

Moving Beyond the Content: The Role of Contextual Cues in the Effectiveness of Gamification of Advertising

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ABSTRACT

Extant studies in the domain of gamification of advertising examine the effects of content-driven factors (i.e., game and brand characteristics) of online games on consumer behavior. However, they mostly overlook the role of important contextual cues such as access platform (online channel to access these games) and gaming device. Effects of these cues on consumer behavior are examined in three experimental studies. Study 1 examines a 2 (access platform) × 2 (gaming device: mobile phone vs. PC) effect on brand memory. Study 2 investigates the role of elaboration likelihood (high vs. low) in improving brand memory in a poor scenario (brand website + mobile phone). Study 3 examines the interaction effects of these contextual factors on brand attitude mediated by consumers' flow experience. These studies find that the interaction between access platform and gaming devices differentially affects brand attitude and memory of the consumers. Moreover, consumers' engagement and flow experience are found to mediate the effects of these contextual factors on brand memory and brand attitude respectively.

Keywords: Access platform, brand memory, brand attitude, gaming device, in-game advertising

Introduction

As the marketplace becomes heavily cluttered due to the presence of a plethora of brands, it becomes increasingly difficult for marketers to engage and entice consumers through traditional advertising tools such as TV and print advertisements. Simultaneously, the proliferation of the Internet coupled with advances in web-based technology have made it easier for marketers to reach to consumers through newer types of persuasive formats (Cicchirillo, 2019; Dwivedi et al., 2020; Roettl, Waiguny, & Terlutter, 2016). One such format that has gained momentum in recent times is embedding brand stimuli in online games, also known as in-game advertising (IGA) or advergaming (Vashisht, Royne, & Sreejesh, 2019). These stimuli include billboards, banners, or posters in the gaming environment, and allow the games to showcase persuasive messages in a subtle manner to the consumers (Terlutter & Capella, 2013). Due to this subtle nature of persuasion, marketers spent 4.91 billion USD were spent in 2016 on gamification of advertising and this expenditure is projected to grow to 11.94 billion USD by the end of 2021 (Gough, 2018).

The augmented attention of marketers toward gamification of advertising has inspired researchers to examine the persuasive efficacy of this new entertainment-driven promotional tool. A large number of studies exist to date that aptly document effects of various game, brand, and individual characteristics on consumers' cognitive, affective, and conative outcomes (Terlutter & Capella, 2013; Vashisht, Royne, & Sreejesh, 2019; Yang, Asaad, & Dwivedi, 2017). While the research audience including the marketers are tremendously benefitted from the extant body of knowledge, most, if not all, of the earlier scholars have directed their efforts to understand how the game content could be ingeniously exploited to produce desirable outcomes. In this research, we go beyond the perspective of content-driven effectiveness of games and examine the effects of salient *contextual* cues that are extremely critical while playing IGAs. Interestingly, while the role of context is under-researched in the domain of

advertising through online games, it has strong practical implications for advertisers (Calder, Malthouse, & Schaedel, 2009; Kwon et al., 2019; Malthouse, Calder, & Tamhane, 2007). While contextual cues can affect several facets of consumer behavior, in this research, we primarily focus on their effects on game players' memory and brand attitude (Ghosh et al., 2021; Yang, Asaad, & Dwivedi, 2017).

Traditionally, most marketers have followed the practice of placing these branded games in their own (brand) websites so that website visitors could play them for free. For example, a game called Bike Unchained was launched in 2017 on the website of the popular energy drink brand Redbull¹ which asked the players to drive their way through trails in various locations. However, with the growth of social media channels (Chatterjee & Kar, 2020; Dwivedi et al., 2015; Harrigan et al., 2021; Ismagilova et al., 2020; Kapoor et al., 2018; Misirlis & Vlachopoulou, 2018; Shareef et al., 2018; 2019), the availability of these games on platforms such as Facebook are also on the rise (Terlutter & Capella, 2013). For instance, a US-based company, Cascadian Farm, that sells organic farming products placed its brand in a highly popular game called Farmville 2 available on Facebook and allowed the players to plant *branded blueberries* in the gaming environment. In this research, we argue that the access platform, i.e., the online source from which IGAs are accessed and played, contributes as an important contextual cue that might influence persuasive effectiveness of these games. This line of argument, as we explain in detail later, is based on the conceptual fabric drawn from the uses and gratification (U&G) theory (Ruggiero, 2000) which suggests that brand websites and social media offer different types of gratifications to attract and hold online users (Buzeta, De Pelsmacker, & Dens, 2020; Whiting & Williams, 2013). We advance the U&G theory in the game playing scenario to posit that the degree of congruency varies between the types of gratifications derived from playing a game and those derived from visiting either a brand

¹ <https://www.redbull.com/int-en/play-bike-unchained-now-computer-game-gee-atherton-downhill-freeride>

website or a social media channel. In the present research, we investigate the effects of these variations in congruency on consumers' memory and attitude toward the embedded brands.

Once consumers gain access to the games from a specific online platform, they play them in devices such as personal computer (PC) and mobile phone. These gaming devices significantly vary in screen size and audio-visual quality, which may contribute to differences in perception of media richness and information vividness (Maity, Das, & Kumar, 2018). According to the tenets of the media richness theory (Daft & Lengel, 1986), the depth of information processing varies substantially across rich and lean media. Therefore, it is likely that consumers' processing of game- and brand-related information would substantially differ across these gaming devices, which may further lead to variations in their memory and attitude toward the advertised brands (Li, Daugherty, & Biocca, 2002; McColl & Michelotti, 2019). However, to the best of our knowledge, no research in the domain of gamification of advertising exists to date that captures and empirically explains these variations. Therefore, we consider gaming device as another important contextual cue and investigate how it interacts with the access platform to influence consumers. In summary, we depart from exploring the content-specific effects of IGA and initiate research that emphasises the role of salient contextual attributes such as access platform and gaming device in shaping consumer behavior, specifically, memory and brand attitude.

We make several contributions to literature and practice. First, we contribute to past studies on gamification of advertising that have mostly examined the effects of game and brand characteristics on consumer behavior and suggest manipulation of gaming content to achieve optimal marketing outcomes (e.g., Ghosh, 2016; Sreejesh & Anusree, 2017; Vashisht & Royne, 2016; Waiguny, Nelson, & Marko, 2013). We contribute by demonstrating that it is not only content that matters, but the context in which games are played also plays a substantial role in increasing the persuasive effectiveness of IGAs. Second, we advance past research that draws

on the U&G theory to demonstrate the role of media context in which advertisements are placed. We not only show the pertinence of the U&G theory in explaining advertising efficacy in the online environment, but also reveal that it can be leveraged to explain persuasive effects of innovative formats such as IGAs. Third, we contribute to the limited number of studies that examine the relationship between device modality and persuasion (e.g., McNiven, Krugman, & Tinkham, 2012; Maity & Dass, 2014). The present research demonstrates that devices with varying screen size differentially affects consumers' cognition and information processing which, in turn, is manifested in their responses to advertising stimuli. This way, we also contribute significantly to the media richness theory by departing from the frequently studied modes of communication (e.g., print, TV, and social media ads) and bring fresh research insights from an entertainment-driven persuasion context such as IGA. Finally, our research presents salient implications for advertisers and game designers. Advertising budget is often limited and, hence, it becomes necessary for advertisers to compare the efficacy of different promotional techniques. We help them make an informed decision regarding whether to place more emphasis on PC-based or mobile-based games. We also help them to identify the appropriate online platform where games could be made available that would maximize consumers' memory and attitude toward the advertised brands.

Next, we briefly discuss the literature on gamification of advertising. This is followed by a discussion on the U&G theory and the media richness theory that help develop and test our first set of hypotheses related to the interaction effects of access platform and gaming device on consumers' brand memory (Study 1). Thereafter, we hypothesize the effects of consumers' likelihood of elaboration about the IGA on brand memory and show how marketers can increase the efficacy of less effective contextual conditions, e.g., a condition in which games are accessed from brand websites and played in mobile phones (Study 2). Finally, we hypothesize and demonstrate the interaction effects of the two contextual attributes on

consumers' brand attitude mediated by their flow experience (Study 3). We conclude the paper with salient academic and managerial implications of the present research.

Literature Review

Gamification of Advertising

Increased fragmentation and advertising clutter in traditional media have driven marketers to embrace new methods of persuading their target audience, one of them being gamification of advertising (Mishra & Malhotra, 2020; Nelson & Waiguny, 2012; Wunderlich et al. 2020). Commonly referred as IGA and advergames, this advertising format provides marketers with several distinct advantages over traditional formats. First, these games trigger lower levels of persuasion knowledge and scepticism among the consumers (Panic, Cauberghe, & De Pelsmacker, 2013). In TV commercials, media content and brand messages are shown sequentially, while in IGA and advergames the promotional materials are ingeniously interwoven into the gaming content; therefore, consumers are less likely to apply their persuasion knowledge and cognitive defence mechanism (Panic et al., 2013). This makes them less susceptible to persuasive appeals, and consumers often end up with a desire to purchase the advertised brands (Panic et a., 2013; Van Reijmersdal, Rozendaal, & Buijzen, 2012). Second, IGA and advergames foster longer attention span of the consumers in a reward-driven environment, which positively affects their cognitive and affective reactions (Vanwesenbeeck, Walrave, & Ponnet, 2017).

In the past, academic endeavours have resulted in exploring several important attributes pertaining to games and embedded brands such as game personality (Lee & Cho, 2017), speed of the game (Vashisht & Royne, 2016), game outcome (Ghosh, 2016), game-brand fit (Gross, 2010), brand familiarity (Waiguny, Nelson, & Marko, 2013), product types (Yang & Wang, 2008), and a host of other variables. While each of these studies is meritorious in its own right,

they mostly focus on game design and brand selection rather than exploring the critical role of gaming context. Interestingly, few scholars have also examined the effects of advergames which are available on social media (Waiguny, Nelson, & Terlutter, 2014) and played in mobile phones (Catalan, Martínez, & Wallace, 2019). However, these studies, too, concentrate on the gaming content and do not advance our understanding about whether and how the context in which games are played shape consumer-level outcomes. One notable exception is the research conducted by Nelson, Yaros, and Keum (2006) who examined the role of media context in brand recall and persuasion. However, the researchers conceptualized media context based on the nature of control while playing a game (i.e., actively playing *versus* passively watching) and not in terms of the source of accessing the game and the device used for playing it. In the present research, we add value to this emerging body of knowledge by examining the effects of salient contextual cues such as access platform and gaming device on consumers' memory and attitude toward the advertised brands. These effects are examined in an IGA, rather than an advergame, as it allows more than one advertiser to simultaneously embed their brand names in the gaming environment and is, therefore, more relevant to measure cognitive and affective outcome such as memory and brand attitude respectively.

Uses and Gratifications Theory

The uses and gratifications (U&G) theory is a framework that is very frequently employed by researchers to study the motivations for use of different kinds of media (Ruggiero, 2000). The theory provides a functionalist explanation of individuals' media usage behavior and posits that individuals are actively involved with a media to gratify or satiate a set of specific social and psychological needs (Sundar & Limperos, 2013; Ruggiero, 2000). More importantly, since media users are mostly goal-directed and remain aware of their intrinsic needs, they select a particular media in such a way which is appropriate to those needs (Rubin, 2002). Traditionally, researchers have used the theory to understand a large range of

gratifications sought from mediated environments such as newspaper (Cuillier & Piotrowski, 2009), radio (Lin, 2006), TV (Panda and Pandey, 2017), VCR (Cohen, Levy, & Golden, 1988), pager (Leung & Wei, 1998), and, lately, Internet-based platforms (Buzeta, De Pelsmacker, & Dens, 2020; Miltgen, Cases, & Russel, 2019). The U&G literature is vast; therefore, for the purpose of hypothesizing the effects of online access platform on consumers' game playing behaviour, we confine our discussion to the gratifications pursued from Internet-based platforms, specifically social media channels and brand websites.

McQuail (1983) identified four distinct motivations to use mass media, namely, *Entertainment, Personal Identity, Integration and Social Interaction*, and *Information*. Since social media, as compared to mass media, is inherently more interactive, two additional motivational dimensions were proposed by Muntinga, Moorman, and Smit (2011) such as *Remuneration* and *Empowerment* (2011). Following this exploration, few researchers have operationalized these motives in their studies (e.g., Kitirattakarn, Araujo, & Neijen, 2020; Tsai & Men, 2013). Buzeta et al (2020) have recently conceptualized these motivational dimensions which we present in **Table 1** below:

[Insert Table 1 here]

There are different types of social media channels such as social media submission sites (e.g., Pinterest), forums and discussion sites (e.g., Google Groups), media sharing sites (e.g., Vimeo, YouTube), review and rating sites (e.g., Zomato), and social networking sites (e.g., Facebook). In some cases, the delineation between these channels is not precise and a social media site may fall under multiple categories (e.g., Instagram may be considered as a social networking as well as a media sharing site). A study conducted by Voorveld et al (2018) reveals that Facebook, a social networking site which largely attracts marketers' attention to embed IGAs and advergames, triggers gratifications such as entertainment, identity, and social

interaction more than gratifications such as topicality and practical use (i.e., information), remuneration, and empowerment. This distinction is extremely critical for our present research and is discussed in details during developing the research hypotheses.

As compared to this rich body of knowledge that deals with the exploration of individuals' motives to use different kinds of social media channels, less research attention has been devoted to understand consumers' motivational needs to use brand websites. A scrutiny of the existing studies reveal that brand websites provide a fundamentally different set of gratifications as compared to social media (Chen, Ku, & Yeh, 2019; Eighmey & McCord, 1998; Zhou & Jia, 2018). For instance, Maddox (1998) and Ducoffe (1996) suggest that informative (brand) websites provide heightened informational motivation to the consumers that explain their website usage. Similarly, consumers are often found to visit retailers' websites to experience high levels of system quality, information quality, and service quality (Zhou & Jia, 2018). Further, an investigation of the motivational factors behind the usage of e-commerce websites (e.g., online coffee store) reveal motives such as information quality, security, navigability, reputation, visual appeal, and fluency (Chen & Demirci, 2019). A summarized view of consumers' responses to brand websites is presented by Voorveld, Neijens, and Smit (2009) which reveals the presence of website characteristics such as interactivity, design, features, modality, usability, and fit that determine consumers' website usage behavior. In summary, while social media gratifications, especially those derived from social networking sites, resonate around core aspects such as social information, identity, social interaction and connectedness, and entertainment, usage of brand websites are predominantly driven by utilitarian motives such as the product-specific information, navigation and search, and brand awareness.

Media Richness Theory

Media richness is defined as “the representational richness of a mediated environment defined by its formal features, that is, the way in which the environment presents information to the senses” (Steuer, 1992, p. 75). The formal features or characteristics of a communication media that contribute to its richness are (a) sensory breadth: the number of sensory channels the media utilises, and (b) sensory depth: the intensity of utilisation of the sensory channels (Steuer, 1992). If a particular media is richer than another, the information presented is perceived to be more vivid (Coupey & Sandgathe, 2000; Jiang & Benbasat, 2007). It also develops a higher quality of the visual image and evokes emotions of higher intensity among the users (Coupey & Sandgathe, 2000). More interestingly, media richness is affected by the screen size of the devices through which information is presented to the viewers (Lombard & Ditton, 1997; Maity & Dass, 2014; Maity et al., 2018). Prior research found that when advertising stimuli consisting of text and images were presented through a device with a large screen (e.g., PC), the richness of the stimuli was perceived to be higher than when the same stimuli were presented through a device with a small screen (e.g., tablet, mobile) (Maity et al., 2018). This happens because large screens, as compared to small ones, provide benefits such as display novelty (i.e., a perception that large objects are more novel) and looming (i.e., large objects dominate the viewers’ visual field and tend to “loom” over them), which generates higher levels of sensory arousal, vividness, and telepresence (Lombard & Ditton, 1997; Reeves et al., 1999).

From an information processing perspective, it is evident that information is processed differently in rich *versus* lean media (Daft & Lengel, 1986; Kim & Sundar, 2016; Reeves et al., 1999). The basic premise is that rich media has more sensory breadth and depth than lean media, which increases the number of human perceptual systems triggered to process information (Li, Daugherty, & Biocca, 2002). Therefore, when presented through rich media, the information undergoes a more considerable amount of cognitive processing that makes it

more effective (Li et al., 2002). In the present research, we extend these findings to examine whether variations in the gaming device interact with the type of access platform and affect game players' memory of the brands embedded in the IGA.

Study 1: Effects of access platform and gaming device on brand memory

When it comes to playing IGAs, consumers are driven by motives such as entertainment (Waiguny, Nelson, & Terlutter, 2012), release of boredom and improving quality of life (Tran & Strutton, 2013), escaping from reality (Hernandez, 2008), playfulness (Zhao & Renard, 2018), and social interaction (Tuten & Ashley, 2016). Likewise, the gratifications derived from Facebook, a platform that is frequently used by marketers to offer IGAs and advergames to online users², are also very similar in nature such as entertainment, self-identity, connectedness, social interaction, passing time, and escapism from daily stress (Brailovskaia, Velten, & Margaf, 2019; Kim & Kim, 2019; Nadkarni & Hofmann, 2012; Voorveld et al., 2018). Therefore, we coherently argue that there is congruency in the U&Gs between playing IGAs and accessing social networking site such as Facebook. Based upon existing research that integrates U&G theory and customer engagement (e.g., Buzeta et al., 2020; Demmers, Weltevreden, & van Dolen, 2020; Huang, Bao, & Li, 2017; Muntinga et al., 2011), we further claim that this congruency or similarity in consumers' gratifications would lead to higher levels of involvement while playing an IGA that is accessed from Facebook. In such a scenario, according to the well-known level of processing framework (Craik & Lockhart, 1972; Morris, Bransford, and Frank, 1977), higher involvement levels of game players in the mediated (i.e., gaming) environment would result in deeper processing of the environmental stimuli including embedded brand elements. This would eventually result in better memory of the advertised

² More than 800 million people have been found to use Facebook Gaming every month out of which 90 million users are extremely active members of Facebook Gaming Groups. The free-to-play gaming market, including IGA and advergimes, is estimated to reach \$13.2 billion in USA by the end of 2020 (Influencer Marketing Hub, 2020).

brands (Craik & Lockhart, 1972). On the other hand, since brand websites provide a fundamentally different set of U&Gs mentioned earlier, we argue that an incongruity in gratifications exists between playing IGAs and accessing brand websites. This would eventually result in lower involvement levels among the consumers while playing the IGA accessed from a brand website. Therefore, despite being present *within* the gaming environment, consumers would engage in lower levels of processing of game- and brand-related stimuli, that would reflect through lower memory of the advertised brands.

After accessing an IGA from either a social networking site or a brand website, an individual may play it on her mobile phone or PC. Since these gaming devices significantly vary in media richness, they play an additional role in determining consumers' memory of the advertised brands. Therefore, it is critical to investigate whether access platform and gaming device *interact* to create varying levels of brand memory. Prior research suggests that there are differences in information processing due to variations in screen size and media richness (Daft & Lengel, 1986; Kim & Sundar, 2016; Li et al., 2002). We argue that PCs (specifically, desktops) as compared to mobile phones, would be perceived higher in media richness since they have significantly larger screens. Also, since PCs possess dedicated input/playing devices such as mouse and joystick, multisensory stimulation is possible among the players that would make the brand-related messages more effective (Li et al., 2002). In summary, a higher level of media richness and activation of multiple perceptual systems would allow the players to spend more cognitive resources and deeply process game- and brand-related information. This would eventually affect players' memory of the advertised brands.

In summary, we hypothesize that consumers' brand memory would be strongest when they access the IGA from a congruent access platform such as social networking site (e.g., Facebook) and play it in a rich media (e.g., PC). Conversely, their brand memory would be weakest when the IGA is accessed from an incongruent platform such as brand website and

played on a lean media (e.g., mobile phone). While comparing the remaining two conditions, i.e., the IGA accessed from Facebook and played in a mobile phone *versus* the IGA accessed from brand website and played in a PC, we argue that the memory effects would be stronger in the former condition than the latter. The reason behind this postulation is fairly straightforward. Since individuals' visit to social media channels are mostly related to satisfying gratifications such as social interaction, entertainment, fun, release of boredom, and enjoyment (Buzeta et al., 2020; Voorveld et al., 2018), we argue that they would remain predisposed with these hedonic motives before playing the game in a mobile phone. Eventually, these game-congruent motives would allow individuals to remain more engaged in the gaming environment, dominate over and above nature of the gaming device, and lead to stronger brand memory. On the other hand, irrespective of playing the IGA in a rich media such as PC, individuals remain predisposed with utility- and information-related motives (Chen, Ku, & Yeh, 2019; Eighmey & McCord, 1998; Zhou & Jia, 2018) which are incongruent with those related to playing video games. These less engaged individuals would, in turn, exhibit weaker brand memory. In light of these discussions, we hypothesize the following:

H1: Differences in brand memory exist in a PC-based (vs mobile-based) IGA accessed from social media (vs brand website) [$\text{Memory}_{\text{social media, PC}} > \text{Memory}_{\text{social media, mobile phone}} > \text{Memory}_{\text{brand website, PC}} > \text{Memory}_{\text{brand website, mobile phone}}$].

See **Figure 1** for hypothesized framework

[Insert Figure 1 about here]

Methods

Pre-test and Stimuli

As part of the stimuli development process, we first conducted two focus group discussions ($N_{\text{Group 1}} = 12$, $N_{\text{Group 2}} = 10$) to identify the product category and a fictitious brand

name respectively. Breakfast cereal product category was chosen by the first group while the second group decided the name “*Papon Cereals*” for the fictitious focal brand. Since this study was aimed at measuring consumers’ brand memory, it was important to include filler brands other than the focal brand in the IGA. This has remained a standard practice among studies in the domain of gamification of advertising, specifically those which examine memory effects of IGAs (e.g., Ghosh, 2016; Yang et al., 2006). For this purpose, two additional focus group discussions ($N_{\text{Group 3}} = 11$, $N_{\text{Group 4}} = 9$) were conducted to choose the product categories and brand names of the filler brands. In total, nine product categories and one fictitious brand name for each category was decided by the focus groups. Thereafter, a pre-test was conducted among regular game players ($N = 30$) to examine the suitability of these brand names in the IGA (“I consider the brand name is an ideal name to present in the IGA”, 1 = ‘strongly disagree’ to 7 = ‘strongly agree’). Based on the pre-test results, we selected six brand names with higher suitability scores.

Followed by this, a professional video game developing agency was approached who prepared an IGA from the car-racing genre that required approximately six minutes of playing time. All the brands (total seven: one focal, six filler) appeared as billboards above the racing track of the car-racing game. Once the IGA was developed, we approached an advertising agency to develop a brand website and a social media (Facebook) page on the focal brand (i.e., Papon Cereal). Since the brand website and social media page were required to replicate a real-life situation, they were developed in such a manner that the user could click the content links and read complete brand-related information. The brand-related information and other media content (e.g., colour, background theme, etc.) were kept similar in these two access platforms. Most importantly, these access platforms also included the link to play the IGA³. Finally, we

³ The link was embedded on the bottom-right corner of the home page on the brand website and on the right-hand side of the social media page.

examined the suitability of the complete stimuli (i.e., access platforms with embedded IGA links) using regular game players ($N = 30$). In the pre-test, we asked the subjects to rate the usefulness of the brand website and social media page (e.g., “I consider the brand website/social media page is useful to get the required information”, 1 = ‘totally disagree’ to 7 = ‘totally agree’). The pre-test results supported that most of the subjects found the platforms highly useful ($M = 5.88$, $S.D. = 1.21$). Thus, we confirmed the suitability of the stimuli for the final experiment.

Design and Participants

We applied a 2 (access platform: social media vs. brand website) \times 2 (gaming device: PC vs. mobile phone) between-subjects experimental design with brand memory (recall and recognition) as the dependent variable. A total of 215 post-graduate students from a large Indian university participated in return of extra course credit. The average age of these subjects was 23.84 years ($S.D. = 1.85$ years), and the majority of them were males (63%). The selection of college students as subjects has been supported in earlier studies on video game research (Sung and De Gregorio 2008). These students were allocated to the four experimental condition ($N_{[\text{social media, PC}]} = 55$, $N_{[\text{brand website, PC}]} = 54$, $N_{[\text{social media, mobile}]} = 53$, $N_{[\text{brand website, mobile}]} = 53$).

Procedure

Approximately, a month before the experiment, a notice was made available on the university notice board which asked interested post-graduate students to participate in a ‘brand promotional study’. From those students who reported their willingness, we randomly invited 230 students among which 208 subjects participated in the experiment. On the days of the experiment, students came in batches of 8 to 10. Once the subjects arrived, they were randomly allocated into one of the two different conditions (social media vs. brand website). In order to avoid the potential demand artefacts, the subjects were introduced a scenario where it was

informed that they were part of the beta testing of a social media page (or brand website) of a cereal manufacturer. Further, subjects in the brand website condition were directed to click the given URL, and in the social media condition, the subjects were directed to the social media page of the brand through their personal accounts. In both cases, the subjects first read the content on the access platform for approximately 8 minutes following which they clicked the IGA link and played the game. After 10 minutes of gameplay, they were asked to close their devices and complete the survey. In the end, they were thanked and debriefed.

Measurement

As part of measuring the manipulation of gaming device and access platform, we asked the participants two different questions. First, we asked them to indicate the device through which they played the game. Then we asked them to remember the source from where they accessed the game.

Following prior literature (e.g., Lee & Faber, 2007; Peters & Leshner, 2013; Sreejesh et al., 2018), consumers' brand memory was measured through recall and recognition tasks. As part of brand recall assessment, we asked the subjects to recall and list the brand names which they noticed during their gameplay. Since there were seven brands, recall scores ranged from 0 to 7 (0 = 'no brands recalled' to 7 = 'all brands recalled'). We did not count or correct false recalls (a case where a subject recalls a brand which was not included in the game). Following this, brand recognition was measured by asking the subjects to identify target brands from a list of 14 brand names (containing seven additional foil brands). Recognition performance for each subject was scored accordingly (0 = 'no brands recognized' to 7 = 'all brands recognized').

In addition to this, considering the potential confounding effects of players' experience in playing the IGA with a specific genre (e.g., car racing) and their easiness to play the game,

we also measured and controlled these two extraneous variables in the experiment. An item adapted from Perse (1986) (e.g., “playing racing games is one of the things I do every day”) measured their experience of playing a specific game genre (1 = ‘totally disagree’ to 7 = ‘totally agree’). Another item (“I find the IGA which I played was easy to play”, 1 = ‘totally disagree’ to 7 = ‘totally agree’) captured their easiness to play the IGA which was adapted from Davis (1985). Besides, we also asked their involvement with the access platform (“I usually use brand website/social media for information/socialisation”, 1 = ‘totally disagree’ to 7 = ‘totally agree’) and was also controlled. Finally, demographic information of the subjects was also measured using the questionnaire.

Analysis and Results

We first tested the manipulation of gaming device and access platform. The results revealed that in the case of gaming device, all the subjects exposed to both the conditions reported their respective devices correctly and no single deviation was reported (100% in PC and mobile phone). Similarly, their answers concerning access platforms also showed consistent results (100% in social media and brand website). Thus, the study confirmed the success of the manipulation of both variables. Further, the study analyzed the assumption of the data concerning the normality and homogeneity of the variables. It also confirms that there was no deviation from normality and homogeneity of variance, and hence, the data were suitable for analyses.

To test the study hypotheses, we applied a 2 (access platform: social media vs. brand website) \times 2 (gaming device: PC vs. mobile phone) between-subjects multivariate analysis of covariance (MANCOVA) with recall and recognition as the dependent variables and players’ game playing experience, easiness to play the game, and access platform involvement as the covariates. However, the results only supported significance of easiness (Wilks’ $\Lambda = .98$, $F_{(2,$

$_{207} = 2.47, p = .08)$ and access platform involvement (Wilks' $\Lambda = .97, F_{(2, 207)} = 2.90, p = .05)$ as the significant covariates. Hence, in the subsequent analyses we kept these two variables as the relevant covariates to manage model complexity.

As part of testing H1, we examined the two-way interaction between gaming device and access platform on brand memory measured through recall and recognition. The results revealed a significant two-way interaction effect (Wilks' $\Lambda = .92, F_{(2, 207)} = 8.86, p < 0.01)$, which indicated that the causal role of access platform on brand memory was conditioned by gaming device. More specifically, this two-way interaction also highlighted the importance of probing the direction of interaction, that is, how differences in access platform created difference in brand memory, when it was conditioned by gaming device. To examine the same, the study conducted a series of follow-up contrast tests. First, we analyzed differences in brand memory between social media and brand websites for subjects who played the IGA in PC. The former group reported better brand memory than the latter group ($[M_{\text{recall: social media, PC}} = 5.13, M_{\text{recognition: social media, PC}} = 5.30] > [M_{\text{recall: brand website, PC}} = 3.89, M_{\text{recognition: brand website, PC}} = 3.79]$, Wilks' $\Lambda = .43, F_{(2, 207)} = 137.70, p < 0.01)$. Followed by this, the second contrast test compared social media (vs. website) when the subjects played the IGA in mobile phone. Better brand memory was reported in the case of social media than brand website ($[M_{\text{recall: social media, mobile phone}} = 4.33, M_{\text{recognition: social media, mobile phone}} = 4.44] > [M_{\text{recall: brand website, mobile phone}} = 3.45, M_{\text{recognition: brand website, mobile phone}} = 3.53]$, Wilks' $\Lambda = .653, F_{(2, 207)} = 55.05, p < 0.01)$. These findings established that social media, as an access platform, was superior in developing brand memory in comparison to brand website across gaming devices. Furthermore, to examine the role of gaming device in developing brand memory, two other contrast tests were undertaken, where we compared PC (vs. mobile phone) in social media and brand website separately. The first contrast test reported that when the subjects played the IGA in PC (vs. mobile phone) with social media as an access platform, PC (vs. mobile phone) reported higher brand memory ($[M_{\text{recall: social media, PC}} = 5.13, M_{\text{recognition: social media, PC}} = 5.30] > [M_{\text{recall: social media, mobile phone}} = 4.33, M_{\text{recognition: social media, mobile phone}} = 4.44]$, Wilks' $\Lambda = .653, F_{(2, 207)} = 55.05, p < 0.01)$.

recall: social media, PC = 5.13, $M_{\text{recognition: social media, PC}} = 5.30$] > [$M_{\text{recall: social media, mobile phone}} = 4.33$, $M_{\text{recognition: social media, mobile phone}} = 4.44$], Wilks' $\Lambda = .677$, $F_{(2, 207)} = 49.35$, $p < 0.01$). Followed by this, the second contrast test revealed that when subjects played the game using brand website as an access platform, PC (vs. mobile phone) developed better brand memory ($[M_{\text{recall: brand website, PC}} = 3.89$, $M_{\text{recognition: brand website, PC}} = 3.79]$ > [$M_{\text{recall: brand website, mobile phone}} = 3.45$, $M_{\text{recognition: brand website, mobile phone}} = 3.53$], Wilks' $\Lambda = .922$, $F_{(2, 207)} = 8.797$, $p < .001$). To confirm the above multivariate results, we also performed a series of univariate tests (see **Table 2**). This led to infer that brand memory scores were similar to the postulations in H1, i.e., social media + PC > social media + mobile phone > brand website + PC > brand website + mobile phone. Based upon these extensive findings, we supported H1 (see **Figure 2** for the mean values of the four experimental conditions).

[Insert Table 2 here]

[Insert Figure 2 here]

Study 2: Role of Elaboration Likelihood in Improving Brand Memory

The previous study revealed that consumers demonstrate weakest memory performance when they access IGAs from brand websites and play them in their mobile phones. While such an outcome clearly highlights the pitfalls of placing mobile-compatible IGAs in brand websites, many product manufacturers and service providers may still be ignorant and continue this practice. Also, there is a possibility that they do not perceive it feasible or relevant to develop IGAs that could be accessed only from social media brand pages and played in PCs. In fact, websites still remain one of the main channels for marketers to connect with consumers and cater important product-related information despite the recent upsurge in social media usage (Voorveld, Neijens, & Smit, 2009; King et al., 2016). Therefore, it becomes important to investigate how marketers can increase consumers' memory about the brands embedded in

IGAs despite the challenges posed by this specific condition, i.e., brand website and mobile phone. This is the main objective of Study 2.

Here, we use the elaboration likelihood model (ELM) (Petty & Cacioppo, 1986) to posit that consumers tend to apply more cognitive effort and better remember the IGA-embedded brands in a high, as compared to a low, elaboration context. From a plethora of available theoretical frameworks, we specifically apply the ELM because of its overwhelming usage in advertising literature to understand the persuasive efficacy of advertisements of diverse nature (e.g., Kerr et al., 2015; Lee & Koo, 2016; Mousavizadeh et al., 2020). According to the ELM there are two routes to persuasion – the central route and the peripheral route (Petty & Cacioppo, 1986). Activation of the central route occurs when an individual does issue-relevant thinking (i.e., close and careful scrutiny of the information and the arguments presented in the message) which, in turn, results in high levels of cognitive elaboration. On the other hand, the peripheral route is activated when little cognitive effort is applied to process a persuasive message and the message receiver applies simple decision rules (i.e., some kind of heuristic principles), thereby triggering low levels of cognitive elaboration. In such a scenario, individuals focus more on the peripheral cues such as attractiveness and source credibility instead of the central cues such as the strength of the persuasive argument presented in the advertising message. Most importantly, the amount of elaboration an individual does is a function of his or her orientation, encoding, and decoding principles of the persuasive message, which completely depends upon two broad factors, namely, elaboration motivation and elaboration ability. While elaboration motivation is influenced by personal relevance of the topic to the individuals and their need for cognition, personal ability depends upon the level of distraction present in the persuasive message and the amount of relevant knowledge possessed by an individual to process the message.

For the purpose of the present research, we focus on those studies which trigger varying levels of elaboration likelihood by manipulating personal relevance and personal responsibility of individuals (Petty & Cacioppo, 1986; Shavitt et al., 1994; Trampe et al., 2010). Personal relevance is conceptualized as the extent to which a recommendation or advice has personal meaning or inherent importance to an individual (Trampe et al., 2010; Griffith, Nolder, & Petty, 2018). It occurs when one expects an event to possess substantial consequences (Petty & Cacioppo, 1986; Trampe et al., 2010). Personal responsibility, on the other hand, is regarded as the extent of ownership or contribution toward a judgement of any kind (Trampe et al., 2010; Griffith et al., 2018). If personal relevance and personal responsibility of individuals are high, they experience higher issue-relevant elaboration of the persuasive message and spend more cognitive effort to process the message (Petty & Cacioppo, 1986; Trampe et al., 2010; Griffith et al., 2018). Conversely, a lower level of these input variables results in low elaboration likelihood and less cognitive effort to process the persuasive message (Petty & Cacioppo, 1986; Shavitt et al., 1994; Griffith et al., 2018). In the present research context, we manipulate the likelihood of elaboration about the IGA by giving explicit instructions related to issue-relevant (i.e., IGA-relevant) thinking and cognition.

Specifically, we argue that when the consumers are allowed to access the IGA from a brand website and play in their mobile phones, a high cognitive elaboration context would result in more effortful processing of the brand-related information embedded in the IGA. Therefore, brand memory would be better as compared to a condition which activates a low level of cognitive elaboration wherein the consumers do not require to process persuasive information critically. Rather, they would pay attention to the peripheral cues in the gaming environment such as graphics quality, designs, and game objects (e.g., own car, competing cars, etc.). Therefore, we hypothesize the following:

H2: An IGA accessed from a brand website and played in a mobile phone generates higher (vs. lower) brand memory in a high (vs. low) elaboration condition.

Further, we examine the psychological process through which elaboration likelihood affects brand memory. For this purpose, we leverage extant empirical research (Chaiken et al., 1980; Petty & Cacioppo, 1986; Levy & Gvili, 2020) to posit that a higher level of elaboration likelihood would positively influence consumers' level of engagement with the IGA. If consumers are highly engaged while processing persuasive information about a brand, they exhibit strong brand memory (Chatterjee, 2008; Cho, 1999; Liu & Liu, 2020). This is because conditions of high engagement provide individuals the opportunity, motivation, and ability to attend and centrally process the information that lead to enduring memory (Cho, 1999; Chatterjee, 2008). In the domain of gamification of advertising (Jeong, Bohil, & Biocca), prior studies reveal a similar nature of strong positive association between game engagement and brand memory. Therefore, we hypothesize the following:

H3: While processing information in an IGA, the effect of elaboration likelihood on brand memory is mediated by engagement with the IGA.

Methods

Design, Participants and Procedure

Since this study was an extension of the previous one and dealt specifically with the lowest memory performance scenario, we made no changes to the experimental stimuli. However, unlike the earlier study where a student sample was used, we recruited members⁴ of a social media channel as the subjects of Study 2. We used a one-group (elaboration: high vs. low) between-subjects design. As part of the selection process, an open invitation was sent to

⁴ They belonged to an engagement group on Instagram.

the members seeking voluntary participation in return of INR 200 (USD 2.5) worth movie ticket. A total of 220 participants ($M_{\text{age}} = 28.11$ years, $S.D = 3.46$) showed their willingness and participated in the experiment.

The subjects were randomly allocated to the two experimental conditions. Detailed instructions of the experiment similar to Study 1, along with the URL-based link to access the stimuli (i.e., brand website that included the link to play the IGA), were mailed to them. We also sent a text message to their mobile phones 10 minutes before sending the instructions and stimuli to make sure that they only used mobile phones (and no other devices such as PCs or tablets) during the entire experiment. Following Trampe et al.'s (2010) procedure, we manipulated elaboration likelihood using *personal relevance* and *personal responsibility* of playing the IGA. Subjects in the high elaboration likelihood condition were told that they were one of a few selected individuals (personal responsibility: high) who would judge the IGA and were instructed to write a review consisting of approximately 100 words about the game and its intricacies (personal relevance: high). On the other hand, subjects in the low elaboration condition were told that many people would judge the IGA (personal responsibility: low) and were not instructed to write any such reviews (personal relevance: low). Following the gameplay, subjects were instructed to fill the online survey form using their mobile phones.

Measurement

In the online questionnaire, we sought three different sets of information. First, questions were asked about the subjects' demographics. Next, similar to Study 1, manipulation check questions related to device and access platform were sought. Followed by this, we administered five manipulation check items ranging from 1 ('not at all') to 7 ('extremely') adapted from Trampe et al (2010). Subjects were asked: "To what extent did you examine the game carefully?"; "Did you examine the game for a large amount of time?"; "To what extent

did you think about all aspects of the game?"; "To what extent did you examine the game extensively?"; and "To what extent did you rely on your first impression of the game?". These items were later combined ($\alpha = .82$) to form an elaboration index (Trampe et al., 2010). To measure game engagement, we adapted eight-item seven-point scale ($\alpha = .88$) from Hamari et al. (2016). These items are "How hard were you concentrating?"; "The game provided content that focused my attention"; "How much did you enjoy what you were doing?"; "Interacting with it was entertaining"; "Interacting with it was fun"; "How interesting was the game?"; "Did you feel bored with playing the game?"; and "Did you wish you were doing something else?". Finally, the third section had questions/items on brand recall, and recognition. Brand recall, recognition, and the covariates were measured in a manner exactly similar to Study 1.

Analysis and Results

First, we checked the manipulation of elaboration likelihood across the groups. The results supported that elaboration index in the high elaboration likelihood condition was higher in comparison to the low elaboration likelihood condition ($t_{(118)} = 12.87, p < 0.01$; Mean_[high elaboration] = 4.71; Mean_[low elaboration] = 2.81). Thus, the study confirmed the success of the manipulation of elaboration likelihood across conditions. Further, we tested the hypotheses using path analysis in AMOS 25 with maximum likelihood estimation following Sreejesh, Paul, Strong & Pius (2020), where we used the user-defined estimands⁵ to examine the conditional mediation effects of engagement. We followed this procedure because the hypothesized model demands an estimation of the conditional indirect effects on two related outcome variables (recall and recognition) simultaneously. Therefore, application of path analytic approach in a covariance-based framework helps the study to check the conditional

⁵ For more information about specific indirect effects following user defined estimands in AMOS, see: Gaskin, J. (2016), "Specific Indirect Effect", Gaskination's Statistics. <http://statwiki.kolobkreations.com>

indirect effects on multiple outcome variables. The results reported satisfactory goodness of fit indices ($\chi^2 = 64.7$, $df = 1$, $p < 0.01$; CFI = .99; NFI = .902; IFI = .904; RMR = .054). Accordingly, as shown in **Figure 3**, we tested a model with elaboration (ELB) as the independent variable (dummy coded: 1= high elaboration, 0 = low elaboration), game engagement (ENG) as the mediator, and brand recall (RCL) and recognition (REG) as the dependent variables. The inclusion of the two covariates did not support statistical significance; hence, to achieve model parsimony, we did not consider them during model estimation.

[Insert Figure 3 and Table 3 here]

As reported in Table 3, when the subjects accessed the IGA through the brand website and played it using mobile phones, exposure to high (vs. low) elaboration condition reported high brand recall (ELB \rightarrow REC (β) = .62, $p < 0.01$) and brand recognition (ELB \rightarrow REG (β) = .38, $p < 0.01$). Thus, the study found support for H2. Further, we tested the mediation of ENG (ELB \rightarrow ENG \rightarrow REC & REG) between ELB and brand memory (REC and REG) using 95% bias-corrected bootstrapped ($n = 5000$) confidence interval approach. The results supported significant indirect effects, i.e., an exposure to high (vs. low) elaboration triggered among the subjects increased engagement toward the IGA, which in turn directed their brand recall (ELB \rightarrow ENG \rightarrow REC (β) = .64, 95%-lower = .48, 95%-upper = .83) and brand recognition (ELB \rightarrow ENG \rightarrow REG (β) = .77, 95%-lower = .62, 95%-upper = .92). Thus, the study supported H3.

Study 3: Effects of access platform and gaming device on brand attitude

In the previous two studies, we examined the effects of access platform and gaming device on brand memory, which is a salient cognitive reaction of the consumers. For marketers, it is of paramount importance to also examine consumers' *affective* reactions such as brand attitude, and understand how favorably (or unfavorably) they evaluate the brands advertised in persuasive communication. Specifically, for advertising scholars, understanding what

determines consumers' brand attitude has remained a long-standing research agenda (e.g., McKenzie, Lutz, & Belch, 1986; Mitchell & Olson, 1981; Park & Young, 1986; Till & Busler, 2000). In the domain of gamification of advertising earlier scholars, too, have investigated the antecedents of brand attitude along with studying consumers' brand memory (e.g., Ghosh, 2016; Peters & Leshner, 2013; Vashisht & Pillai, 2017). Many of these studies suggest that consumers' flow experience, a heightened psychological state of arousal and presence within the gaming environment, mediates the effects of game- and brand-related characteristics on their attitude toward the advertised brands (e.g., Ham, Yoon, & Nelson, 2016; Steffen, Mau, & Schramm-Klein, 2013; Waiguny, Nelson, & Terlutter, 2012). However, while flow experience is evidently known to mediate the effects of *content-related* factors on consumers' affective reactions, no research exists to date that investigates whether it mediates the effects of *contextual cues* on brand attitude. This is the main objective of Study 3.

The concept of flow experience was first introduced by Csikszentmihalyi (1975) who defined it as “the holistic sensation that people feel when they act with total involvement” (p. 36). It is characterized by a fine balance between challenge and skills, which produces highly focussed attention, intrinsic motivation, intense enjoyment, loss of self-awareness, and time distortion (Csikszentmihalyi, 1975). To put it in simple words, individuals, in a state of flow, are highly involved in a specific activity and “nothing else seems to matter” to them (Csikszentmihalyi, 1990, p. 4). This construct has been extensively used in the context of computer-mediated environment (e.g., Hsu & Lu, 2004; Kim & Ko, 2019; Skadberg & Kimmel, 2004). Researchers have also recognized the role of flow experience in explaining persuasive effectiveness of IGAs and advergames because these platforms trigger enjoyment among the players, allow them to maintain a balance between challenge and skills, and produce optimal game-playing experience in a reward driven environment (Steffen et al., 2013; Waiguny, Nelson, & Terlutter, 2012).

In this study, we argue that when consumers access the IGA from a social networking site, a congruency in the gratifications between playing the game (Hernandez, 2008; Tran & Strutton, 2013; Tuten & Ashley, 2016) and accessing Facebook (Voorveld et al., 2018) would lead to higher levels of involvement (Buzeta et al., 2020; Demmers, Weltevreden, & van Dolen, 2020; Huang, Bao, & Li, 2017). Therefore, it would allow the consumers to be more deeply involved and immersed in the gaming environment, and experience higher levels of flow. Alternatively, an incongruency in the gratifications while accessing the IGA from a brand website would result in lower levels of involvement and immersiveness while playing the game, thus producing lower levels of flow experience.

Next, while postulating the effects of media richness on flow experience, we argue that consumers would experience more flow or presence in the gaming environment when they play in a rich (e.g., PC – specifically, desktop) *versus* a lean (e.g., mobile phone) media. This argument is based upon prior research findings that clearly established a strong positive relationship between screen size and flow experience (Hou et al., 2012; Lombard & Ditton, 1997; Reeves et al., 1999). These scholars found that as the screen size increases, the objects in the screen become larger which allows the viewers to proximate physical presence, and they tend to feel a sense of *'being there'* within the mediated environment. For example, in a study conducted by Reeves et al (1993), it was revealed that the participants who watched an action movie clip on a 70-inch screen agreed to the statement “I felt like I was a part of the action” more than those who watched the clip on a 35-inch screen. In another pertinent research involving gamers, Hou et al (2012) found that the level of flow experience was significantly higher among those who played the game (*Tomb Rider*) in a large screen (81 inches) than a small screen (12.7 inches).

Therefore, when we combine the effects of these two contextual cues, i.e., access platform and gaming device, it is argued that flow experience would be the highest when the

IGA is accessed from a social networking site and played in a PC. Alternatively, it would be the lowest when the IGA is accessed from a brand website and played in a mobile phone. While comparing the efficacy of the remaining two conditions, i.e., brand website and PC *versus* social networking site and mobile phone, we argue that the former condition would generate more flow experience than the latter. This is because the positive association between media richness and flow is more well-grounded in theory and empiricism as compared to the role of U&G in explaining individuals' presence or flow in a mediated environment. This provides a strong rationale behind attributing varying levels of flow experience to media richness more than to the needs and gratifications sought in a media consumption context. Eventually, we postulate that flow experience would affect consumers' brand attitude in a proportional manner, i.e., brand attitude would be more favourable if flow experience is high, and vice-versa. In summary, we hypothesize the following:

H4: Differences in flow experience exist in a PC-based (vs mobile-based) IGA accessed from social media (vs brand website) [Flow Experience_{social media, PC} > Flow Experience_{brand website, PC} > Flow Experience_{social media, mobile phone} > Flow Experience_{brand website, mobile phone}], which subsequently affects brand attitude proportionally.

Methods

Design

In this study, we conducted a 2 (access platform: social media vs. brand website) × 2 (gaming device: PC vs. mobile phone) between-subject experiment with brand attitude as the outcome variable and flow experience as a mediator (see **Figure 3** for the research framework). This study increased the ecological validity of our research in two ways: first, we recruited online gamers as the study subjects instead of college students. Second, instead of conducting

the study in a controlled lab setting, it was conducted as a field experiment where the subjects played the IGA in their natural setting, for example, home or office.

Stimuli, Participants, and Procedure

The stimuli (game, brands, and content on the access platforms) of the study were similar to those used in Study 1 except that the filler brands were removed from the IGA. Only the focal brand (Papon Cereals) was present in the form of billboards over the car-racing track. This change was done because the subjects were no longer required to recall a large number of brands; rather, we were interested in understanding how they evaluated the focal brand. Similar to Study 1, the IGA link was included in the bottom-right corner of the brand website and on the right-hand side of the social media page.

As part of the experiment, we sent an open invitation to the members of a large gaming community on a popular social media platform. This community consisted of over 100,000 gamers belonging to various age groups, genders, and ethnicities. However, from the perspective of the community's overall purpose (i.e., to promote gamers and gaming, and allow social ties between the members of the group), the sample was homogeneous in nature. A total of 1801 gamers reported their willingness to participate in the IGA-based field experiment from which we randomly selected a sample of 200 subjects (mean age = 36.13 years, S.D. = 3.34 years, male = 66%). Their average gaming experience was 5.70 years (S.D. = 1.10 year). These subjects were incentivized by the award of one iPad to the winner of a raffle. Three days prior to the experiment, we sent an email to the subjects which included their unique gamer IDs and a detailed instruction about how to participate in the experiment. The gamer ID mentioned the experimental condition of each subject. We randomly allocated 50 subjects in each of the four conditions. Eventually, 30 minutes before the experiment, each subject received an email that included (a) link to access the brand website or social media page, (b) explicit guidelines related

to the device (PC or mobile phone) they should use to access the content and play the IGA, (c) and the link of the online survey questionnaire to be filled up after 10 minutes of gameplay. After the subjects filled up the questionnaire, the raffle was conducted and the name of the winner was declared, to whom the iPad was later couriered. The researchers finally thanked and debriefed the subjects.

Measure

The items included in the questionnaire sought various information. In the beginning, we asked the subjects to report about the devices they used to access the platforms and play the IGA. These measures were used to capture the manipulation of gaming device and access platform. Further, we asked them to report their flow experience during the gameplay. We conceptualized the flow experience of gamers as a psychological condition marked by cognitive absorption, time distortion, and enjoyment based on prior literature ($\alpha = .82$). Three items of Ferguson, Olson, Kutner and Warner (2014) were used to assess cognitive absorption. Time distortion was then measured using two subjective items taken from Skadberg and Kimmel (2004). Another, three items were adapted from Ghani, Supnick, and Rooney (1991) to assess enjoyment. The subjects also reported their attitude toward the focal brand presented in the IGA. The attitude toward the brand was assessed on a seven-point scale (1 = “I don’t like it at all” to 7 = “I like it very much”), following Holbrook and Batra (1987), where the item asked “do you like the brand [brand name], which you saw on the IGA?”. Further, the covariates were measured in a manner exactly similar to Study 1. Finally, the questionnaire also asked the subjects to report their demographic details.

Analysis & Results

We first checked the manipulation of gaming device and access platform. The results showed that all subjects (100%) were correctly exposed to their respective access platforms

(brand website or social media page) and all of them (100%) also played the IGA in the allocated gaming device (PC or mobile phone). Thus, the study confirmed the validity of the manipulations.

Thereafter, we checked the relevance of the covariates. However, the correlation estimates of all three covariates with the outcome variable revealed that they did not have any significant effect ($p > 0.05$). Hence, we dropped these covariates from further analysis. Further, we calculated the average of the scale items used to measure flow experience (Cronbach's $\alpha = .80$) and brand attitude (Cronbach's $\alpha = .83$). These average scores were later used for hypothesis testing.

To test the study hypothesis, we performed a conditional process analysis following the recommendations of Hayes (2013, 2018), where *Model 7* was employed with 10000 bootstrapped samples. As shown in **Figure 1**, from the model estimates, we first examined the interaction effect of access platform and gaming device on flow experience. The results revealed a statistically significant effect (estimate: .38, S.E = .15, $p < 0.05$). A follow-up spotlight analysis (Spiller et al., 2013) aimed at probing the interaction effect supported a higher flow experience when the subjects played an IGA in PC device (vs. mobile phone) after accessing the game from the social media page (estimate: 1.68, S.E = .10, $p < 0.05$). Similarly, the results also revealed a higher flow experience when the gamers played an IGA in a PC (vs. mobile phone) where website was used as an access platform (estimate: 1.29, S.E = .10, $p < 0.05$). Subsequently, the conditional indirect effect was also found to be statistically significant (index of moderated mediation [access platform \times gaming device \rightarrow flow experience \rightarrow brand attitude] = .38, BootSE = .15, BootLLCI = .09, BootULCI = .68). As shown in **Figure 4**, these results indicated that when the subjects played the IGA in a PC (vs. mobile phone), use of social media as an access platform developed higher flow experience, which in turn, resulted in higher brand attitude (estimate: 1.67, BootSE = .15, BootLLCI = 1.36, BootULCI = 1.95), as

compared to the use of website as an access platform (estimate: 1.29, $Boot_{SE} = .13$, $Boot_{LLCI} = 1.03$, $Boot_{ULCI} = 1.54$). Based upon these results, H4 was supported.

[Insert Figure 4 here]

Discussion

Understanding the role of media and other contextual cues in influencing consumer behavior is a crucially under-researched area in the domain of gamification of advertising. The present article addresses this gap by providing critical insights about the effects of important contextual factors such as access platform and gaming device on players' brand memory and brand attitude. To examine the nature of these relationships, we drew the conceptual fabric from the U&G theory, media richness theory, ELM of persuasion, and the concept of flow experience. According to the U&G theory, online platforms such as brand website and social media vary in the gratifications delivered to consumers. While social media, especially social networking sites, mostly gratify the socialization and entertainment-related needs of online users, brand websites are directed to fulfil needs such as information seeking, usability, and interactivity. Results of the first study advance these theoretical underpinnings and show that not only it is important to acknowledge varying types of gratifications from online platforms, but also the congruency in gratifications between a persuasive tool (in this case, IGA) and the online platform from where it is accessed plays a critical role in determining consumers' cognitive reaction such as memory of the brands placed in the IGA. We empirically establish the fact that there is an interaction between access platform and gaming device which triggers differential effects on consumers' brand memory. Brand memory is highest in a situation that is characterized by a more congruent access platform (social media) and a more sensory-rich gaming device (PC). Thereafter, brand memory gradually weakens in a descending order characterized by the following situations: social media and mobile phone, brand website and

PC, and brand website and mobile phone. Findings from the second study suggest that consumers' brand memory can be strengthened by cognitive elaboration about the IGA. Specifically, it is revealed that when consumers access the IGA from a brand website and play it on mobile phones, their low levels of brand memory become improve when they consciously elaborate or think more about the IGA. The effect of this cognitive elaboration on brand memory is also found to be mediated by consumers' engagement with the game. Finally, in the third study, we understand the effects of these contextual factors on players' attitude toward the brands embedded in the IGA. We find that access platform and gaming device interact to affect consumers' flow experience or their sense of presence in the gaming environment which further influences brand attitude positively.

Theoretical Contributions

Understanding consumers' cognitive and affective reactions toward the advertised brands has remained one of the most common goals among the academics in the domain of gamification of advertising research. Toward these pursuit, past studies have extensively focussed on game, brand, and individual characteristics (Terlutter & Capella, 2013). While these studies significantly enrich our learning about the subtle effects of brand placement in video games, they ignore how the context in which games are played affect consumer behaviour. The present research fills this gap and sets a new research direction by exploring the influence of two critical contextual factors such as access platform and gaming device on players' cognitive (brand memory) and affective (brand attitude) responses. This research also advances our knowledge about the role of media context in advertisement effectiveness. While a lot is already known about the effects of congruency between media context and advertisement on various facets of consumer behavior, most of the media contexts were traditional in nature such as TV, magazines, radio, film, and newspaper. It is demonstrated that the influence of media context congruency also prevails in Internet-based media such as brand

websites and social networking sites with newer types of entertainment-driven advertising tools such as IGA and advergames. The psychological process through which memory performance is affected, i.e., engagement, provide subtle hints to advertising researchers that, theoretically, many variables exist (other than elaboration) which might affect players' memory and await empirical investigation. Moreover, this insight adds value to the prior literary works on mobile-based games (e.g., Park, & Kim, 2013; Yi, Lee, & Kim, 2019), especially in understanding the characteristics and psychological process that helps to attract and engage consumers toward brand-related stimuli in the gaming environment. Finally, the present research contributes to the literature that deals with the effects of content-related cues on consumers' flow experience. It suggests that not only the game- and brand related content, but also the game playing context determines the level of flow experience among the players which may further affect their cognitive and affective outcomes.

Implications for Practice

Our research provides valuable insights for the marketers. During the last decade, significant advancement in computer hardware and software have propelled the growth of mobile phones which has compelled the marketers to use this device and increase their reach to their target consumers. However, our study findings suggest that PC-based persuasive communication such as IGAs generate higher brand memory and attitude than mobile-based IGAs. Therefore, it is high time that marketers shift a share of their attention to developing IGAs that can be suitably played in PCs. One may coherently argue here that mobile phones have a lot of advantages over PCs such as price, ease of use, applicability in daily and less-complex situations, and portability. Therefore, marketers should insist game developers to design IGAs with enriched audio-visual qualities, so that the perceived media richness of the players are augmented even if they play the IGAs in mobile phones. Second, our research suggests that marketers should use social media brand pages more frequently to embed IGAs

and advergimes. Many product manufacturers and service providers follow the practice of including these games in their well-managed and updated brand websites. However, our research suggests that marketers should make IGAs highly available on social media channels, specifically social networking sites such as Facebook, which provide gratifications very similar to playing games. On the contrary, placing a well-crafted IGA or advergime in the brand website may simply go unnoticed because of the incongruity in gratifications between playing a game and browsing the website. Third, our research also provides a solution to those marketers for whom it is not feasible to develop PC-based games or make them available on social media channels. These marketers would still be able to improve brand memory by inducing high cognitive elaboration among the players using specific instructions related to personal relevance or personal responsibility. For example, marketers may simply inform the consumers that their suggestions for improvement of the game are appreciated. Such an *invitation* would increase consumers' level of engagement which would lead to enhanced brand memory. Finally, our research empirically demonstrates that experiencing flow while playing the IGA enhances players' evaluation of the advertised brands. Therefore, mobile- and PC-based IGA should be designed to augment this optimal experience of the players.

Limitations and Future Research Direction

While the present research offers significant implications for the development of effective IGAs, we acknowledge the limitations of our study. First, we considered only one specific social media channel, i.e., Facebook, amongst various other channels such as LinkedIn, Twitter, Instagram, Pinterest, Google Plus, etc. A study conducted by Voorveld, Neijens, and Smit (2009) posits that consumers are differentially engaged with these social media channels and seek varying types and degrees of gratifications. For example, the authors found that Facebook provides more entertainment but less topicality as compared to LinkedIn. Similarly, entertainment derived from Twitter is less than Pinterest while the former platform meets more

socialization needs of the users than the latter one. Therefore, future researchers must compare the suitability of the brand website with social media channels other than Facebook. Second, we compared brand memory and brand attitude only between PCs and mobile phones. However, consumer electronics manufacturers have been spending a lot of money toward the development of high-tech gaming consoles such as Xbox and Nintendo. From an information processing perspective, these consoles may have some advantages (e.g., extremely rich visual stimuli and telepresence, and hence higher levels of information processing) and some disadvantages (e.g., more game controls, therefore less spare cognitive capacity of the players (Kahneman, 1973; Lee & Faber, 2007) and lower levels of information processing). Therefore, it will be interesting to explore in future how gaming consoles perform in comparison to PCs and mobile phones in developing brand memory. Finally, while there are different types of game genre, we experimented with a car racing game. Research in future may be conducted to validate our research framework in other types of game genre such as shooting, strategy, and simulation, to name a few.

Conclusion

This research aims to depart from the present trend of investigating content-driven effectiveness of IGAs and focus on the role of contextual factors. Therefore, it examines the effects of two such critical factors, access platform and gaming device, on consumers' brand memory and brand attitude. Both these outcome variables are found to be differentially affected by the interplay of these contextual factors. Consumers demonstrate strongest brand memory and brand attitude when they access the game from a social media channel and play it in their PCs. Thereafter, memory and attitude gradually decrease in the following order: social media + mobile phone, brand website + PC, and brand website + mobile phone. The research also demonstrates that in a situation when brand memory is weakest, i.e., when the IGA is accessed from brand website and played in mobile phone, marketers can improve memory performance

by increasing cognitive elaboration of the players by giving specific instructions. The research reveals that high elaboration is mediated by enhanced engagement to affect better memory performances. Similarly, it is also found that consumers' flow experience in the gaming environment mediates the interaction effects of access platform and gaming device on brand attitude.

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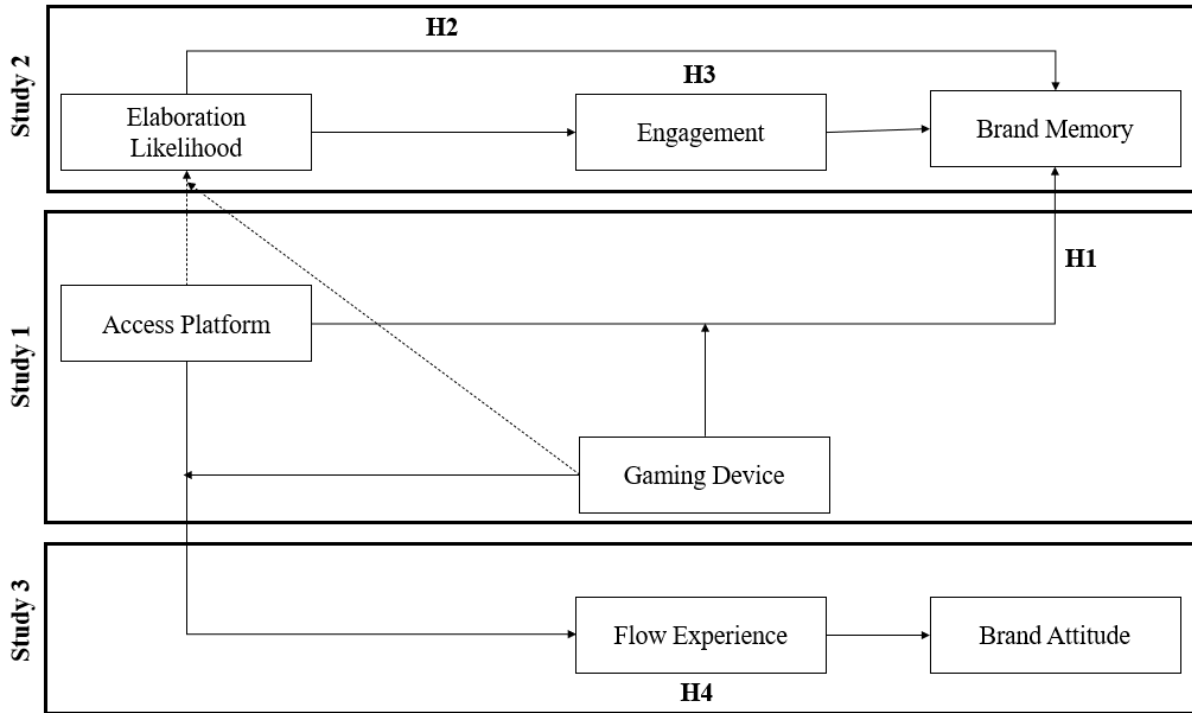
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Figure 1: Conceptual Framework



Note: Dotted arrows in Study 2 signify that that combination of brand website and mobile device was considered out of all possible combinations. Brand memory includes recall and recognition scores.

Figure 2: Effects of access platform × gaming device on brand memory

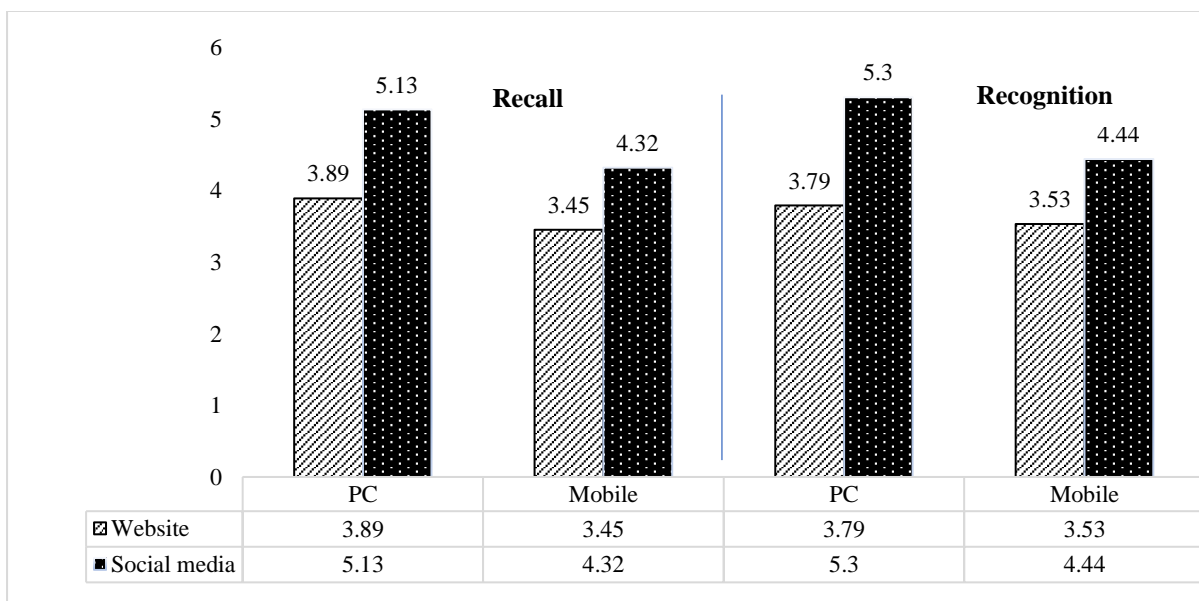
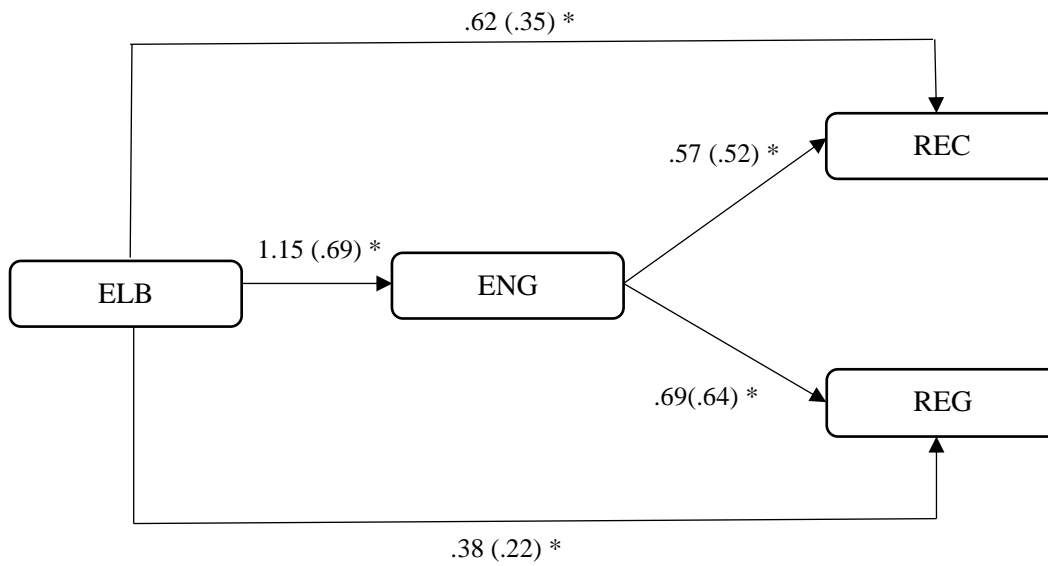


Figure 3: Hypothesis Testing Results of Study 2



Note: ELB: Elaboration Likelihood; ENG: Engagement; REC: Recall; REG: Recognition. * shows significance at 1% level. Values within and outside the parentheses represent standardized and unstandardized estimates.

Figure 4: Conditional Effect (access platform × gaming device → flow experience)

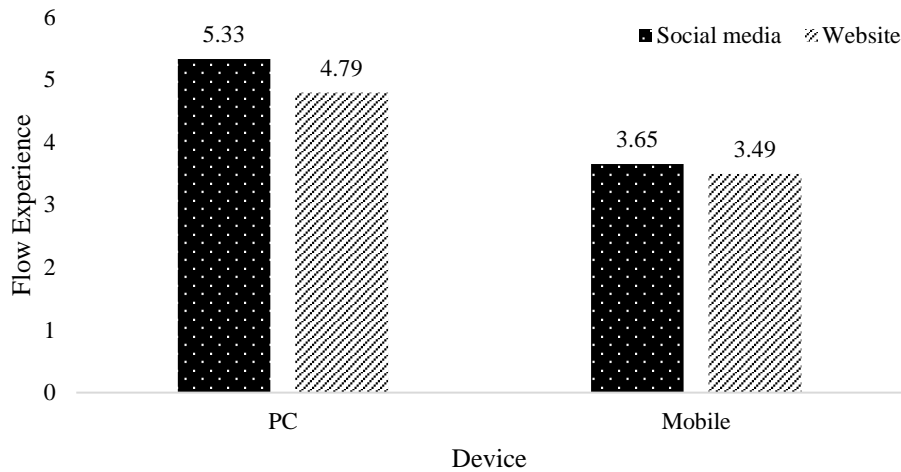


Table 1: Uses and gratifications of social media⁶

Motives	Conceptualization	Sub-motives	Prior Research
Entertainment	The emotional relief produced by momentarily breaking from daily routines (Shao, 2009; Tsai & Men, 2013).	Playing, passing time, and having fun; escaping or being distracted due to routine work and/or problem; relaxation, aesthetic, or cultural enjoyment; emotional release.	Muntinga et al. (2011), Rathnayake and Winter (2018); Sundar and Limperos (2013); Wei and Lu (2014).
Personal Identity	The urge to create one's identity by showcasing an image of one's personality and by obtaining recognition from his or her social circle (Jensen Schau & Gilly, 2003).	Self-assurance, self-expression, self-presentation, social recognition	Muntinga (2016), Muntinga et al. (2011), De Veirman et al. (2017).
Integration and Social Interaction	An individual's feeling of connectedness (to a social network, for instance) that allows the individual to enhance the knowledge about other individual's circumstances while enriching socialization skills (Valenzuela, Park, & Kee, 2009).	Community building, connectedness, bandwagon	Chen (2011); Jahn and Kunz (2012); Muntinga et al (2011); Sundar and Limperos (2013); Rathnayake and Winter (2018).
Information	An individual's understanding and awareness of relevant conditions and events in the world around (Muntinga et al., 2011).	Gaining social information, information seeking, surveillance, self-documentation, gaining communicatory utility, information sharing.	Malik, Dhir, and Nieminen (2015); Oeldorf-Hirsch and Sundar (2016); Sheldon and Bryant (2016); Whiting and Williams (2013).
Remuneration	The intention of an individual to receive future benefits and rewards that can be distinguished from his or her behaviour (Muntinga, 2016; Muntinga et al., 2011).	Getting economic payoffs (e.g., deals, discounts, coupons, sales promotion, participating in competitions), getting job-related benefits, fulfilling personal wants.	Hars and Ou (2002); De Veirman et al. (2017); Knoll (2016); Muntinga et al. (2011).
Empowerment	The urge of an individual to exercise power or control on the perception of other individuals or organizations by raising their concerns and by seeking improvements in products, services, and procedures (Muntinga, 2016; Muntinga et al., 2011).	Influencing institutions and individuals, efforts to impose accuracy in products and services.	De Veirman et al. (2017); Kaye (2007); Muntinga (2016); Muntinga et al. (2011).

⁶ Due to space restrictions, the detailed references of some of the citations in this table are not provided. It is available from the authors upon request.

Table 2: Univariate test results of Study 1

Dependent Variable	Access platform across devices (a)		Mean	F statistics	Devices across access platform (b)		Mean	F statistics	
	Access	Device			Device	Access			
Recall	Website	Mobile	3.455 (4)	12.06 (1, 208), p < .001	Mobile	Website	3.455 (4)	46.23 (1, 208), p < .001	
		PC	3.899 (3)			Social media	4.327 (2)		
	Social media	Mobile	4.327 (2)	40.67 (1, 208), p < 0.01	PC	Website	3.899 (3)	96.04 (1, 208), p < .001	
		PC	5.137 (1)			Social media	5.137 (1)		
	Recognition	Website	Mobile	3.531 (4)	5.270 (1, 208), p < 0.05	Mobile	Website	3.531 (4)	62.10 (1, 208), p < .001
			PC	3.797 (3)			Social media	4.446 (2)	
Social media		Mobile	4.446 (2)	56.46 (1, 208), p < 0.01	PC	Website	3.797 (3)	175.15 (1, 208), p < .001	
		PC	5.309 (1)			Social media	5.309 (1)		

Table 3: Study 2 path estimates

	Unstandardized Estimate	Standardized Estimate	S.E.	t-values
ELB → ENG	1.115	0.689	0.079	14.082*
ENG → REC	0.572	0.519	0.062	9.260*
ENG → REG	0.692	0.642	0.059	11.710*
ELB → REG	0.382	0.219	0.095	4.001*
ELB → REC	0.620	0.348	0.100	6.210*

Note: * shows significant at 1% level. S.E = standard error.