players. Much understanding already exists about how IGA and advergame affect consumers' psychological responses. Nonetheless, most of these studies have considered either children or adult players, but not both of them together in a single study. We fill this gap in the literature and reveal that children and adults process brand messages differently. This largely depends on their cognitive skills and the level of advertising knowledge about marketplace persuasion. An explicit comparison of this kind would motivate future advertising researchers to accurately compare the effects of other game- and brand-related characteristics between consumers of various ages, which might have broader theoretical and managerial implications.

Third, our research add value to the PKM and the affect transfer theory by delivering new understandings from a contemporary, casual, and reward-driven persuasion context such as digital games. We strongly establish our empirical results in the domain that deals with the relationship between consumers' knowledge about marketplace persuasion and their attitude toward brands (e.g., Avramova et al., 2018; Kim & Han, 2020; Verhellen et al., 2014). We also validate the fact that relationships such as these do exist in a casual information processing situation such as observing brand names while playing digital games.

Fourth, the present research adds to the body of knowledge that investigates the interaction between brand familiarity and advertisement repetition across communication channels (e.g., Huang, 2016; Lim et al., 2015). We contribute by examining the moderating role of brand familiarity in the context of gamification research. We also provide a more nuanced assessment of when and how familiar stimuli trigger adverse effects on consumers' attitudes toward the brands. Eventually, we advance previous studies by revealing that brand familiarity depends on the age of consumers and the nature of information processing adopted by them.

Finally, at a more global level, the present paper provides critical insights about the effects of different types of newer advertising formats on consumer-level and organization-level outcomes, for example, intention to purchase the advertised brands. This way, it contributes to the call for more research on this domain, that is, contemporary advertising formats available online to persuade the consumers (De Haan et al., 2016) and sets new direction about the effects of these formats on consumers of different age groups.

8.2 | Practical implications

Our research has salient takeaways for the managers. First, our research outcomes provide marketers the opportunity to trigger curiosity and develop favorable perception toward products aimed to elevate the overall state of wellbeing (physical or psychological) of individuals, specifically children. For example, in countries where obesity is observed from an early age among individuals, marketers can promote the consumption of healthy food and products related to fitness among kids and adolescents by developing suitable advergames. An attempt like this not only increases the usage of such products among children through a game-induced social learning process but also allows them to foster social marketing more efficiently through the use of gamification of advertising.

Second, it helps marketers and game designers regarding whether to choose IGA or advergame depending on the age of the target consumers. Prior studies failed to provide such a precise targeting strategy to the marketers. Since children and adults experience differences in the nature of psychological processing of branded information in these gamification formats, marketers should advertise specific product categories through specific ormats keeping the criteria of age in mind. For example, if a company wants to promote a health drink to children, it should develop an

easy-to-play advergame so that the gameplay ingeniously illustrates the brand values. On the other hand, a product targeted to the adults such as DSLR should be advertised by placing the brand name and logo in the background of a pre-existing (and full-scale) videogame (i.e., IGA). Without this calibration of the gamification formats with the target consumers, companies would not be able to trigger an optimum level of brand attitude. Although many companies are acquainted with the prevalence of these formats, there is no consensus about their suitability to consumers of varying ages. Marketers decide to use IGA over an advergame or vice-versa either based on intuition or depending on the budget available for advertising spending. In other words, they are less likely to ponder the intensity of affective and conative outcomes that each of these gamification formats can evoke. Our research findings enrich the wisdom of the marketers and guide them in choosing a specific gamification format based on the age of the target consumers, which would eventually augment perceptions about the advertised brands.

Third, our research findings suggest that game designers and marketers should work collectively to determine the level of challenge induced in a game based upon whether it is played by children or adult gamers. Although the importance of determining the optimum level of challenge in games has been discussed earlier (Nelson & Waiguny, 2012), no studies existed so far to empirically examine the effects of game challenge on consumers of different age groups who has a varying degree of skills and cognitive abilities. In the present research, we find that an over-challenged advergame reduces playability among children and generates a less positive attitude toward the brands and the game. Therefore, if the marketers want to target children, they should instruct game designers to develop advergames that are easy to play and allow the players to get immersed in a fun-filled environment. To be more precise, since the cognitive abilities among children sharply change with small changes in their age as they grow up, marketers should consult with the game designers and finely adjust the level of challenge to be incorporated within advergames. On the other hand, while targeting the adults, marketers should adopt a different criterion for selecting pre-existing video games for placing their brand elements (i.e., IGA). Since we find that IGA are appreciated more by the adult players who have enhanced cognitive skills, the advertiser should select a game so that it can throw a sufficient amount of challenge to the players failing which attitude toward the advertised brand would suffer.

Fourth, the use of purchase intention as mentioned in the above point has high relevance for academics and the managers because it reflects consumers' predicted behavior and, therefore, is directly connected with the economic payoffs of an advertising campaign driven through gamification. Also, we look into the underlying psychological mechanism of this effect by investigating the mediating influence of consumers' engagement in the game.

Finally, we provide decisive inferences for those marketers who endorse familiar and unfamiliar brands. Brands which are less known in the marketplace are found to battle to improve in terms of awareness and likeability. Marketers are also worried about their promotional endeavors while competing with popular brands. We show that while targeting adult consumers, unfamiliar brands would be advantageous when advertised through an IGA. In case marketers are uncertain to use IGA as a media, we demonstrate that such hesitations should not be entertained because this media would help unfamiliar brands gain a leading edge over their familiar counterparts. Conversely, those who manage popular brands are required to be contented while targeting adult consumers because these consumers are less willing to extensively process brand messages and improve their attitude. Instead, familiar brands should be promoted more through nontraditional channels such as advergames and leverage from the well-established role of children as co-decision makers in family purchases.

8.3 | Limitations and scope for future research

Our research has the following limitations. We argued that children have significantly lower levels of cognitive skills and persuasion knowledge when compared to adults, which explains their differences in brand attitude. However, we did not consider one crucial variable such as video game-playing experience and treated it as a covariate in the present research. It may be the case that children showcase a learning curve while playing video games. In other words, their ability to effectively and efficiently handle a challenging game may increase with experience. The second limitation is related to the genre of the game selected for the present research. We examined the hypothesized effects in an action and adventure gaming category. Different types of genres exist, such as MMORPG,[1] simulation, strategy, graphics adventure, car racing, board games, and so forth. with an idiosyncratic mix of *fun* and *challenge*. They also vary in terms of playability and overall gaming experience. Finally, we considered children aged 7–9 years. These subjects had limited cognitive skills as compared to adults, which reflected in their affective outcomes. However, there is a rich body of knowledge that suggests that the cognitive skills and ability to handle complex situations rapidly improve as children grow (e.g., Bjorklund & Pellegrini, 2000). It may be the case that adolescents, as compared to children, would demonstrate better persuasion knowledge and enhanced capability to manage cognitive load and perform better in video games.

To address the first limitation, more research should be done which examines the moderating effect of game-playing experience on the relationship between gamification format and brand attitude in the case of children. The second limitation can be suitably addressed and the generalizability of the research findings can be substantially increased if future researchers examine the relationships in other video game genres mentioned above. To deal with the third limitation, we recommend that future researchers investigate the comparative effects of gamification formats with three categories

[1]MMORPG stands for Massively Multiplayer Online Role-playing Game in which players take the role of a character and interact or play with a large number of other players on the Internet. Examples include games like Black Desert Online, Guild Wars 2, and World of Warcraft, to name a few.

of consumers—adults, adolescents, and children. This would enable them to perform a granular-level assessment by finely attuning the degree of game challenge and centrality of the brand within the game.

Other than these agendas, there exists further scope for future research. Advertising researchers may extend our research framework and explore how other important variables such as the level of congruency between product categories and brands, product placement proximity, and flow experience interact with gamification format to create differential effects on the consumers. Also, we posit that further research is necessary to investigate the comparative effects of IGA and advergame on critical psychological outcomes of consumers other than brand attitude such as attitude toward the game, and memory (i.e., brand recognition and brand recall). This way, researchers would be able to cover the entire spectrum of consumer reactions, namely, cognitive, affective, and conative, which would eventually increase the robustness of our present research framework.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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APPENDIX

Measurement Items used in Study 1 and Study 2

Perceived realism (realism check)

- How realistic is the presented game with respect to the real-life game play (1 = "highly realistic," 7 = "not at all realistic")?

Game-playing experience (covariate)

- playing action and adventure games is one of the things I do every day

Perceived easiness to play the game (covariate)

- I find the it easy to play the game (1 = "totally disagree" to 7 = "totally agree")

Brand Image (covariate)

- The image which carries about the brand featured in the advergame I played was (1 = "bad image" to 7 = "excellent image").

Product category involvement (covariate)

- I am highly involved with the product used in the same
- I am very interested in the product that was shown in the game

Attitude towards the brand (outcome variable)

- I feel that the brand featured in the advergame I played was: ("useful: useless," "worthless: valuable," "not for me: for me", etc.)

Brand Familiarity

- How familiar you are with the brand before seeing the brand in the advergame/in-game advertising (1 = "not at all familiar" to 7 = "highly familiar")

Manipulation Check on Gamification Format

- The brand was a central theme of the game that I played.
- The brand and game were meant for each other.
- The game had no direct connect with the brand embedded in it (reverse coded).