



Does game rules work as a game changer? Analyzing the effect of rule orientation on brand attention and memory in advergimes



Sreejesh S.^{a,*}, Anusree M.R.^b, Abhilash Ponnamm^c

^a School of Management Studies, Cochin University of Science and Technology, Kochi, 682 022, Kerala, India

^b Department of Operations, Rajagiri Business School, Rajagiri Valley, Kakkanad, P. O. Kochi, 682 039, Kerala, India

^c NMIMS Hyderabad, Department of Business Analytics, India

ARTICLE INFO

Article history:

Available online 28 December 2017

Keywords:

Advergimes
Rule orientation
Attention
Memory
Congruence
Autonomy
Integration
Brands

ABSTRACT

In advergimes, marketers typically use a brand execution strategy of enacting the game rules and embedding the targeted brands in these rules to achieve the brand effectiveness. Despite the extensive use of this mode of gameplay, the current understanding in this area lacks clarity. In this context, the present research examines the importance of rule orientation as a mode of gameplay, its boundary conditions which strengthen this rule orientation, and the mechanism through which the application of rule orientation enhances gamers' brand attention and memory. Results from two experimental studies conclusively prove that use of rule orientation positively influences gamers' brand attention and memory. Results also suggest that rule orientation boosts the gamers' brand attention and memory when it is presented in a high brand-game goal congruent and in a high game autonomy mode. In addition, the results also support that rule orientation enhance the gamers' attention and memory when it designed as high brand-game goal congruent along with a highly brand integrated mode. The effect of rule orientation and its boundary conditions creates brand attention and memory through the gamers' perception of the flow experience. Thus, the study findings suggest that marketers can use rule orientation along with high brand-game goal congruence, high autonomy, and high brand integration because this mode of gameplay creates a very strong form of brand attention and memory.

© 2017 Elsevier Ltd. All rights reserved.

1. Introduction

Technological developments have changed the way firms communicate with their target audience. One such improvement in communication is placing the targeted information in entertainment/infotainment media which firms' prospective customers often interact with. The same advances in technology also gave an opportunity to firms' targeted audience to block firm-specific brands (ex: advertisements, advertorials) that they do not want to see during their media interaction so as to concentrate on the desired program without any deviations (Lee & Faber, 2007). As a result, brand effectiveness in non-traditional entertainment media has become questionable. This phenomenon forced companies to search for newer platforms that do not demarcate between entertainment and information sharing. Advergame is one such

innovation where the advertisement is integrated into the game itself. Thus, communicating branded brands through advergimes has become a popular medium lately. This mode of entertainment cum communication platform has become familiar due to the extensive reach of the internet (Herodotou, Winters, and Kambouri 2012). Prevailing studies report that targeted audience accepts firm-specific communication more readily when placed within the game context than when placed in isolation such as commercials or interstitials (Chaney, Lin, and Chaney 2004; Lewis & Porter, 2010; Nelson, Keum, and Yaros 2004).

Advergimes demand series of player selected decisions during the gameplay. The outcome of these decisions will either lead to winning or losing the game depending upon the series of decisions made by the player during the gameplay. The limited set of decisions (reflected in actions/choices) which the game player can make at different phases of the games are called game rules (Colby, 2014; Gee, 2003). In a rule-oriented advergame play, the game does not present the player with explicit brand claims and arguments about the firm/its products during their gameplay; rather, the brand is embedded within the game rules. Subsequently, by

* Corresponding author.

E-mail addresses: sreejeshibs@gmail.com (S. Sreejesh), anun74@gmail.com (M.R. Anusree), abhilashponnam@gmail.com (A. Ponnamm).

observing the game rules, the game player comes to interact with brand-specific brand embedded within the game (Smith, 2010). Game developers often use this rule oriented game enactments in creating awareness about subjects such as creating awareness amongst targeted customers about firm-specific products/services, publicizing agenda in political campaigns; enlightening citizens about pressing sociological/environmental issues, etc. For example, the online rule based game, 'Congo Jones and the Loggers of Doom', actively involves rules in gameplay such as an invitation to jump logs, climb waterfalls and evade chainsaws to help forest people and save their lands, etc. The core objective of this game is to allow the gamer to enact the rules and thereby achieve brand goals (e.g., create awareness about the protection of the planet's last rainforest frontier). This perspective of rule-oriented game enactment and the brand execution indicates a new way of brand representation and this has overruled the traditional brand communication modes through the spoken words, writings, images, or moving pictures (Bogost, 2007; Colby, 2014).

The current research focuses specifically on the rule enacted gameplay, i.e., presenting the branded brand as a set of rules in a game that requires the gamers to interact with the game rules to complete the gameplay. The operating premise of rule-based gameplay is that rule-based games are more successful, leading to better brand evaluations and prolonged attention and retention of communicated brands. Despite the large body of research that examines different characteristics of the game on gamers' brand related attention and memory, it remains unclear how the use of game rule orientation as a mode of the brand execution influences consumers' game embedded brand attention and memory. Thus, our primary research questions are: whether such presentations of rule-based gameplay affect the gamers' brand attention and memory of the branded brand; if so, how? Subsequently, we probe into required conditions in which rule-based game execution enhances the brand attention and memory in the game players.

The central premise of this study is that execution of rule-oriented game play may affect gamers' persuasion through schema-based processing. This proposition has been supported by the past researchers who state that people use schemas which help them make sense of their immediate interactive environment and in turn, reflects in their actions or behaviours (e.g., Fiske & Linville, 1980; Schank & Abelson, 1977). Thus, we propose that when gamers are exposed to rule-oriented gameplay, they will elicit brand related schemas more often, thereby leading to a heightened level of brand attention and memory about the firm-specific communication. Further, following schema-congruity arguments (Meyers-Levy & Tybout, 1989), we propose that perceived congruity resulting from a match between the game goal and (firms) brand goal provides more brand-related attention and memory. Conversely, perceived incongruity may lead to reduced levels of brand attention and memory. Besides, this schema-congruity may be further strengthened to create strong brand related attention and memory if the gameplay imparts higher autonomy to the gamer during the gameplay. We define autonomy within the game rule context as the extent to which the rule-oriented game can make brand related claims without relying on any outside information.

The degree of game autonomy is not, however, the only conditional factor which strengthens the effect of schema congruity to create brand attention and memory of embedded brands in the game. Schema literature supports that categories are stored in memory in a stronger fashion when an item is perceived as having a stronger fit the evoked category (Fiske, 1982; Fiske, Pavelchak, & Sorrentino, 1986). Thus, we propose that when the brand is highly integrated (versus low integration) with the gameplay, it will elicit stronger (weaker) category associations. Accordingly, we

propose that an exposure to rule orientation with higher brand-game goal congruence in high brand integrated gameplay results in higher levels explicit memory, such as brand attention, recall and recognition.

Further, based upon experience flow literature (e.g., Nelson, Yaros, and Keum 2006; Steffen, Mau, & Schramm-Klein, 2013) and excitation transfer theory (Zillmann, 1971), we presume that the game rule orientation and its boundary conditions which strengthen the gamer schemas creates brand attention and memory through an intervening mechanism of gamers' game flow experience. Flow experience explains a state in which the game player is completely absorbed by the advergaming in order to solve the challenges evoked by the exposure of rule-orientation during the gameplay. Indeed, this assumption is supported by prior studies (e.g., Grigorovici & Constantin, 2004; Nelson, Ronald, Yaros, & Keum, 2006), that gamers' perception of flow experience plays a pivotal role between game related characteristics and game players' brand related attention and memory in in-game advertising. In support of this, Steffen et al. (2013) found that while considering the outcomes of advergaming, it is essential to consider the intervening effect of gamers' perceived flow experience. Thus, in this paper, we consider game players' flow experience as the important intervening mechanism which transfers the simultaneous impact of rule orientation and its conditions and strengthens brand attention and memory.

We examine our research propositions through two experimental studies. In study one, a between-subject experiment is conducted to examine how the use of rule-orientation and the conditional effects of brand-game goal congruity and game autonomy influence gamers' brand attention and memory. Further, we also consider the intervening role of flow experience the above-said conditional effects and brand attention and memory. In study two, which is an extension of study one, we examine the conditional effect of brand integration, instead of game autonomy as a boundary condition that determines the interaction effect of rule orientation and brand-game goal congruity in influencing gamers' brand attention and memory. This understanding contributes to both theory and practice. From the theoretical point of view, the study contributes a framework that depicts the role of game rule orientation in facilitating firm-specific communication within advergaming. Our study also confirms the conditions which further strengthens the gamers' brand related schema to increase the effectiveness of the communicated brand. From a managerial perspective, this study provides directions to game developers, media planners, and advertisers regarding the use of rule-based advergaming to leverage the effect of their targeted brand communication.

2. Literature review & hypotheses formulation

2.1. Advergaming

Promoting the branded messages through games, called as advergaming, is a new form of advertising used by marketers to promote their products or services (Sreejesh & Anusree, 2017). In this mode of brand communication, brands are embedded with an entertainment media, such as games, wherein the game player during the gameplay is exposed to both the game and the firm's brands simultaneously (Bellman, Kemp, Haddad, & Varan, 2014). This game embedded brand communication enable the advertisers to promote their brands through mixing both entertainment and information sharing, thereby presumed to get a strong brand attention of the embedded brands among the game players (Yang, Roskos-Ewoldsen, Dinu, & Arpan, 2006). The core objective of this mode of entertainment cum promotion medium is to obtain brand

communication effectiveness in terms of both attention and retention of the firm's brand. Unlike other entertainment media brand promotions (example, television), this media does not demarcate between entertainment and brand promotion. Thus, in this mode of simultaneous entertainment and brand delivery, audiences cannot skip the seamlessly embedded brand, unlike other traditional media where firms' brands are clearly demarcated as advertisements. This, in turn more likely to increase the attention of the embedded brand in the game. In contrast to other non-traditional brand communication methods, through this mode of brand communication, marketers can reach the target audience by active engagement rather than passive exhortations (Terlutter & Capella, 2013).

After recognising the role of game as a promotion tool, several academic attempts were conducted focusing on various characteristics of game, such as level of fit or congruity between brand and the game (e.g., Gross, 2010; Hernandez, Chapa, Minor, Maldonado, & Barranzuela, 2004; Lee & Faber, 2007; Lewis & Porter, 2010; Peters & Leshner, 2013; Verberckmoes, Poels, Dens, Herrewijn, & De Pelsmacker, 2016; Wise, Bolls, Kim, Venkataraman, & Meyer, 2008), genres of games (e.g., Apperley, 2006), brand placements (Friestad & Wright, 1994; Gangadharbatla, Bradley, & Wise 2013; Nairn & Fine, 2008; Van Reijmersdal, 2009; Wright, Friestad, & Boush 2005; Van), and nature of game (Vashisht & Sreejesh, 2016, 2017; Vashisht & Royne, 2016), game characters' influence (e.g., Choi, Yoon, & Lacey 2013) and game outcome (e.g., Steffen et al., 2013). In addition, studies conducted in advergaming setting also considered the importance of gamers' cognition related aspects and stated that during the gameplay gamers' processing capacity is divided between primary (gameplay) versus secondary (brand processing) tasks (Sreejesh & Anusree, 2017; Vashisht & Sreejesh, 2016), therefore, cognition demand used by gamers during the gameplay works as significant conditional factor, and it ultimately influences gamers' brand related attention and memory (Lee & Faber, 2007; Sreejesh & Anusree, 2017). Further, researchers also recommended that location of brand placements play a critical role in influencing brand attention and memory; implying that a prominent form of placement of the brand in the game can capture a player's brand attention and aid in better brand recall (d'Astous & Chartier 2000; Lee & Faber, 2007; Nelson, Keum, & Yaros, 2004). Similarly, previous studies also indicated that during the gameplay, the gamers' involvement also plays the prominent role, which influences the gamers' ability to recognize, process, and recall brand placements (e.g., Van Reijmersdal, Rozendaal, & Buijzen 2012).

In summary, from the analysis of the existing literature in advergaming, it can be inferred that game related characteristics work as either primary cause or conditional cause. These characteristics play a pivotal role in influencing the effectiveness of brand execution and delivery. However, studies are yet to address the question: 'does the mode of gameplay, specifically the use of rule-oriented gameplay influences gamers' brand related attention and memory during the gameplay? If it influences, then what are the conditions under which and mechanisms through this mode of gameplay controls the gamers' brand related attention and memory? Answering this question is imperative from a theoretical and practical point of view because the rule enacted brand execution is a relatively new perspective that is emerging in in-game brand communication models (Bogost, 2007). Thus, in the current study, we made an attempt fill these gaps in the existing literature and provide directions to practitioners.

2.2. Brand attention

In the conventional advertising models, such as Attention-Interest-Desire-Action (AIDA: Aaker, Batra, & Myers, 1992) and

Awareness-Interest-Evaluation-Trial-Adaption (AIETA: Krugman, 1977) models, it is emphasized that when individuals are presented with some information, it will be processed through a cognitive information processing mode. In this cognitive information processing mode, attention is required as an initial phase which works as stimuli for further processing of the exposed information in a hierarchic order culminating in action (Aaker et al., 1992). Studies reiterated that the quality of attention, either focal and consciously processed or peripherally noticed or pre-attentively processed, affects the processing of the given information. The individuals' ability to allocate attention to the given information enhances their sensorial and cognitive ability to process the same exposed information (e.g. McInnis and Jaworski 1989). Thus, from an ad or brand effectiveness perspective, the understanding of attention plays a critical role (Kuisma, Simola, Uusitalo & Öörni, 2010).

2.3. Brand memory

In addition to brand attention, the brand effectiveness has long been analysed on the basis of two critical explicit memory measures, specifically in terms of how well the given information is recalled and recognised (Kuisma et al., 2010). These explicit memory measures allow the individual to think back to the previously exposed brand and in turn direct the same individual to recall or recognize the presented information (Shapiro & Krishnan, 2001). In advertising literature, studies extensively examined the importance of explicit memory as a measure of ad effectiveness (e.g., Sundar and Kalyanaraman 2004; Yoo and Kim, 2005). This is primarily because these explicit memory measures do not necessarily correlate with the attractiveness of the presented brand or liking of the product presented in the brand (Aaker et al., 1992). Rather, these two measures specifically represent the audience's ability to recall and recollect the prior exposure episode and indicate their capability to retrieve information from memory which is particularly associated with that episode (Schacter, 1987). Following the same logic, in an advergaming, literature studies stated that in this mode of game directed brand exposure, the gamer is exposed with different formats of the game and in these formats, a brand can be exposed in different modes. Thus, it is important to examine these explicit memory measures to confirm brand effectiveness (Sreejesh & Anusree, 2017; Vashisht & Royne, 2016).

2.4. Rule oriented gameplay on brand attention and memory

The unique feature of advergaming is that this medium possesses the characteristics of both expressiveness and persuasiveness. This entertainment cum brand communication medium represents how real and an imaged system works. Thus, during the gameplay, the game can facilitate the gamer to perform the expressiveness through the interaction of these real or imagined systems, which in turn create gamers' judgment about this real or imagined system. In this line, Bogost (2007) argued that in video games, a new representational mode of rule-based representations and interactions open a new domain for expressiveness and persuasion. Bogost (2007) argument is that the persuasive potential of video games lies in their rule-based representation, that is, games are neither verbal, written, visual rhetorical utterances, but the type of rule enacted in the gameplay generates brand claims. Thus, it can be argued that the rule orientation facilitates the expressiveness of the game player, thus leading to more persuasiveness towards the associated entities based on which the expressiveness is being performed.

Rule orientation explains a way of brand persuasion used by game developers to communicate the targeted brands through the

game rules. Specifically, in this mode of gameplay, the games will not attach any verbal, written or visual brands in the game, but by following the rule embedded in the game, the gamer comes to enact the brand which enhances the brand persuasion. This kind of rule-oriented gameplay positions the game player as an active participant in the game without creating any demarcation between the game and the brand. By following the rules during the course of the game, the brand would be communicated to the gamer. Thus, instead of communicating the brand as a different entity in the game, the exposure of the game rule lets the gamer to experience the brand and thereby it increases the brand persuasion. For example, in a rule-oriented gameplay, during the course of the gameplay the, gamer receives a series of rule enactments to continue with the gameplay. Then the enactment of these rules and its execution during the course of the rule-oriented play generate an understanding of these rules and its associated elements, such as a brand. Ultimately, during the execution of this prescribed rule, the gamer usually understands the real meaning of the targeted brand.

In this study following schema theory (Bartlett, 1932), we presume that the use of rule enactment (versus no rule enactment) differently influence gamers' brand persuasion, specifically, brand attention and memory. Schema theory supported that an individual's actions are an outcome of the organization of the experience which the same individual is drawn on when dealing with a current situation (Bartlett, 1932). Thus, the strength of schema held by a person is determined by the situations they find themselves into generating, the goals they hold and the tools they use or a blend of all these. The differences in situations, goals and the tools or a blend of all these create a different experience leading to the development of an altogether different schema (Sorensen & Stanton, 2015). Thus, when a brand is attached to a rule-oriented gameplay, the elicitation of the rule related schemas help the gamer to generate more schemas related to the associated elements in the game. Thus, the rule orientation directs the gamer to elicit brand related schemas more. However, in no rule oriented gameplay, the gamers' will not be able to generate any schema related to the brand, since the concentration is only on playing the game to achieve the game goals. Since there is no game incentive to process peripheral/brand oriented information, it leads to generating schemas related to the game alone. This schema related to the game prevents the formation of brand-related schemas since very low brand attention and memory is allocated to this task considering its little significance in achieving game objectives. Based upon this argument, we argue that in rule enacted gameplay the brand persuasion will be higher, leading to higher brand attention and memory. On the contrary, in no rule enacted gameplay, the brand persuasion will be lower, thus leading to lower brand attention and memory. Thus, we hypothesize that;

H1. Game rule-orientation has an influence on gamers' brand attention, recall, and recognition, such that gamers' brand attention, recall, and recognition are higher (lower) for an advergaming which enacts rule orientation (no rule orientation).

2.5. Moderating role of brand-game goal congruity

During rule enacted gameplay, several factors may strengthen the gamers' brand persuasion and in turn effect brand attention and memory. One such consideration can be the internal congruence between the brand goal and the game goal (referred to here as brand-game goal congruity). The brand-game goal congruence occurs when the brand the advertiser wants to execute matches with the goal enacted during the gameplay. On the other hand, brand-game goal incongruence occurs when the brand enacted the rules of the games does not match the game goals. For example, in a

game if the advertiser intended to communicate the environmental consciousness of a particular brand through the rules enacted in the gameplay, and if the goal of the game related to warfare, then it is completely brand-game incongruent game.

In advergaming setting, studies stated that congruity plays a pivotal role and it directly affects the game player's information processing and has implication for memory and attitudes development (Gross, 2010; Lee & Faber, 2007; Wise et al., 2008). The higher brand-game goal congruity creates higher brand attention and memory because the congruity facilitates the gamer to process the information by readily confirming the existing brand expectations, or brand schemas (Moorman, Neijens, & Smit 2002; Shamdasani, Stanaland, & Tan 2001). A schema is considered as a framework of cognitive knowledge held by an individual that holds information about a concept, including its attributes and connections among attributes (Fiske & Taylor, 1991). Moreover, congruity facilitates the gamer to better remember the brand than incongruent because gamers can easily assimilate the information into the schema (Gross, 2010). Since in a rule-oriented gameplay brand-game goal congruity facilitates the gamer to easily assimilate and readily confirm the brand expectations, we hypothesize:

H2. In the rule-oriented gameplay, higher brand-game goal congruity (versus low brand-game goal congruity) generates higher (lower) brand attention, recall, and recognition.

2.6. Moderating role of game autonomy

In the above-said hypothesis, we predicted that in a rule enacted gameplay a high level of brand-game goal congruity directs the gamer to develop a higher level of processing of information. In support of this, here we state that there could be other conditions which further strengthen this processing of information. One such conditional element which further strengthens the effect of brand-game goal congruity in rule enacted gameplay is game autonomy. Game autonomy in a rule-oriented gameplay explains the degree to which the gameplay allows the gamer to realize the dialectical or argumentative potential from and through the game (Smith & Just 2009). In a high autonomous gameplay, the brand will be completely inherent in the game and therefore the game does not demand any additional information (textual or contextual) in order to make sense of the brand. On the other hand, a low degree of autonomy in a gameplay allows the gamer to seek additional information or information that is not present in the game. In short, if a game does not demand any additional textual or contextual information to process the information and provides everything self-explanatory through enacting the rules during the gameplay, then it allows the gamer to achieve full game autonomy.

Following cognitive load theory (Sweller, 1988; Sweller, Van Merriënboer, & Paas 1998), we explain why a rule enacted gameplay with high brand-game congruence under high game autonomy direct more brand attention and memory. Cognitive load theory states that individuals possess finite cognitive resources at a point in time to allocate, encode process and retrieve information. Therefore, when the individual confronts a task, more attention capacity will be devoted to the task at hand and allocate the remaining to the task associated with the second one. Thus, in a rule enacted advergaming gamers' primary task is to enact the rules and complete the game. In this condition, if the game provides full autonomy through facilitating the gamer to realize the argumentative potential only through the game, it will create more brand attention and memory because gamer needs to allocate his or her cognitive resource only to play the game. On the other hand, if the game provides less autonomy, that is, it demands additional textual or context information to continue with the game, then the gamer

left with only limited cognitive resources. Therefore, it is very likely that brand attention and memory would be less in low game autonomy condition. Thus, we hypothesize that:

H3. Game autonomy moderates the game rule-orientation \times brand-game goal congruity effects on brand attention, recall, and recognition, such that in a rule-oriented gameplay, exposure to high brand-game goal congruity combined with high game autonomy (low game autonomy) develops high (low) brand attention, recall, and recognition.

2.7. Moderating role of brand integration

In an advergame, brand integration explains the extent to which the specific game integrates directly (or indirectly) the brand or its elements in the gameplay (Kinard & Hartman, 2013). A fully brand integrated gameplay heavily depends on the specifics of the brand. Studies supported that in a fully integrated brand game, the advertiser can expose the brand through varying modes, such as demonstration, illustration, and association (Chen & Ringel, 2001). For example, in a rule-based gameplay the execution of the branded brands through the game rules expose the gamer with the advantages of the brand showing the demonstration mode of brand integration, because this mode of brand integration provides the gamer with a unique experience related to the brand (e.g., driving a branded car in a car racing game). Similarly, in rule enacted gameplay brand integration can also be executed through illustrative mode through projecting the brand or brand as an in-game object (e.g., projecting the brand as an entity which stands for environmental safety and protection). In addition to this, in a rule enacted gameplay brand can also be fully integrated through showing the branded logo and jingles, or any other brand elements during the gameplay, showing the association perspective of brand integration. Advertising literature has shown adequate empirical support and stated that brand integration work as a pivotal element which influences the audience's brand-related evaluation and memory (e.g., Chowdhury, Olsen, & Pracejus 2008; Kinard & Hartman, 2013).

Following Schema Theory (Lynch & Schuler, 1994; Rumelhart, 1980) we explain why a rule enacted gameplay with high brand-game goal congruency under high brand integration directs the gamer to have more brand attention and memory. According to this theory, individuals use categories and schema to organize and structure information contained in their memories (Rumelhart, 1980). Linking this theory to rule enacted advergame, we presume that when gameplay allows the gamer to play a rule enacted game with high brand-game congruence, it will elicit their existing schema without much difficulty. In this condition, if the gamer is exposed to a game which fully integrates the brand, the gamer is bound to receive more brand-related information. This additional or new information with the existing schema will be naturally and mechanically processed without the need for any further cognitive difficulty. In contrast, if the brand is not fully integrated, individuals have to make an extra cognitive effort in an attempt to assimilate the information into the existing schema. In an advergame setting, this additional cognitive effort interferes with the gamers' primary goal (i.e., playing the game). In this case, the brand (that is the brand) carries less attention and memory (Lewis & Porter, 2010). Thus, we hypothesize that;

H4. Brand integration moderates the game rule-orientation \times brand-game goal congruence effects on brand attention, recall, and recognition, such that in a rule-oriented gameplay, exposure to high game-goal congruity combined with high brand

integration (low brand integration) develops high (low) brand attention, recall, and recognition.

2.8. Mediating role of flow experience

Past literature suggests that gamers' flow experience during the gameplay act as an intervening mechanism between the gamers' perception of game-related characteristics and their game or brand related evaluations (e.g., Nelson et al., 2006; Steffen et al., 2013). Csikszentmihalyi (1975) defined flow experience as a state in which the individuals autonomously focus on an activity for a long duration without subjectively experiencing the passage of time. It reflects in an individual's intrinsic motivation or enjoyment in an activity (Csikszentmihalyi, 1975). Thus, if the individual experience a state of flow from an activity, then this activity will elicit a sense of happiness, which in turn leads to positive evaluations and continuous immersion in the activity. In advergame setting, the very nature of advergame, such as voluntariness, fun, entertainment, playing the game for its own sake aside from any benefits, and the game's competitive nature that triggers the instinct to win are essential characteristics which direct the game player's game flow experience (Caillois, 2001). Studies also supported that in advergames, flow experience is generated because of a special level of challenge evoked by the game to the game player (Hoffman & Novak, 1996; Mathwick and Rigdon 2004; Novak, Hoffman, and Yung 2000). For example, Steffen et al. (2013) found that the challenge evoked by the difficulty level of gameplay create flow experience. In short, computer games, in particular, are regarded as a means to evoke the status of flow with a high propensity (Schneider and Cornwell 2005).

In this study, following excitation transfer theory (Zillmann, 1971) we explain the mediating role of flow experience between the above said three-way interactive effects and the gamers' brand related outcomes, such as attention and memory. This theory indicates that positive arousal associated with the experience of the advertisement can be assigned to other simultaneously existent stimuli, thus activating a positive perception of those stimuli by the observer (Zillmann, 1971). Accordingly, we argue that a rule-oriented brand-goal congruent game with high game autonomy (or high brand integration) creates more intrinsic motivation and enjoyment in the gameplay. This, in turn, leads to developing more favourable flow experience concerning the gameplay and results in more favourable brand related outcomes, such as higher brand attention and memory. This favourably perceived flow increases the brand-related attention and memory because the flow serves as the positive arousal related to playing the advergame, and this positive perception might be transferred to the advertised brand, which poses a simultaneously existent stimulus (Steffen et al., 2013). On the contrary, a no rule oriented brand-goal incongruent game with low game autonomy (or low brand integration) reduces the gamers' intrinsic motivation and experiences, which in turn reduces the flow experience and therefore direct to create a reduced level of brand-related outcomes, such as brand attention and memory (See Fig. 1). Thus, we propose the following hypotheses:

H5a. Game flow experience positively mediates the interaction effect of game rule \times brand-game goal congruity \times brand autonomy on gamers' brand attention, recall, and recognition.

H5b. Game flow experience positively mediates the interaction effect of game rule \times brand-game goal congruity \times brand integration on gamers' brand attention, recall, and recognition.

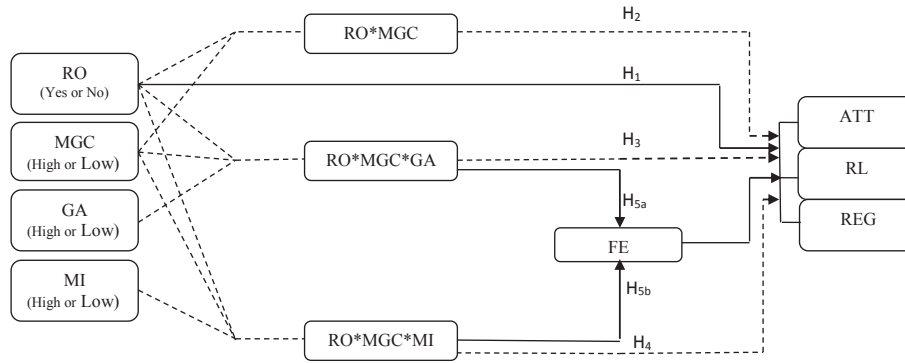


Fig. 1. Conceptual Framework, proposed process, and hypotheses. Note: RO = rule orientation, MGC = message-game goal congruence, GA = game autonomy, MI = message integration, FE = flow experience, ATT = attention, RL = recall, REG = recognition. The dotted line shows the moderating relationships.

3. Study 1

3.1. Methodology

In study 1, we manipulated three factors utilizing a between-subject measures design to examine the effect of these factors on games' brand attention and memory. The between-subject factors were: rule orientation (yes or no), brand-game goal congruence (high or low), and game autonomy (high or low). The outcome variables measured were brand attention, recall, and recognition.

3.1.1. Procedure

As part of the first experiment, an open invitation was forwarded to 1000 graduate and postgraduate students of a large Indian University via student study groups, group e-mails, and social networking platforms including Facebook and Twitter. In this invitation, we informed the potential participants about the nature of the study. In addition, we also asked the interested participants to complete a short online survey covering their interest to participate in a gaming study, media habits, prior gaming experience, convenient date and time of study participation. Within 30 days, we received 547 participation confirmations. Upon confirmation, 200 students were randomly selected and informed about the date, time and place of the study.

The experiment was conducted in the University computer lab. Upon arrival, these participants were randomly allocated to the individual computer consoles. In their respective seats, they received a cover containing a game CD, instruction manual, and a survey form. Before the gameplay, all the participants were directed to read the instruction manual carefully, and then instructed to install the game on their respective computers using the given CD. After the successful installation of the game, they were asked to answer the questions capturing the covariate (e.g. gamers' mood and prior game playing experience). Then, they were directed to play the game and complete the game within a time frame of 15 min. After the gameplay, these participants were instructed to close their respective computers. Then, these participants completed the given survey form measuring the manipulations, outcome variables, demographics and other related information. Finally, the study participants were debriefed and thanked for their active participation.

3.1.2. Participants

The majority of the study participants were graduate students (54.1%), and the rest of them were postgraduate students (45.9%). The age of these selected study subjects varied from 18 to 28 years, with a mean age of 23 years ($SD = 5.2$). In this selected list, male

participants constituted 62%, and the rest of them were females (38%). The prior game playing experience of these participants ranged from last 3 months to 12 years (less than 1 year = 16%, 1–2 years = 39%, 2–3 years = 25%, more than 3 years = 20%). The majority of the study participants stated that they prefer to play through online mode (58%), and 42% of them prefer to play through offline mode. Their regular game playing frequency ranges from minimum one gameplay in a week to twelve gameplays (one to three game plays = 23%, four to six gameplays = 47%, six to nine gameplays = 17%, and more than ten gameplays = 13%).

3.2. Game stimuli

3.2.1. Stimulus creation

To perform the study manipulations we developed a game, THE GANGSTER. In this game, the game player assumed to play the role of a gangster who just arrives in a city and is in debts with his boss. When the game begins the game takes the gamer to a fictional city. In the game, the gamer is allowed to travel in the city using various vehicles, ranging from cars, motorbikes or even helicopters. The gamer is also allowed to use various kinds of weapons to achieve the game goal. As a gangster, the major goal of the gamer is to raise as much as money to pay back his debts and to take control of the city.

In the rule-oriented game condition, the game player received a set of intrinsic (complete some mission) and the extrinsic rules (pay back debts). These are compulsory rules to achieve the game goal. Totally we provided five different compulsory sets of rules throughout the game. In addition, in this game condition, the players are also allowed to define their own rules in order to achieve the game goal (collect adequate money to purchase the weapons). In the game, we provided two different types of player controlled rules. Moreover, in this game condition, the gamers expected to strategize the ways to make money based on these rules. The rules state certain ways of earning money by completing or confronting with some illegal tasks such as plundering, trafficking drugs, etc. In this game condition, the gamer is allowed to get money to achieve the game goal only through following these rules, even if they might want to do any other job to earn legal money. In short, in rule orientated condition, the gameplay emerged from the rules and these rules direct the gamer to achieve the game goal. However, in no rule orientation game, no such rules were set in order to play or achieve the game goals. More specifically, in this game condition, the game players received a game without carrying any game rules, and this game allowed the gamer to play the game and instructed the player to complete the game to achieve the game goals within the prescribed time limit.

Since in the rule-oriented game the rules were set to achieve the game goals, the manipulation of brand-game goal congruence in rule oriented game condition was carried out through manipulating the brands that carry congruence or incongruence with the game goals under consideration. Thus, in rule oriented brand-game goal congruence condition, in all the game rules we attached a suitable brand (seven rules seven brands), where the gamers are allowed to interact with the attached brand. The sequential execution of the rules through these brands expected to generate favourable game goals. Therefore, it is presumed that there is a high congruence between the brands versus the game goals. For example, while executing a mission of bank robbery, the respondents received an exposure of a bank brand 'ABS international Bank' in highly congruent condition. Execution of a robbery (a rule) through the bank expected to generate game goals, therefore high brand-game goal congruence. Contrary to this, in rule oriented brand-game incongruent condition, we presented seven brands which were dissimilar or not helping them to achieve the game goals. Therefore, it is presumed that there exists incongruence between brands versus game goal.

High brand-game goal congruence with no rule orientation manipulation was introduced through providing a game without any rules, however, the participants during the gameplay exposed to the brands that match with the goal of the game. Since in the game the central theme is all about a gangster's attempt to make money, the brands introduced in this condition were matching with the expected activities of a gangster to achieve the goal of the game (e.g., 'ABS International Bank', 'PURE DIAMONDS', 'DEE CASINOS', etc). In total, we introduced seven different brand names, and all these brand names were introduced in sequence within the gameplay. In no rule oriented brand-game goal incongruent condition, no such rules were introduced, and at the same time, the brands exposed were completely dissimilar with the goal of the game.

Finally, in all the above conditions to achieve game autonomy (high versus low) various changes were incorporated. In high autonomous gameplay, the games were designed in such a manner that the brands we incorporated in the conditions completely inherent in the game and therefore the game do not demand any additional information (textual or contextual) in order to make sense of the brand. On the other hand, in low autonomy gameplay games were designed in such a manner that it allows the gamer to seek additional information which is not present in the game. In low autonomous gameplay, the game player during the execution of the rule directed to search additional textual or contextual information to continue with the game. For example, for a rule execution of a bank robbery, the gamer got redirected to a window to seek information about the banks available in the city. The same was applied to all the rule executions in the game. However, in high autonomy gameplay no such information provision was demanded, rather during the execution of the rules, the facilities required were introduced sequentially in the game. Therefore, in high autonomous gameplay, everything during the gameplay was introduced in a self-explanatory manner. However, in the low autonomous game condition, the gamer directed to search for information for completing the gameplay.

3.2.2. Pretesting

In total, the selection of stimuli for three different experimental variables, each carrying two levels (*rule orientation*: yes versus no; *brand-game goal congruence*: high versus low; *game autonomy*: high versus low) generated twelve different versions of the game. For example, the first condition exposed the participants with high brand-game goal congruence in high game autonomy mode. In this condition, the participated gamers were allowed to perform the

rules to complete their game and exposed the brands matching the game goal and also received high game autonomy. After the development of these game conditions, we pre-tested all versions using 120 University students. In each game condition, 10 participants were exposed. The selected subjects were randomly allocated to the game conditions and instructed to play these games on their given computer consoles. Then, these subjects were asked to rate the extent to which they believe the game which they played imitate the life of a gangster (1 = 'not at all believable' to 7 = 'highly believable'). In addition, these subjects were also asked to indicate the extent to which they personally like to play the given game (1 = 'low liking' to 7 = 'high liking'). The pre-test results supported that in all the conditions the believability score and the likeness score were above the average (3.5). Thus, we confirmed that there were no issues in game design and implementation.

3.3. Measures

3.3.1. Independent variables

The participants rated the rule orientation of the game on five-item seven-point Likert-type scales (1 = 'totally disagree', to 7 = 'totally agree', $\alpha = 0.89$). These items covered their extent of agreement regarding the rule enactment which they experienced during the gameplay. By averaging the scores of these five items we created an index score of gamers' experienced rule orientation from the game plays (See the [Appendix](#)).

In line with [Kirmani and Shiv \(1998\)](#), we measured gamers' perceived brand-game goal congruence. During the measurement, the subjects rated the perceived congruence between the brand presented in the game and the game goals (i.e., ABS International Bank versus pay back the debts) through three seven-point bipolar adjective scales ($\alpha = 0.90$).

The extent of autonomy imparted by the game to the game player was measured through two item seven-point Likert-type scales (1 = 'totally disagree', to 7 = 'totally agree', $\alpha = 0.87$). These items asked the participants about their perception regarding the autonomy they experienced during the gameplay.

3.3.2. Dependent variables

Following [Chaffee and Schleuder \(1986\)](#), we measured gamers' brand attention. In this measurement, the study subjects were asked to rate the extent of attention they have paid to the brand presented in the game on a three bipolar item seven-point scale (1 = 'little' to 7 = 'a lot', $\alpha = 0.81$).

To measure gamers' brand recall, we followed the measurement procedure suggested by [Lee and Faber \(2007\)](#). Since, in this study, we presented and exposed the gamer to seven different brand names we asked the study participants to recall and list the noticed brand names. After the measurement, two independent coders coded the listed brand names. If any of the brand names were not listed or any names presented in the advergame was wrongly listed, then it was coded as an incorrect response. On the other side, the response was coded as correct if it was listed as in the way presented in the game. Thus, the number of correct responses ranges from 0 to 7 (e.g., 0 = 'wrong response', 1 = 'one correct response', 7 = 'all the responses are correct'). The inter-coder reliability through Scott's π supported a sufficient score (Scott's $\pi = 0.95$).

Gamers' brand recognition was measured through three items pertaining to the embedded brands in the game ([Van Reijmersdal, Neijens, & Smit 2007](#)). The first item measured their ability to recognize the brand logo of all the seven brands exposed during the gameplay. The second item captured their ability to recognize the correct colour pattern of the presented brand logos in the game. Finally, we also asked the participants to recognize and list the product category of these seven brand logos presented in the game.

After capturing these measurements, we applied a coding scheme using two independent coders. These coders coded the responses (incorrect responses received a score of 0, and the correct response received a score of 1). Thus, for each item, the minimum score was 0, and the maximum score was 7. For example, in the first item if the respondent provided a correct response of three, then his score for the item is 3. The inter-coder reliability check supported that the coding carries an adequate reliability (Scott's $\pi = 0.92$). Thus, these three items scores were averaged to get a composite index of brand recognition.

3.3.3. Mediator

Gamers' perception of game flow experience was measured using ten items seven-point Likert-type scales (1 = 'totally disagree' to 7 = 'totally agree', $\alpha = 0.90$). The scale used to measure flow experience was adapted from Rheinberg and Vollmeyer (2003). These ten items were averaged to get an index of gamers' flow experience.

3.3.4. Covariates

Before the actual gameplay, we captured the covariates based on prior literature. Following, Lee and Faber (2007) argument that gamers' prior gaming experience may influence their ability to process in-game advertisements, we captured their prior gaming experience through an item, and it captured their extent of prior game playing experience (1 = 'highly inexperienced' to 7 = 'highly experienced'). Following the suggestion of Steffen et al. (2013), we presumed that the triggered mood of the gamer during the gameplay may confound the study results. Therefore, we incorporated player's mood as a covariate in our study and measured it using a single item (1 = 'very bad' to 7 = 'very good').

3.4. Study results

3.4.1. Manipulation checks

Before the formal test of hypotheses, we tested the manipulations through three different independent t-tests. The manipulation test of rule orientation revealed that there exists a significant difference between rule oriented game condition versus no rule oriented game condition (Mean (rule orientation) = 5.10, Mean (no rule orientation) = 2.65, $t = 11.32, p < .01$). These results supported the success of rule orientation as a manipulated variable in the study. Then, we tested the manipulation of brand-game goal congruence. The test results revealed a significant difference in the mean scores (Mean (high congruence) = 4.88, Mean (low congruence) = 2.13, $t = 8.12, p < .01$), supporting the success of brand-game goal congruence manipulation. Finally, we tested the manipulation of game autonomy. The examination of the manipulation test scores revealed that in high autonomy game condition subjects reported high scores compared to the low autonomy game condition, and it is statistically significant (Mean (high autonomy) = 5.33, Mean (low autonomy) = 2.34, $t = 16.12, p < .01$). Thus, all these three test results supported the successfulness of the study manipulations.

3.4.2. Tests of hypotheses

We performed a 2 (rule orientation: yes or no) \times 2 (congruence: high or low) \times 2 (game autonomy: high or low) between-subjects multivariate analysis of covariance (MANCOVA) with brand attention, brand recall, and brand recognition as the dependent measures. In this model, we included game playing experience and gamers' mood as covariates. The test of relevance of covariates in the model revealed that game players' game playing experience was not carrying any statistical significance ($Wilk's \Lambda = 0.99, F_{(3, 191)} = 1.02, p > .01$), and it was not shown any significant interaction with the manipulated variables, such as rule orientation

($Wilk's \Lambda = 0.89, F_{(3, 191)} = 1.45, p > .01$), brand-game goal congruence ($Wilk's \Lambda = 0.94, F_{(3, 191)} = 1.33, p > .01$), and game autonomy ($Wilk's \Lambda = 0.94, F_{(3, 191)} = 1.33, p > .01$). Further, the test of mood as a covariate also rejected the claim ($Wilk's \Lambda = 0.99, F_{(3, 191)} = 1.02, p > .01$), and indicated that gamers' mood was not carrying any interaction with the manipulated variables, such as rule orientation ($Wilk's \Lambda = 0.89, F_{(3, 191)} = 1.45, p > .01$), brand-game goal congruence ($Wilk's \Lambda = 0.94, F_{(3, 191)} = 1.33, p > .01$), and game autonomy ($Wilk's \Lambda = 0.94, F_{(3, 191)} = 1.33, p > .01$). This rejected the claim of including prior game playing experience and gamers' mood as the relevant covariates. Thus, we removed these two variables from the model and performed a multivariate analysis of variance (MANOVA).

In support with H1, the test results supported a significant main effect of rule orientation on gamers' brand attention (Mean: (rule orientation) = 3.78, Mean: (no rule orientation) = 2.31), brand recall (Mean: (rule orientation) = 3.69, Mean: (no rule orientation) = 2.41), and brand recognition (Mean: (rule orientation) = 3.99, Mean: (no rule orientation) = 2.38, $Wilk's \Lambda = 0.45, F_{(3, 194)} = 63.00, p < .01$). The follow-up ANOVAs also supported that rule orientation of the game significantly influences players' brand attention ($F_{(1, 196)} = 101.06, p < .01$), brand recall ($F_{(1, 196)} = 76.2, p < .01$), and brand recognition ($F_{(1, 196)} = 83.23, p < .01$). Thus, we got statistical support for H1, stating that use of games rules (versus no rules) differently influences gamers' brand attention and memory (See Table 1).

In support of the study proposition as mentioned in H2, the multivariate two-way interaction effect of rule orientation \times brand-game goal congruence revealed a significant effect ($Wilk's \Lambda = 0.36, F_{(6, 782)} = 24.50, p < .01$). This is also supported by univariate test results on brand attention ($F_{(1, 196)} = 97.29, p < .01$), brand recall ($F_{(1, 196)} = 100.86, p < .01$), brand recognition ($F_{(1, 196)} = 79.81, p < .01$). The follow-up contrast test revealed that in rule oriented game condition, an exposure to high brand-game goal congruence (versus low brand-game goal congruence) got a statistical significance ($Wilk's \Lambda = 0.09, F = 282.10, p < .01$). As shown in Table 2, the examination of the interaction means supported that in rule oriented game play, an exposure to high brand-game goal congruence (versus low brand-game goal congruence) strengthened the brand attention (Mean: (rule oriented game with high congruence) = 4.10, Mean: (rule oriented game with low congruence) = 2.90), brand recall (Mean: (rule oriented game with high congruence) = 4.21, Mean: (rule oriented game with low congruence) = 2.93), brand recognition (Mean: (rule oriented game with high congruence) = 4.38, Mean: (rule oriented game with low congruence) = 2.50). Thus, we got substantial statistical evidence to support H2, and the study concluded that an exposure to rule orientation with high brand-game goal congruence strengthens the gamers' brand attention and memory (see Table 3).

In support with our prediction in H3 (See Fig. 2a–c), the test results revealed a significant three-way interaction effect on outcome variables ($Wilk's \Lambda = 0.91, F_{(6, 782)} = 6.82, p < .01$). Further, the examination of the univariate test results also supported in

Table 1
Multivariate and univariate ANOVA results (Study 1).

	MANOVA	ANOVA		
	F (df)	Attention F (df)	Recall F (df)	Recognition F (df)
RO	63.0 (3194)*	101.1 (1196)*	76.2 (1196)*	83.2 (1196)*
MGC	26.0 (3194)*	11.5 (1196)*	21.0 (1196)*	13.1 (1196)*
GA	21.1 (3194)*	10.9 (1196)*	15.3 (1196)*	13.2 (1196)*
RO \times MGC	24.5 (6782)*	97.29 (1196)*	100.86 (1196)*	79.81 (1196)*
RO \times MGC \times GA	6.82 (6782)*	4.57 (6392)*	7.11 (6392)*	4.81 (6392)*

* $p < .01$, values in the parentheses shows df.

Table 2
RO (yes versus no) on brand attention and memory by MGC (high versus low).

Dependent variables		MGC: High	MGC: Low	F tests ^a
Attention	RO: High	4.10	2.90	282.1*
Recall		4.21	2.93	
Recognition		4.38	2.50	

* $p < .01$.
^a Shows multivariate contrast test (F test) results, values inside the cell (excluding the F values) shows univariate interaction means.

favour of the multivariate test results stating that the three-way interaction is significant to predict gamers' brand attention ($F_{(6, 392)} = 4.57, p < .01$), brand recall ($F_{(6, 392)} = 7.11, p < .01$), and brand recognition ($F_{(2, 392)} = 4.81, p < .05$). In addition, the pre-planned contrast test results revealed that in rule oriented game condition an exposure to high brand congruence facilitating high game autonomy (versus low game autonomy) possessed a significant difference ($Wilks's \Lambda = 0.41, F = 82.00, p < .01$). It indicated that in a rule oriented high brand-game goal congruent game providing high level of game autonomy (versus low level of game autonomy)

strengthens gamers' brand attention (Mean: (rule oriented game, high congruence, and high autonomy) = 4.90, Mean: (rule oriented game, high congruence, and low autonomy) = 3.98), brand recall (Mean: (rule oriented game, high congruence, and high autonomy) = 5.19, Mean: (rule oriented game, high congruence, and low autonomy) = 4.02), and brand recognition (Mean: (rule oriented game, high congruence, and high autonomy) = 5.33, Mean: (rule oriented game, high congruence, and low autonomy) = 4.03). This supported H3 stating that under rule oriented high brand-game goal congruent condition, an exposure to high game autonomy game strengthens the gamers' brand attention and memory.

In addition, we also tested the mediating role of flow experience between the above said three-way interaction effect and gamers' brand attention, memory (H5a). To test this, we followed PROCESS Model 11 (Hayes, 2013, 2015) with 10,000 bootstrap samples. The examination of the conditional indirect effect revealed that in rule oriented gameplay (versus no rule oriented gameplay), an exposure to high brand-game goal congruence with high game autonomy generates positive brand attention (Indirect effect = 0.18, 95% bootstrap CI [0.12, 0.23]), brand recall (Indirect effect = 0.16, 95% bootstrap CI [0.06, 0.25]), and brand recognition (Indirect effect = 0.11, 95% bootstrap CI [0.07, 0.14]). However, in rule oriented

Table 3
RO: high × MGC: high on brand attention and memory by GA: high (low).

Dependent variables		MGC: High & GA:High	MGC: High & GA:low	F tests ^a
Attention	RO:High	4.90	3.98	82.00*
Recall		5.19	4.02	
Recognition		5.33	4.03	

* $p < .01$.
^a Shows multivariate contrast test results of high RO × high MGC × (high versus low) GA. Values inside the cell (excluding the F values) shows univariate interaction means.

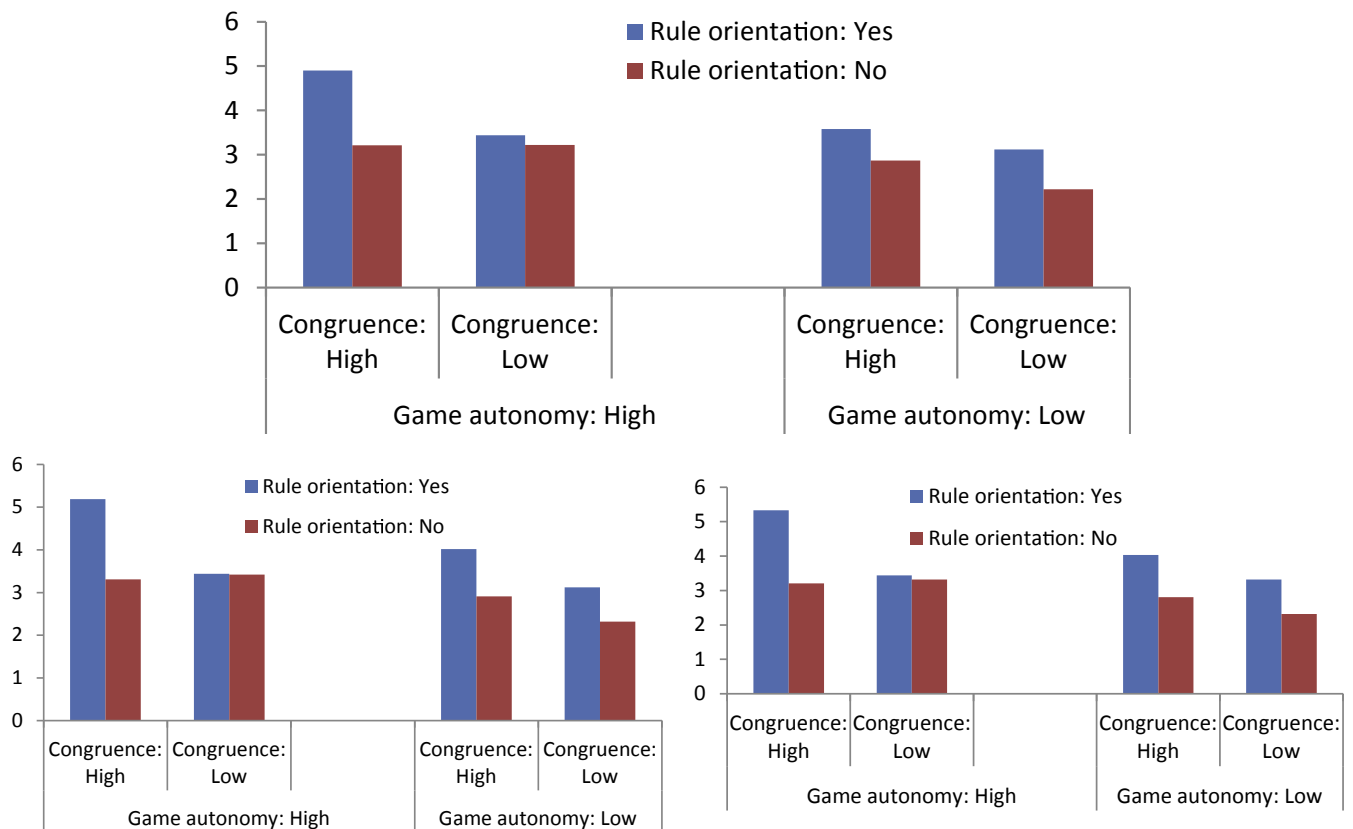


Fig. 2. a: Rule orientation × congruence × game autonomy on brand attention, b: Rule orientation × congruence × game autonomy on brand recall, c: Rule orientation × congruence × game autonomy on brand recognition.

gameplay (versus no rule oriented gameplay), an exposure to low brand-game goal congruence = with low game autonomy did not show any significant effect on brand attention (Indirect effect = -0.05 , 95% bootstrap CI [$-0.10, 0.008$]), brand recall (Indirect effect = -0.04 , 95% bootstrap CI [$-0.09, 0.01$]), and brand recognition (Indirect effect = -0.06 , 95% bootstrap CI [$-0.13, 0.01$]). This indicated that an exposure to rule orientation (versus no rule orientation) along with high brand-game goal congruence and high game autonomy direct the gamers to generate stronger brand attention and memory through flow experience. However, an exposure to rule orientation (versus no rule orientation) along with low brand-game goal congruence and low game autonomy do not influence the gamers' brand attention and memory through flow experience. These results supported H5a.

4. Study 2

4.1. Methodology

4.1.1. Design, sample, and procedure

The study 2 we designed as an extension of Study 1. In this study, instead of game autonomy, we manipulated brand integration and followed a between-subject measures design to examine the effect of three-way between-subject factors on gamers' brand attention and memory. The between-subject factors were: rule orientation (yes or no), brand-game goal congruence (high or low), and brand integration (high or low). A sample of 200 student gamers was used in this experiment. Similar to study 1, the majority of the study participants were graduate students (62.5%), and the rest of them were postgraduate students (37.5%). The age of these selected study subjects varied from 18 to 31 years, with a mean age of 24.5 years ($SD = 5.4$). In this selected list, male participants constituted 67%, and the rest of them were females (33%). The stimulus and data collection procedure for this experiment was identical to the first experiment, with the following differences. First, game autonomy we kept constant in this experiment, however, we made manipulations in terms of brand integration. Following Chen and Ringel (2001), we manipulated brand integration through demonstration mode. In demonstration mode, we exposed the gamer with brands and instructed them to use it for a trial to feel the real experience of the brand (For example, before selecting the car we instructed the participants to experience the brand through a test drive). In high brand integration condition, we provided the gamer with an opportunity to experience the brand through this demonstration more before the actual use. However, no such demonstration experience was provided for gamers exposed to the low brand integration condition. Second, we measured their perceived brand integration as a manipulation check for understanding the success of manipulation imparted during the experiment. To measure the same, we adopted a single item scale from Kinard and Hartman (2013).

4.2. Study results

Before the formal test of hypotheses, we checked the manipulation of all the three manipulated variables. The manipulations tests of rule orientation and brand-game goal congruence supported the expectation and were consistent with study one. The manipulation test of brand integration using an independent t -test revealed that gamers exposed to high brand integration reported high mean scores in the brand integration measures (Mean = 4.81), compared to those who exposed to low brand integration (Mean = 2.11, $t = 8.22$, $p < .01$). These results supported that the study successfully executed the manipulated conditions.

Then a MANOVA with the three-way interaction of rule

orientation \times brand-game goal congruence \times brand integration on brand attention, recall, and recognition was examined to test the hypothesis 4 (H4). The test results revealed a significant three-way interaction effect these manipulated variables on the dependent variables ($Wilk's \Lambda = 0.93$, $F_{(6, 782)} = 8.87$, $p < .01$). In addition, the univariate test results also supported the multivariate test results stating that the three-way interaction is significant to predict gamers' brand attention ($F_{(6, 392)} = 6.57$, $p < .01$), brand recall ($F_{(6, 392)} = 7.66$, $p < .01$), and brand recognition ($F_{(2, 392)} = 3.91$, $p < .05$). Further, the pre-planned contrast test results (See Table 4) revealed that in rule oriented game condition, an exposure to high brand congruence facilitating high brand integration (versus low brand integration) carried a significant difference ($Wilk's \Lambda = 0.48$, $F = 52.00$, $p < .01$). This supported that in a rule oriented high brand-game goal congruent game providing high level of brand integration (versus low level of brand integration) strengthens gamers' brand attention (Mean: (rule oriented game, high congruence, and high brand integration) = 4.88, Mean: (rule oriented game, high congruence, and low brand integration) = 3.90), brand recall (Mean: (rule oriented game, high congruence, and high brand integration) = 5.22, Mean: (rule oriented game, high congruence, and low brand integration) = 4.01), and brand recognition (Mean: (rule oriented game, high congruence, and high brand integration) = 5.13, Mean: (rule oriented game, high congruence, and low brand integration) = 4.13). This supported the hypothesis H4 (See Fig. 3a–c), and inferred that under rule oriented high brand-game goal congruent condition, an exposure to high brand integration strengthens the gamers' brand attention and memory.

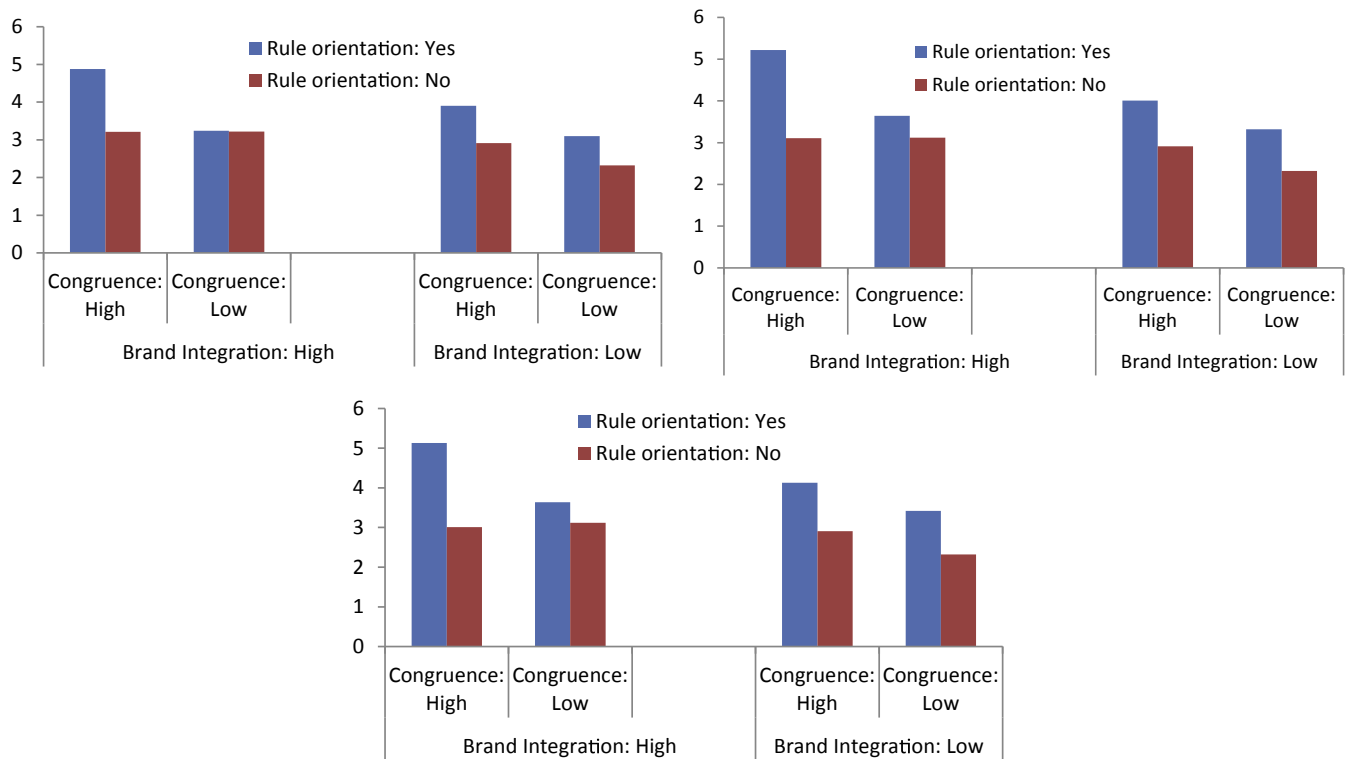
Further, we examined the mediating role of flow experience between three-way interaction effect of rule orientation \times brand-game goal congruence \times brand integration and the outcome variables (H5b). The conditional mediation analysis using the procedure as used in study one demonstrated that in rule oriented gameplay (versus no rule oriented gameplay), an exposure to high brand-game goal congruence along with high brand integration strengthens the gamers' brand attention (Indirect effect = 0.12, 95% bootstrap CI [0.04, 0.19]), brand recall (Indirect effect = 0.13, 95% bootstrap CI [0.03, 0.22]), and brand recognition (Indirect effect = 0.11, 95% bootstrap CI [0.01, 0.20]). On the contrary, we found that in rule oriented gameplay (versus no rule oriented gameplay), an exposure to low brand-game goal congruence along with low brand integration do not significantly influence the gamers' brand attention (Indirect effect = 0.03, 95% bootstrap CI [$-0.06, 0.12$]), brand recall (Indirect effect = 0.04, 95% bootstrap CI [$-0.05, 0.13$]), and brand recognition (Indirect effect = 0.02, 95% bootstrap CI [$-0.07, 0.11$]). These results indicated that when the gamers exposed with rule oriented game (versus no rule oriented game) in which the game expose a high brand-game goal congruence and facilitate a high brand integration, then the gamer develops a favourable flow experience perception, which in turn, direct the gamer to develop favourable brand attention and memory. However, this effect was not found significant in the case of a rule-oriented game (versus no rule oriented game) with low brand-game congruence and low brand integration. These findings support the hypothesis 5b.

5. General discussion

Executing the game in a rule-oriented mode is a unique game design and brand promotion strategy that is being increasingly used by game designers, media planners, and marketers (Juul, 2011). Yet, there is no research that looks into the effect of rule enacted advergame execution and the conditions which accentuate the effect of this rule orientation on gamers' brand attention and memory. In this context, we performed two experimental studies to examine the causal effect of this rule orientation and its boundary

Table 4RO: high \times MGC: high on brand attention and memory by MI: high (low).

Dependent variables		MGC: High & MI:High	MGC: High & MI:low	F tests ^a
Attention	RO:High	4.88	3.90	
Recall		5.22	4.01	52.00*
Recognition		5.13	4.13	

* $p < .01$.^a Shows multivariate contrast test results of high RO \times high MGC \times (high versus low) MI. Values inside the cell (excluding the F values) shows univariate interaction means.**Fig. 3.** a: Rule orientation \times congruence \times brand integration on brand attention, b: Rule orientation \times congruence \times brand integration on brand recall, c: Rule orientation \times congruence \times brand integration on brand recognition.

conditions which strengthen the game players' brand attention, recall, and recognition in advergame setting. In study 1, we demonstrated the effect of rule orientation (versus no rule orientation) on gamers' brand attention and memory. In support with schema congruity literature (e.g., Bartlett, 1932; Sorensen & Stanton, 2015), we found that rule orientation elicit gamers' brand related schemas more, which in turn strongly influences the gamers' brand attention and memory. Further, in this study, we showed how the use of brand-game goal congruence further strengthens the effect of rule orientation. From the results, in support of previous studies (e.g., Gross, 2010; Lee & Faber, 2007; Wise et al., 2008) we found that high brand-game goal congruence further strengthens the effect of rule orientation and strengthens the gamers' brand related outcomes, such as attention, recall, and recognition. This is because the congruence concerning the generated or existing schemas directs the gamer to strongly associate the brand embedded in the rules. In addition, we also demonstrated the conditional role of game autonomy on the simultaneous effect of rule orientation and brand-game goal congruence and in turn, brand attention and memory. The result supports that games with high autonomy (versus low autonomy) generate stronger brand attention and memory. Since the high game autonomy games are self-explanatory in nature, in this

condition exposing the game to a rule with high brand-game goal congruence directs the gamer to demand low cognitive resources to process the brand (Sweller, 1988; Sweller et al., 1998), which in turn likely to increase the gamers' brand attention and memory.

In study 2, we examined how brand integration influences the simultaneous effect of rule orientation and brand game goal congruence and in turn, brand attention and memory. From the results, we found that high level of brand integration help the gamer to assimilate the information into the existing schema. Thus, an exposure to a rule-oriented gameplay with high brand-game goal congruence and high brand integration strengthens the gamers' brand attention and memory. Finally, in both of these studies, we found support for the mediating role flow experience as an intervening mechanism which transfers the simultaneous effect of rule orientation and its boundary conditions and influences the gamers' brand attention and memory. This indicated that the rule orientation and the favourable conditions which strengthen the effect of this rule enactment in games generate the individual's intrinsic motivation or enjoyment during the gameplay (Csikszentmihalyi, 1975). This enjoyment or motivation related to the gameplay direct the gamer to generate the stronger level of brand-related outcomes, such as attention, recall, and recognition.

6. Theoretical implications

This study has several theoretical implications. First, broadly this study adds to the advergame literature by demonstrating the usefulness of a new mode of brand execution and rule orientation. More specifically, this study is first in its stream which examined the usefulness of rule orientation as a brand execution strategy and adds to the literature by identifying the conditions and mechanism which strengthens gamers' brand attention and memory. Second, although the existing literature in advergame has focused on the effects of congruity between the game and the brands presented (see: [Belanche, Flavián, & Pérez-Rueda, 2017](#)), this research provides a key contribution by extending this understanding; the current work shifts the focus from congruity in terms of the match between the brand and the game to congruity in terms of the brand-game goal. The current findings suggest that congruity between the brand and the game goal is necessary to strengthen the gamers' brand attention and memory. Third, our findings regarding the effect of game autonomy also a noteworthy contribution because the study adds to the literature that in rule oriented gameplay aimed to have stronger brand attention and memory, then the game should be completely self-explanatory in nature, and it should not allow the gamer to demand any external information. Because the need for external information increases their cognitive load and thereby reduces the brand attention and memory. Finally, our study enhanced the existing understanding of the role of brand integration in advergames (e.g., [Kinard & Hartman, 2013](#)) through showing how the brand integration can be used in rule-based advergames to generate stronger brand related outcomes. Thus, this study direct future researchers that brand integration in various forms, such as demonstration, illustration, and association play a pivotal role in shaping gamers' brand attention and memory in rule oriented advergames.

7. Practical implications

The study findings indicate several managerial implications. First, to management practice, the results suggest that designing games in rule oriented mode and connecting the brands with these rules work as a major advergame design strategy to strengthen the game players' brand attention and memory. Moreover, the study findings indicated that allowing the gamers to execute the rules in the form of mandatory rules and gamer controlled rules facilitate the brands to create stronger brand attention, recall and recognition. Thus, this finding provides a valid direction to advergame designers, media planners, and marketers in terms of applying the new model of brand execution through games. In addition, the study also provides direction to marketers that when the game designed to communicate a brand, then the absence of rule orientation in their games weakens the brand attention and memory among the game players. In short, a very generic practical implication of this finding is that rule orientation in advergames is necessary to generate both game interests as well brand attention and memory.

Second, the study also provides direction for marketers in terms of further strengthening the effect game rule orientation and to enhance brand attention and memory of their brands in advergames. One such useful strategy is to develop the rule-oriented game in high brand-game goal congruence mode. Therefore, the advertisers are advised to see their brand (or brand) in terms of the game goals. If the brand is able to achieve the game goals, then it carries high congruence with the game goals. This goal congruence generates positive outcomes in the form of high brand attention, recall, and recognition. Therefore, the study findings indicated that before placing the brands in any rule oriented advergame, it is

important to confirm this goal congruence to achieve expected brand outcomes.

Third, the study findings direct the marketers that while designing rule oriented advergames it is important to design the games in a fully self-explained way (i.e., high level of game autonomy). This is because when the consumer engages in rule orientation to achieve the game goals, then presenting it in a high brand-game congruent mode help the gamer to process the brand information faster and quicker. However, presenting a brand in a low autonomous or less self-explanatory mode reduces their information processing, therefore, it hinders their brand attention, recall, and recognition. Thus, the study directed the media planners, game designers and marketers that in a rule-oriented, high brand-goal congruent game, integrating the brand in a fully autonomous way helps them to achieve a high level of brand attention, recall, and recognition.

Fourth, the study provides another important direction to marketers that other than game autonomy, there is another important game characteristic which plays a pivotal role to strengthen the brand attention, recall, and recognition in rule oriented advergames, i.e., brand integration. As we found in our study results, high level of brand integration through various modes (For example, demonstration, illustration, and association) helps to increase game attractiveness as well as brand effectiveness. Thus, the study suggests that to make the game and the embedded brand more attentive, recallable, and recognizable it is important to expose the brand in a highly integrated way. Thus, the game player does not feel a gap between gameplay and the brand embedded in the game.

8. Study limitations

As with all studies, the study findings are not free from limitations. First, the study participants were student gamers. However, in the actual scenario, advergames are targeted towards a large group of audience. Thus, we recommend that future researchers should replicate the study across different age groups. Second, another major limitation of the study is that the selected study participants belong to similar demographic profile, specifically in terms of education and computer experience. Therefore, to generate a broader perspective, and to achieve a higher level of external validity, we recommend to researchers to conduct further detailed studies using samples with a different demographic profile. Third, in a rule enacted gameplay other than the studied factors, there might be so many other factors (for example, brand richness, vividness, type of placements, etc.) which condition the effect of rule orientation and in turn, influence gamers' brand attention and memory. Future studies can look into these factors in rule oriented game setting to understand how these factors shape the effect of rule orientation, and in turn gamers' brand attention and memory. Fourth, the current study performed an experiment, wherein all the external factors which influence the gamers' gameplay was controlled. However, in a real game playing situation, gamers' game playing is influenced by the contextual and situational factors. Thus, future studies are needed to understand how these contextual and situational factors influence the gamers' game playing task and in turn their game playing experience. Moreover, it is also important to examine how these external factors shape the gamers' overall brand related attention and memory. Fifth, although we measured the mediating variables and the outcome variables through multi-items scales, during the analysis we created the average scores of these measures and used it as the measurement scores. This mode of index formation creates problems in capturing item wise measurement error. Thus, we recommend that future researchers should use a different analytical

approach to address this limitation so that an enhanced understanding can be made in this study. Sixth, an important limitation of the study is that there can be many other confounding variables which may occur due to the experimental conditions, which in turn influence the gamers' attention and memory. For example, during the time frame of 15 min, if a participant clears all the missions, he/she will be a more favourable status to answer all the questions about brand attention, recognition, and recall. However, if a participant could not clear all the missions, not because of his/her inexperience and less skill, but because of no RO, low MGC, low GA, low MI, or the combination of them, then he/she cannot remember all the brand names suggested in the experiments. Thus, it is possible that the exposure to these conditions may influence the participant's game performance, this in turn differently influence their attention and memory. Finally, as part of our study manipulation, we developed a game and exposed to the study participants about 15 min. This long duration game was exposed with an intention to elicit the rule orientation, autonomy and congruency and in turn to examine the simultaneous effect of these on gamers' attention, recall and recognition. However, it is observed that most of the real life games are short duration games. Though, we exposed a long duration game, we expect that the length of game play may differently influence the effect of the manipulated variables to create gamers' brand attention, recall and recognition. Thus, we recommend to future researchers to examine the conditional effect of length of gameplay between rule orientation as a game playing mode to create brand attention and memory in advergmes.

9. Conclusion

Our study findings indicate that embedding the brand brands in a rule-oriented game along with an exposure to those brands which carry a higher level of congruence with the game goal and provides the gamer with high game autonomy strengthens their brand attentiveness and memory. In addition, the study indicates that brand attention and memory can also be strengthened through enabling the game player to a rule-oriented mode of gameplay, wherein the game needs to provide an exposure to brands which carries high congruence with the game goal and impart a high level of brand integration. Enabling these conditions in a rule-oriented gameplay direct the gamer to develop flow experience and in turn better brand attention and memory. This suggests that different from the traditional game development perspective of developing the games in narrative modes, developing games with suitable rules and giving due importance to the boundary conditions mentioned in the study might be the way to move forward to strengthen brand effectiveness in advergmes.

10. Note

The current study developed and used the 15 min game for all experimental conditions because of two major reasons.

First, extant advergme studies used explicit memory measures of attention, recall and recognition as dependent variables (see: Sreejesh & Anusree, 2017; Vashisht & Royne, 2016) developed and used 15–20 min games in their studies. Thus, following the past studies in advergme literature, we developed the study games and exposed the same for 15 min.

Second, the extent marketing literature indicated that while using explicit memory measures (e.g., attention, recall and recognition), it is necessary to expose the information or message for an adequate time duration, because this allows the participants to think back to the previously exposed message, therefore they can recall and recognize the information or message presented

(Shapiro & Krishnan, 2001). Thus, considering this recommendation, exposing the game for 15 min is reasonable enough to create a brand cognition in gamers' mind.

Appendix

Prior gaming experience.

- Indicate the extent of your prior gaming experience (1 = 'highly inexperienced' to 7 = 'highly experienced').

Gamers' mood.

- How do you feel right now? (1 = 'very bad' to 7 = 'very good')

Rule orientation.

- I completed the gameplay and achieved the game goals through executing the rules given in the game (1 = 'totally disagree' to 7 = 'totally agree').
- During the gameplay, I was able to control my gameplay through the rules provided in the game (1 = 'totally disagree' to 7 = 'totally agree').
- During the gameplay, I executed the rules, which facilitated me to successfully complete all the game missions (1 = 'totally disagree' to 7 = 'totally agree').
- During the gameplay, I was able to control my game action by enacting my own rules provided in the game (1 = 'totally disagree' to 7 = 'totally agree').
- I received an adequate game control to achieve my game goals by enacting the game rules (1 = 'totally disagree' to 7 = 'totally agree').

Message-game goal congruence.

The brands presented in the game ... to achieve the game goals.

- Inappropriate/appropriate
- Fits poorly/fits well
- Does not match/matches well

Game autonomy.

- During the gameplay I experienced complete game autonomy, i.e., everything in the game was self-explanatory in nature (1 = 'totally disagree' to 7 = 'totally agree').
- During the gameplay, the game did not demand any additional textual/contextual information to complete the game (1 = 'totally disagree' to 7 = 'totally agree').

Brand attention.

- How much attention you have paid to the brand messages during their gameplay (1 = 'little' to 7 = 'a lot').
- How much you have focused on the brand messages which was embedded in the game (1 = 'little' to 7 = 'a lot').
- How much you have concentrated on the brand messages during their gameplay (1 = 'little' to 7 = 'a lot').

Brand recognition.

- Indicate whether the following brand logos were there in the gameplay ('yes' or 'no')
- If yes, indicate the correct colour pattern of these brand logos.
- If yes, indicate the product category of the brand.

Brand recall.

- List names of the brands which you have noticed during the gameplay.

Flow experience.

- I felt engaged in an optimum way.
- My thoughts and actions ran automatically.
- I did not notice how time passed.
- I had no trouble concentrating.
- I got immersed in the game.
- During the game, I knew what I had to do at every moment.
- I felt I was in control of the gameplay.
- Playing the game took me away from it all.
- I thought I'm not allowed to do any mistakes.
- I was worried about a failure.

Message integration.

- Indicate the extent to which the brands exposed in these games appeared to be incorporated into the game (1 = 'low level of integration' to 7 = 'high level of integration').

References

- Aaker, David A., Batra, Rajeev, & Myers, John G. (1992). *Advertising Management*. Englewood Cliffs, NJ: Prentice Hall.
- d'Astous, A., & Francis, C. (2000). A study of factors affecting consumer evaluations and memory of product placements in movies. *Journal of Current Issues and Research in Advertising*, 22(2), 31–40.
- Apperley, T. H. (2006). Genre and game studies: Toward a critical approach to video game genres. *Simulation & Gaming*, 37(1), 6–23.
- Bartlett, F. C. (1932). *Remembering: An experimental and social study*. Cambridge: Cambridge University.
- Belanche, D., Flavián, C., & Pérez-Rueda, A. (2017). Understanding interactive online advertising: Congruence and product involvement in highly and lowly arousing, skippable video ads. *Journal of Interactive Marketing*, 37, 75–88.
- Bellman, S., Kemp, A., Haddad, H., & Varan, D. (2014). The effectiveness of advergames compared to television commercials and interactive commercials featuring advergames. *Computers in Human Behavior*, 32(March), 276–283.
- Bogost, I. (2007). *Persuasive games: The expressive power of video games*. MIT Press.
- Caillois, R. (2001). *Man, play and games, trans. Meyer Barash*. Champaign: University of Illinois Press.
- Chaffee, S. H., & Schleuder, J. (1986). Measurement and effects of attention to media news. *Human Communication Research*, 13(1), 76–107.
- Chaney, I. M., Lin, K. H., & Chaney, J. (2004). The effect of billboards within the gaming environment. *Journal of Interactive Advertising*, 5(1), 37–45.
- Chen, J., & Ringel, M. (2001). *Can adverging be the future of interactive advertising. Fast Forward*. Available online: <http://www.kpe.com>.
- Choi, Y. K., Yoon, S., & Lacey, H. P. (2013). Online game characters' influence on brand trust: Self-disclosure, group membership, and product type. *Journal of Business Research*, 66(8), 996–1003.
- Chowdhury, R. M. M. I., Douglas Olsen, G., & Pracejus, J. W. (2008). Affective responses to images in print advertising: Affect integration in a simultaneous presentation context. *Journal of Advertising*, 37(3), 7–18.
- Colby, R. (2014). Writing and assessing procedural rhetoric in student-produced video games. *Computers and Composition*, 31(March), 43–52.
- Csikszentmihalyi, M. (1975). Play and intrinsic rewards. *Journal of Humanistic Psychology*, 15(3), 41–63.
- Fiske, S. T. (1982). Schema-triggered affect: Applications to social perception. In *Affect and cognition: 17th annual carnegie mellon symposium on cognition*. Hillsdale: Lawrence Erlbaum.
- Fiske, S. T., & Linville, P. W. (1980). What does the schema concept buy us? *Personality and Social Psychology Bulletin*, 6(4), 543–557.
- Fiske, S. T., Pavelchak, M. A., & Sorrentino, R. M. (1986). In E. T. Higgins (Ed.), *Handbook of motivation and cognition: Foundations of social behaviour* (pp. 167–203). New York, NY, US: Guilford Press.
- Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd). NY: McGraw-Hill.
- Friestad, M., & Wright, P. (1994). The persuasion knowledge model: How people cope with persuasion attempts. *Journal of Consumer Research*, 21(1), 1–31.
- Gangadharbatla, H., Bradley, S., & Wise, W. (2013). Psychophysiological responses to background brand placements in video games. *Journal of Advertising*, 42(2–3), 251–263.
- Gee, J. P. (2003). What video games have to teach us about learning and literacy. *Computer Entertainment*, 1(1), 20.
- Grigorovici, D. M., & Constantin, C. D. (2004). Experiencing interactive advertising beyond rich media: Impacts of ad type and presence on brand effectiveness in 3D gaming immersive virtual environments. *Journal of Interactive Advertising*, 5(1), 22–36.
- Gross, M. L. (2010). Advergames and the effects of game-product congruity. *Computers in Human Behavior*, 26(6), 1259–1265.
- Hayes, A. F. (2013). *The PROCESS macro for SPSS and SAS (version 2.13) [Software]*.
- Hayes, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research*, 50(1), 1–22.
- Hernandez, M. D., Chapa, S., Minor, M. S., Maldonado, C., & Barranzuela, F. (2004). Hispanic attitudes toward advergames: A proposed model of their antecedents. *Journal of Interactive Advertising*, 5(1), 74–83.
- Herodotou, C., Winters, N., & Kambouri, M. (2012). A motivationally oriented approach to understanding game appropriation. *International Journal of Human-computer Interaction*, 28(1), 34–47.
- Hoffman, D. L., & Novak, T. P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, 50–68.
- Juul, J. (2011). *Half-real: Video games between real rules and fictional worlds*. MIT press.
- Kinard, B. R., & Hartman, K. B. (2013). Are you entertained? The impact of brand integration and brand experience in television-related advergames. *Journal of Advertising*, 42(2–3), 196–203.
- Kirmani, A., & Shiv, B. (1998). "Effects of source congruity on brand attitudes and beliefs: The moderating role of issue-relevant elaboration. *Journal of Consumer Psychology*, 7(1), 25–47.
- Krugman, H. E. (1977). Memory without recall, exposure without perception. *Journal of Advertising Research*, 17(4), 7–12.
- Kuisma, J., Simola, J., Uusitalo, L., & Öörni, A. (2010). The effects of animation and format on the perception and memory of online advertising. *Journal of Interactive Marketing*, 24(4), 269–282.
- Lee, M., & Faber, R. J. (2007). Effects of product placement in online games on brand memory: A perspective of the limited-capacity model of attention. *Journal of Advertising*, 36(4), 75–90.
- Lewis, B., & Porter, L. (2010). In-game advertising effects: Examining player perceptions of advertising schema congruity in a massively multiplayer online role-playing game. *Journal of Interactive Advertising*, 10(2), 46–60.
- Lynch, J., & Schuler, D. (1994). The matchup effect of spokesperson and product congruency: A schema theory interpretation. *Psychology and Marketing*, 11(5), 417–445.
- Meyers-Levy, J., & Tybout, A. M. (1989). Chema congruity as a basis for product evaluation. *Journal of Consumer Research*, 16(1), 39–54.
- Moorman, M., Neijens, P. C., & Smit, E. G. (2002). The effects of magazine-induced psychological responses and thematic congruence on memory and attitude toward the ad in a real-life setting. *Journal of Advertising*, 31(4), 27–40.
- Nairn, A., & Fine, C. (2008). Who's messing with my mind? The implications of dual-process models for the ethics of advertising to children. *International Journal of Advertising*, 27(3), 447–470.
- Nelson, M. R., Keum, H., & Yaros, R. A. (2004). Advertainment or creep game players' attitudes toward advertising and product placements in computer games. *Journal of Interactive Advertising*, 5(1), 3–21.
- Nelson, M. R., Yaros, R. A., & Keum, H. (2006). Examining the influence of telepresence on spectator and player processing of real and fictitious brands in a computer game. *Journal of Advertising*, 35(4), 87–99.
- Novak, T. P., Hoffman, D. L., & Yung, Y.-F. (2000). Measuring the customer experience in online environments: A structural modelling approach. *Marketing Science*, 19(1), 22–42.
- Peters, S., & Leshner, G. (2013). Get in the game: The effects of game-product congruity and product placement proximity on game players' processing of brands embedded in advergames. *Journal of Advertising*, 42(2–3), 113–130.
- Rheinberg, F., & Vollmeyer, R. (2003). Flow-Erleben in einem computerspiel unter experimentell variierten Bedingungen [Flow experience in a computer game under experimentally varied conditions]. *Zeitschrift für Psychologie*, 211, 161–170.
- Rumelhart, D. E. (1980). On evaluating story grammars. *Cognitive Science*, 4(3), 313–316.
- Schank, R. C., & Abelson, R. (1977). *Scripts, goals, plans, and understanding*. Hillsdale, NJ: Erlbaum.
- Schacter, D. L. (1987). Implicit memory: History and current status. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13(3), 501–518.
- Schneider, L.-P., Systems, B., & Bettina Cornwell, T. (2005). Cashing in on crashes via brand placement in computer games: The effects of experience and flow on memory. *International Journal of Advertising*, 24(3), 321–343.
- Shamdasani, P. N., Andrea, J. S. S., & Tan, J. (2001). Location, location, location: Insights for advertising placement on the web. *Journal of Advertising Research*, 41(4), 7–21.
- Shapiro, S., & Krishnan, H. S. (2001). Memory-based measures for assessing advertising effects: A comparison of explicit and implicit memory effects. *Journal of advertising*, 30(3), 1–13.
- Smith, R. (2010). The long history of gaming in military training. *Simulation & Gaming*, 41(1), 6–19.
- Smith, J. H., & Just, S. N. (2009). Playful persuasion: The rhetorical potential of advergames. *Nordicom Review*, 30(2), 53–68.
- Sorensen, L. J., & Stanton, N. A. (2015). Exploring compatible and incompatible transactions in teams. *Cognition, Technology & Work*, 17(3), 367–380.

- Sreejesh, S., & Anusree, M. R. (2017). Effects of cognition demand, mode of interactivity and brand anthropomorphism on gamers' brand attention and memory in advergames. *Computers in Human Behavior*, 70, 575–588.
- Steffen, C., Mau, G., & Schramm-Klein, H. (2013). Who is the loser when I lose the game? Does losing an advergame have a negative impact on the perception of the brand? *Journal of Advertising*, 42(2–3), 183–195.
- Sweller, J. (1988). Cognitive load during problem-solving: Effects on learning. *Cognitive Science*, 12(2), 257–285.
- Sweller, J., Van Merriënboer, J. J. G., & Paas, F. G. W. C. (1998). Cognitive architecture and instructional design. *Educational Psychology Review*, 10(3), 251–296.
- Terlutter, R., & Capella, M. L. (2013). The gamification of advertising: Analysis and research directions of in-game advertising, advergames, and advertising in social network games. *Journal of Advertising*, 42(2–3), 95–112.
- Van Reijmersdal, E. (2009). Brand placement prominence: Good for memory! Bad for attitudes? *Journal of Advertising Research*, 49(2), 151–153.
- Van Reijmersdal, E. A., Neijens, P. C., & Smit, E. G. (2007). Effects of television brand placement on brand image. *Psychology and Marketing*, 24(5), 403–420.
- Van Reijmersdal, E. A., Rozendaal, E., & Buijzen, M. (2012). Effects of prominence, involvement, and persuasion knowledge on children's cognitive and affective responses to advergames. *Journal of Interactive Marketing*, 26(1), 33–42.
- Vashisht, D., & Royné, M. B. (2016). Advergame speed influence and brand recall: The moderating effects of brand placement strength and gamers' persuasion knowledge. *Computers in Human Behavior*, 63(October), 162–169.
- Vashisht, D., & Sreejesh, S. (2016). Are they really persuaded with the brand embedded in the game? Analyzing the effects of nature of the game, brand prominence and game-product congruence. *The Journal of Research in Indian Medicine*, 10(3), 249–264.
- Vashisht, D., & Sreejesh, S. (2017). Effect of nature of the game on ad-persuasion in online gaming context: Moderating roles of game-product congruence and consumer's need for cognition. *Internet Research*, 27(1), 52–73.
- Verberckmoes, S., Poels, K., Dens, N., Herrewijn, L., & De Pelsmacker, P. (2016). When and why is perceived congruity important for in-game advertising in fantasy games? *Computers in Human Behavior*, 64(November), 871–880.
- Wise, K., Bolls, P. D., Kim, H., Venkataraman, A., & Meyer, R. (2008). Enjoyment of advergames and brand attitudes: The impact of thematic relevance. *Journal of Interactive Advertising*, 9(1), 27–36.
- Wright, P., Friestad, M., & Boush, D. M. (2005). The development of marketplace persuasion knowledge in children, adolescents, and young adults. *Journal of Public Policy and Marketing*, 24(2), 222–233.
- Yang, M., Roskos-Ewoldsen, D. R., Dinu, L., & Arpan, L. M. (2006). The effectiveness of "in-game" advertising: Comparing college students' explicit and implicit memory for brand names. *Journal of Advertising*, 35(4), 143–152.
- Zillmann, D. (1971). Excitation transfer in communication-mediated aggressive behaviour. *Journal of Experimental Social Psychology*, 7(4), 419–434.