ESSAY 4: THE EFFECT OF NATURE OF ONLINE ADVERGAMES ON GAMERS’ AD-PERSUASION: MODERATING ROLES OF GAME INVOLVEMENT AND NEED FOR COGNITION

Abstract

This essay examines the effects of nature of advergame, game involvement and need for cognition on gamers’ ad-persuasion from attention and elaboration perspectives, addressing the research questions 1, 7 and 9. A 2 (nature of game) x 2 (game involvement) x 2 (need for cognition) between-subject measures design is used. 200 Indian undergraduate and graduate management students participated in the study. A 2 x 2 x 2 between-subject measures ANOVA is used to test the hypotheses. Results show that for a slow-paced advergame, low game-involvement results in higher ad-persuasion than high game-involvement whereas for a fast-paced advergame, there are no differences in ad-persuasion between high and low game-involvements. Also, for a slow-paced advergame with low game-involvement, subjects with high need for cognition report higher ad-persuasion than subjects with low need for cognition. These findings suggest to the advertisers and the game developers who design advergames, to consider a right mix of game specific factors, such as game speed and individual factors, such as game-involvement and need for cognition within a single advergame so that the implementation has the stoutest high impact on gamers’ ad-persuasion.
5.1. Introduction

Today, the formats and overall style of advertising have changed drastically. It is primarily because of the change in media consumption habits of consumers and the consequent growth of non-traditional advertising media, such as online games, mobile games, viral marketing, social networking etc. (Shields, 2009). As evident from a recent report by eMarketer (2014c), total time spent by US adults on digital media (mobiles and online) is 47.1% and on TV its only 36.5%. According to BBC news report (2014), the time spent by people in Britain on digital media is around 8 hours and 41 minutes per day, whereas the time spent on TV is only 4 hours a day. Consequently, brand placement in programs to sway audience’s minds and memory has become gradually prevalent (Balasubramanian, 1994; Karrh, 1998). Past studies indicated that exposure to brands placed in video games have an enormous effect on gamers’ brand memory (Cauberghe and Pelsmaker, 2010; Dias and Agante, 2011; Hernandez et al., 2010; Mallinckrodt and Mizerski, 2007). For example, Nelson (2002) conducted a study to examine the persuasive effects of brand placements in console video games, findings showed a brand recall of 25-30% in the short term and about 15% at a five-month delay. Unexpectedly, the growing practice of in-game brand placements has attracted little academic attention, as studies on brand placements is lopsided and inadequate (Balasubramanian et al., 2006), out of which most of the scholar works had centered mainly in mass media research (e.g., Russell, 2002).

However, the extant literature suggests that advergames are more involved and interactive in nature because of brands embedment in games (e.g., Ipe, 2008; Nelson, 2002). Due to the fact that messages are engrained within the game, it may be much tougher for advertisers to create an expected ad-persuasion for their embedded brands. Considering this issue, previous studies on advergames had focused on certain aspects of advergames to create ad-persuasion,
such as the advergame content (e.g., Lee et al., 2009; Moore 2006), the brand location in the
game, product involvement and thematic relevance (e.g., Grigorovici and Constantin, 2004;
Gross, 2010; Huang and Hsieh, 2011; Lee and Faber, 2007; Shen, 2013; Wise et al., 2008).
However, gamers’ ad-persuasion research integrating gamers’ attention and elaboration
perspectives is scarce.

The extant research emphasized the importance of game players’ attention to create ad-
persuasion. For example, Grigorovici and Constantin (2004) has argued that in case of in-game
advertising, game playing is the primary task whereas processing in-game brand placements is
the secondary task for players. Considering the likelihood that in an advergames, the gamers’
focus towards the embedded brand may be governed by the speed of advergame and it may
further be molded by other circumstantial and trait aspects as previous studies have shown the
influence of advergame playing on gamers’ visual processing (e.g., Reisenhuber, 2004). So,
when the nature of game is fast, the navigation, the pace of moving objects in game and the
playing task will need more attention than that in case of the slow advergames. This in turn
increases the mental burden in fast advergames than that in slow games. Therefore, this disparity
in mental burden due to variation in nature of game can impact one’s ad-persuasion.

Research also stated the role elaboration to create expected attention and subsequent ad-
persuasion. It is evident from past research that consumer’s attention capacity left to process in-
game brand placements is influenced by and conditional upon elaboration components (e.g.,
Krugman, 1983; McClung et al. 1985). Following insights from Elaboration Likelihood Model
(ELM: Cacioppo and Petty, 1979; Petty and Cacioppo, 1986) many researchers explained the
possible effects of game involvement as an elaboration component and revealed that brand
memory was lower when adults were highly involved with the movie or game in which the
brand was integrated (Grigorovici and Constantin, 2004; Nelson et al., 2006). Similarly, literature also stated the conditional influence of another important elaboration factor, need for cognition (NFC) on gamers’ ad-persuasion. As evident from previous literature that the variation in individuals’ NFC results in different levels of cognitive elaboration i.e. a person with high NFC will think more, cognitively he/she will elaborate more to find out the reasons for the observations which he/she made while doing certain activity unlike a person with low NFC who will not be able to elaborate much as his attention resources are less (Cacioppo and Petty, 1979).

However, the relationship between the nature of game and the ad-persuasion of gamers and the underlying conditions which influence this relationship in attention and elaboration perspectives, has never, to the authors’ knowledge, been formally investigated in previous studies. Hence, the principal objective of the present research is to investigate how speed of the game (hereafter called nature of game) affects gamers’ ad-persuasion under specific contextual and individual elaboration conditions, such as game involvement and NFC in the context of advergames. The essay reports the result of an experimental study conducted in India, exploring the cause and effect relationship between nature of game-ad-persuasion, and its underlying conditions using Limited Capacity Model of Attention (LCM: Kahneman, 1973) and ELM (Cacioppo and Petty, 1979; Petty and Cacioppo, 1986). The results reported in this paper is part of a big project examining the different attention and elaboration elements of online advergames and its effect on gamers’ attitude, recall and behavior.

The remainder of the paper is organized as follows. In next section we develop a conceptual model based on LCM (Kahneman, 1973) and ELM (Cacioppo and Petty, 1979; Petty and Cacioppo, 1986) as well as a series of hypotheses. This is followed by a description of the research methodology adopted. The results are presented subsequently followed by the
5.2. Hypotheses Development

To explain the causal relationship between study variables, first we will establish the case that nature of game plays as an important cause to create gamers’ ad-persuasion and argue that nature of the game cause variation in ad-persuasion under different game involvement conditions. Next, we explain the simultaneous influence of nature of game and game involvement on ad-persuasion for gamers with different NFC conditions.

5.2.1. Nature of Game and Game-Involvement

In this essay, we define game speed as the speed in terms of steering, the pace of moving objects in the game and the playing task that gamers experience while playing the game. In this study, we have explained the relationship between nature of game and ad-persuasion though LCM (Kahneman, 1973; Lynch and Srull, 1982). According to this theory, people can have a limited sum of mental resources required for message processing at a given point of time. While performing multitasks at a time, one’s attentional capacity gets split into two parts: one is for the primary task and remaining is used for secondary task. Capacity used for secondary task is the spare capacity. In the context of advergames, playing game is the primary task for gamers and processing in-game advertising is a secondary task for them (Grigorovici and Constantin, 2004). The more complex or difficult the primary task is, more amounts of mental resources will be required to process it and hence, less mental resources will be available for secondary task (Lavie, 1995; Lavie and Cox, 1997). In case of advergames, perceptual load will be higher for fast paced games than slow games as fast paced games are more complex than slow paced games (Green et al., 2010). Thus, more attentional capacity will be used for game playing in case of fast
games than slow games. As a result less spare capacity will be available for fast games, whereas spare capacity required to process in-game placements in case of slow games will be more.

Studies on program involvement reveal that when a consumer is highly involved with a program/game, the game playing task becomes the primary focus for the individual and its focus on in-game brand placement reduces as the spare capacity left to process in-game placements is very less. The concept of involvement has been theorized in different ways, such as process involvement (Greenwald and Leavitt, 1984) and a state grounded in motivation (Cohen, 1983; Pham, 1992). The current study theorized gamers’ program involvement and conceptualized it as a motivational aspect of viewers’ involvement (Tavassoli et al. 1995) and as a state of motivation, arousal or interest towards a program or event that is evoked by particular motives (Rothschild, 1984). The active interest in, engagement with and commitment to a game or an event define program involvement construct (Laverie and Arnett, 2000). When a gamer is highly involved with the game, he/she give more attention to game play. With this less spare capacity, the gamer cannot cognitively elaborate much about ad embedded in the game. However, when it is low game involvement, then the consumer’s attentional capacity left to process in-game brand placements is high which in turn increases its cognitive elaboration and thus, it results in high brand recall than that in high game involvement case (Krugman, 1983; McClung et al. 1985).

Thus, based on the above arguments, it is predicted that for a slow paced advergame, low game involvement condition will result in high ad-persuasion than the high game involvement condition. Also, for a fast paced advergame, we expect that there is no difference in ad-persuasion between high game involvement and low game involvement conditions. Hence, the following hypotheses are formulated:
**H1a:** For a slow paced advergame, low game involvement condition will result in high ad-persuasion than the high game involvement condition.

**H1b:** For a fast paced advergame, there is no difference in ad-persuasion between high game involvement and low game involvement conditions.

### 5.2.2. NFC as a Moderator

An individual's NFC is defined as “a need to structure relevant situations in meaningful, integrated ways and a need to understand and make reasonable the experiential world” (Cohen et al., 1955, p. 291). It is also described as a person’s intrinsic enjoyment and enthusiasm to get involved in effortful cognitive information processing (Petty and Cacioppo, 1986). As evident from persuasion literature, individuals’ variations in NFC can expound a variety of effects (Cacioppo et al., 1984; Cohen et al., 1955; Petty and Cacioppo, 1986). NFC affects attitude formation process (Cacioppo et al., 1986), issue-relevant thinking in relation to a persuasive message (Cacioppo et al., 1983) and customers’ response to persuasive communication (Haugtvedt et al., 1992; Haugtvedt and Petty, 1992). Also, it is found that low-NFC customers are more vulnerable to message-framing effects than high-NFC customers (Zhang and Buda, 1999). Likewise, high-NFC individuals reported higher recall than the low-NFC Individuals (Kassin et al., 1990) and high-NFC individuals produce additional task-related thoughts than low-NFC individuals (Lassiter et al., 1991).

In the current study, with reference to ELM, high-NFC subjects will be highly enthused to think about the reasons behind reducing the speed of the game in a low involvement condition as their MAO (motivation, ability, and opportunity) to process in-game advertising will be more than that of less-NFC subjects. Also, with reference to LCM, in a slow paced advergame, the attentional capacity used by the gamer to play the game will be less as nature of game is simple
and slow and hence, more spare capacity will remain to process in-game advertising than that in case of a fast-paced advergame. Furthermore, when a gamer plays a slow-paced advergame in a low involvement condition, then the player can use more of his/her spare capacity to process in-game brand placements than in the case of high involvement condition as the spare capacity required in case of high involvement condition is less. Thus, a high-NFC gamer playing a slow-paced advergame in low involvement condition, will show high ad-persuasion than a low-NFC gamer. Therefore, the following hypothesis is formulated:

**H2:** There will be a nature of game × game involvement × NFC interaction effect on ad-persuasion, such that, participants experiencing low game involvement in a slow paced advergame with high NFC will report higher ad-persuasion compared to participants experiencing low game involvement in a slow paced advergame with low NFC.

### 5.3. Research Methodology

#### 5.3.1. Overview

As the present study’s overall objective is to examine the cause and effect relationships of nature of game on ad-persuasion and moderating roles of game involvement and NFC, the appropriate research design employed is an experimental design (Malhotra et al., 2012). The following sections present the experiment in detail, including development of stimulus materials, participants and design, manipulation of independent variables and measurement of dependent variable. Finally, the section ends with the analyses of experimental data to test the proposed set of hypotheses.

#### 5.3.2. Development of Stimulus Materials

Study performed two pretests to select stimulus materials for the final experiment. Pretest 1 was performed to select stimulus for the treatment variable, nature of advergames i.e. (fast game
versus slow game), which was manipulated during the data collection process. First, six advergames were selected by conducting a focus group interview with 10 student gamers. After selecting the games, 40 gamers were selected to rate the perceived speed of all the selected advergames on a bipolar semantic scale (-3 = “very slow” to +3 = “very fast”). Based on the mean ratings, a fast-paced advergame (>2.5), and a slow-paced advergame (< -1) were selected for the study. In pretest 2, the game-involvement scenarios were created through expert interviews with three professors working in the area of marketing from a University. These professors generated six game involvement scenarios (3 scenarios for high game involvement and 3 scenarios for low game involvement). Then, 30 student respondents were selected and they provided their realism responses to these scenarios (See Appendix). Then they were instructed to complete the realism question, which examined the extent to which they feel that the provided scenarios were realistic. This realism item was measured on a seven point Likert scale (1 = “strongly disagree” to 7 = “strongly agree”), adapted from Shiv and Fedorikhin (1999). Among these six scenarios, based on the realism score two scenarios were selected for the final study. In the selected high game involvement scenario subjects were instructed that their views on online games were very important as the game developers and game designers need their valuable suggestions on online games to improve game’s quality before its launch in the market. Also, they were told that if the game developers find their suggestions really worth, they would be awarded a cash prize of Rs.5000 with a commendation certificate from the company which would help them even in their job placements too. Also, they were communicated that if they would score high in the given game then they would have a favorable chance to win Rs.10000 cash in a lottery. In low game involvement scenario no such statement about their views
importance or a chance to win Rs. 5000 or placement offer or any chance to win lottery was made in the low involvement condition (See Appendix).

5.3.3. Participants, Method and Design

As part of the main study, we asked 240 under-graduate students from a large Indian University for their willingness to participate in a game playing experiment. 215 student gamers informed their willingness to participate in the experiment. These gamers were between the ages of 17 and 22 years. Studies reported that 90% of teens are gamers (mediaedge:cia, 2005), which validates the use of student sample for the present study. All these 215 gamers were invited to a common computer lab to perform a game playing experiment. Then, these gamers were randomly allocated to any of the four experimental conditions. After the allocation of gamers to experimental conditions, they were asked to play the advergames on individual consoles for given time frames. After the completion of game play, participants in all the four conditions were presented a questionnaire depicting the manipulated scenarios, the manipulation check measures, measures for non-manipulated independent variable (game involvement) and dependent measure. Half the gamers played fast paced game and the rest played slow paced game. Similarly, half the gamers read about high game involvement inducing scenario, and rest read about a low game involvement inducing scenario. 15 participants did not finish the game playing task on time, thus, all reported results refer to 200 student gamers.

5.3.4. Independent Variables

Nature of game, game involvement and NFC are three independent variables used in this study. Nature of game and game involvement were the manipulated variables, whereas NFC was a measured variable. An 18 item NFC scale (Cacioppo et al., 1984) was used to measure gamers’ NFC in this study. Gamers’ responses to NFC measures were collected, which were first rank
ordered and then their responses were fragmented in three parts. The top and bottom thirds were selected for the study. There could be a possibility that student population might be more homogeneous in their NFC levels than the general population, hence tripartite partitioning was used in the study. Also, to reduce the classification errors and variance, middle part was dropped from the experimental sample and only the first part and the last part of students were taken for the study. Such practice has been followed in other studies involving NFC (e.g., Cacioppo et al., 1983).

5.3.5. Dependent Measures

Consumers’ ad-persuasion was used as a dependent variable in the study. Ad-persuasion measure in this study comprised of two items. First, participants were asked to specify how much they liked the advertised brand in the advergame on a scale ranging from 1 (not at all) to 7 (very much). Following this item, participants were asked to specify how much interested they would be in buying the embedded brand in the game on a scale ranging from 1 (not interested at all) to 7 (very much interested). Responses to these items were averaged to form an index of ad-persuasion ($r = 0.86, p < 0.05$).

5.4. Data Analyses and Results

5.4.1. Manipulation Checks

In the final study, the success of manipulation of nature of game was examined by instructing the gamers to indicate the speed of their played game on a semantic scale (-3 = “very slow” to +3 = “very fast”), similar to one used in the pretest 1. The results of one-way Analysis of Variance (ANOVA) showed a significant difference ($F (1,198) = 49.442, p < 0.05$) between fast-paced advergames ($M = 2.55$) and slow-paced advergames ($M = 0.916$). The result showed that manipulation of nature of game was successful. The success of manipulation of game-
involvement was examined in two phases. In the questionnaire respondents were instructed read the scenario first then asked to indicate the extent to which they feel they were involved in the advergame on a seven point bipolar scale (1 = “not at all involved in the game” to 7 = “highly involved in the game”). Then they were instructed to complete the realism question, which examined the extent to which they feel that the provided scenarios were realistic. This realism item was measured on a seven point Likert scale (1 = “strongly disagree” to 7 = “strongly agree”), adapted from Shiv and Fedorikhin (1999). The results of a one-way ANOVA showed a significant difference (F (1,198) = 25.249, p < 0.05) between high game-involvement (M = 5.898) and low game-involvement (M = 2.2). Further the examination of realism measures showed that all the gamers perceived that these scenarios were realistic (M = 5.21, p < 0.001). These findings showed that the manipulation of game-involvement through scenarios was successful.

5.4.2. Hypotheses Testing

We conducted a 2 ×2 × 2 between-subject measures ANOVA with ad-persuasion as the dependent measure and nature of game (fast or slow), game involvement (high or low) NFC (high or low) as the predictors. A significant nature of game × game interaction, revealed that game involvement moderates the effect of nature of game (game speed) on ad-persuasion (F (1, 196) = 310.62, p < 0.05). When gamers’ game involvement is low, slow paced advergames results in high ad-persuasion, compared to a condition in which gamers’ game involvement is high (F(1, 196) = 560.45, p < 0.05, M slow games / low game involvement = 4.90, M slow game / high game involvement = 2.80). However, when the game is fast paced one, gamers’ game involvement do not make any significant difference in the ad-persuasion (F(1, 196) = 1.60, p > 0.05, M fast game / high game involvement = 2.00, M fast game/ low game involvement = 1.80). These findings supported H₁a and H₁b.
Consistent with H\(_2\), we found a significant interaction between nature of game × game involvement × NFC (F (1, 196) = 53.35, \(p < 0.05\)). Preplanned contrasts revealed that that gamers with high NFC playing slow paced advergames in low game involvement condition reported high ad-persuasion (F (1, 196) = 311.36, \(p < 0.05\), \(M_{\text{slow game/low game involvement/high NFC}} = 5.21\)), compared to high game involvement condition (\(M_{\text{slow games/low game involvement/low NFC}} = 2.10\)). Therefore, the study found support for all the proposed set of hypotheses.

5.5. Discussion

Making brands noticeable and elicit expected persuasion to consumers is one of the important tasks of advertising practitioners while employing brand placements in different media platforms (Karrh et al., 2003). Here in this study we examined a research question that “does nature of the game influence consumers’ persuasion towards the ad embedded in the game?” If it influences, then “what are the conditions under which, this effect could be more effective”, are explored in this study. Using LCM (Kahneman, 1973) and ELM (Cacioppo and Petty, 1979), this study hypothesized the simultaneous effect of nature of game and game involvement on gamers’ ad-persuasion. Further, through following the same theoretical perspectives, we also hypothesized the moderating influence of NFC on the two way interaction of nature of game and game involvement on gamers’ ad-persuasion. As predicted by the proposed set of hypotheses, the results of the experimental data analyses show that the slow paced advergames with low game involvement resulted in high ad-persuasion than the slow paced advergames with high game involvement condition. However, for fast paced advergames, no difference was found in ad-persuasion scores between low and high game involvement conditions. These findings supported the integrative theoretical perspective of LCM and ELM, that in case of slow games, more spare capacity remains to process in-game advertising information and when a gamer plays such a
slow paced game under a low game involvement condition, it results in high ad-persuasion. In case of fast paced advergames, more amount of attentional capacity gets used up in game-playing task and hence less spare capacity remains which are not sufficient for in-game advertising processing. The role of game involvement supported by ELM that when the gamers’ involvement with the game is low, game playing will consume less attentional resources and thus, more spare capacity will be available to process in-game advertisements. The finding here emphasizes the fact that while investigating gamers’ ad-persuasion it is very essential to consider the attention and elaboration aspects simultaneously, because here in this study, we found that consumers’ processing of ad is primarily caused by attention element (game speed) and its further conditioned by elaboration element (game involvement).

Furthermore, insights regarding the possible interaction effect of nature of game, game involvement and NFC on ad-persuasion were also in supportive of LCM (Kahneman, 1973) and ELM (Cacioppo and Petty, 1979; Petty and Cacioppo, 1986). This suggests that when people play a slow paced game in low game involvement condition, gamers with high NFC start thinking and elaborating it more (ad embedded in the game) (Tormala and DeSensi, 2008), and this increased cognitive elaboration increases ad-persuasion (Cacioppo and Petty, 1979; Petty and Cacioppo, 1986). Hence, the study findings showed that as high-NFC gamers were highly motivated and inspired to think about the reasons behind playing a slow-paced advergame in low game involvement condition; their MAO (motivation, ability, and opportunity) to process in-game advertising elaboration was more than that of low-NFC individuals, thus, their ad-persuasion were found higher than that of low-NFC gamers. These findings supports the fact that an integrative theoretical perspective of LCM and ELM works in online advergames context, which lead the gamers to process the brand embedded in the game effectively.
5.6. Limitations and Scope for Future Research

This study used only two levels of nature of game (game speed) and two levels of game involvement. Effect of moderate level of nature of game (game speed) and game involvement on gamers’ ad-persuasion can be further explored. Second limitation is that this study was conducted on Indian gamers, thus, in future findings can be further established on gamers from other nations, where the usage rate of online games is different from that in India. Another limitation of the study is that it tested the moderating effects of game involvement and NFC on gamers’ ad-persuasion, however, moderating effect of various other factors, such as game-product congruity and product involvement can be explored in future research. Fourth, in this study the effects of advergames were tested on student sample, hence the findings can be extended by conducting a same study targeting different age group people, such as children, adolescents or middle aged people.

5.7. Theoretical and Managerial Implications

In spite of the growing popularity of interactive media, little research has been done to see how advergame-playing influences brand-placement effectiveness. This essay explores this issue in details. This piece of work is the first attempt to show an integrative perspective of ELM and LCM in the context of online advergames. The examination of potential effects of three factors – i.e., nature of game, game-involvement and NFC, provides new insights into how these advergames may affect consumers’ ad-persuasion. The results show that gamers playing slow-paced advergames under low game-involvement condition with high-NFC level yield high ad-persuasion scores. This finding best explains the integrative angle of the two theories used in this essay - i.e., ELM and LCM. A high-NFC gamer under low game-involvement condition when plays a slow-paced advergame, he/she is left with more spare capacity as less mental capacity
gets used up in the playing task (primary task). Thus, high-NFC gamers cognitively elaborate more to find the reasons behind in-game brand placements resulting in higher ad-persuasion than low-NFC gamers. Also, these findings yield important insights for marketers and game developers in the design and evaluation of advergames. The advertisers can choose slow-paced advergames with low game-involvement as a better advertising approach for in-game brand placements over others. Also, the findings show that in case of slow paced advergames with low game involvement condition, high-NFC consumers report higher ad-persuasion as high NFC leads to more critical processing of advertising than low-NFC consumers. Therefore, the advertising managers can design more effective advergames by taking into account the NFC factor along with nature of game (game speed) and game-involvement factors to certify that the enactment has the solidest positive effect on consumers’ ad-persuasion.