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The Mediating Role of Brand Recall and Brand Attitude in Influencing Purchase Intention in Advergames*

Azaze-Azizi Abdul Adis**
Hyung Jun Kim***

Research on purchase intention had showed remarkable progress in contributing to the theory of consumer behavior. Despite the popularity of academic discussions on various issues influencing purchase intention, the mediating role of brand recall and brand attitude on purchase intention, in particular advergames, has not yet been well explored, especially in developing economies such as Malaysia. Furthermore, the influence of self-brand congruity, entertainment and brand placement acceptance as antecedents to brand recall and brand attitude are expected to add value to the brand recall, brand attitude and purchase intention relationships.

This paper aims to investigate the impact of the mediating role of brand recall and brand attitude on purchase intention in advergames among Malaysian gamers. The antecedents towards brand recall and brand attitude are also examined to measure their influence on purchase intention. A total of 350 Malaysian gamers were interviewed through online survey in this study. The results showed that brand recall and brand attitude mediate the relationship between self-brand congruity, entertainment and brand placement acceptance with purchase intention. Also, entertainment and brand placement acceptance were found to have a significant relationship with brand recall. As expected, brand recall and brand attitude showed a positive relationship with consumer purchase intention in advergames.

It was found that self-brand congruity has a significant influence on brand attitude and purchase intention. When users see the brand which matches with them, they tend to act positively toward the brand exposed in the game. This is consistent with Escalas and Bettman (2005) who suggested that the greater the congruity, the more positive the consumer's attitude toward the brand in question. This leads to game usage and purchase (Davis and Lang, 2013).

In the advergaming context, the entertainment value in advergames is very important to determine the level of enjoyment and pleasure experienced by gamers during game-playing. Therefore, the more

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entertaining the ads, the more it will be remembered and the greater the positive behavior of the consumer towards the advergames - this ultimately stimulates their intention to purchase the brand.

This study shows the effect of brand placement on brand recall and brand attitude and also purchase intention. Brand placements might not work in games due to the interactivity involved in game-playing as people could be distracted from noticing the brand placements (Yang *et al.*, 2006). However, the significant influence of brand placements found in this study may provide major promise for advertisers. Game players may or may not explicitly remember the brands they see in the games, but these placements may influence their brand recall and brand attitude and could therefore influence later decisions (Yang *et al.*, 2006).

In this study, it was found that self-brand congruity was not significantly related with brand recall. The reason for this could be attributed to the fact that this study examined gamers who are highly involved in the interactive medium of games which force them to focus on game play rather than advertisements; the level of recognition to remember the brand exposed in the game is low and contributes to the "mismatch" between the gamers and the said brand.

The present study contributes to the existing literature of the antecedents of brand recall and brand attitude in advergames. This study contributes to the role of brand recall and brand attitude as mediators in purchase behavior theory. Academically, the relationship between brand recall and brand attitude is well known in advergaming research, but their impact as important mediators on purchase intention add new understanding in the interactive communication literature. Their mediating role may provide new insights on how they facilitate the effects of self-brand congruity, entertainment and brand placement on purchase intention. Besides that, the studies on the influence of self-brand congruity on brand recall and brand attitude and also consumer intention to purchase had not well-investigated in advergames. This study contributes to fill those gaps in advergames literature.

For practitioners, this study could suggest the use of illustrative or demonstrative placements of new products to help customers remember new brands, and the use of associative placements for existing products to increase consumers' purchase intention (Ho *et al.*, 2011). To advertisers, this study may provide useful information to improve their current advertising strategies in games, for instance, by considering game players' congruity, entertainment value and brand placement factors.

Key words: Brand recall, brand attitude, self-brand congruity, entertainment, brand placement acceptance, purchase intention, advergames

I. Introduction

Advergaming is a new marketing concept that has appeared due to the fact that the younger generation is always connected to the Internet, using mobile services such as SMS and MMS, or chatting via instant messenger services and playing stand-alone or networked games (Santos *et al.*, 2007). Marketers take advantage of this trend to advertise their products within the games played, using a revolutionary service called the advergaming, which is a game with advertisement capabilities (Santos *et al.*, 2007).

In advergaming the brand or product is generally a central feature of the game, whereas in in-game advertising products are more typically placed in the background of the game (e.g., as fast food restaurants in a street scene, on billboards around a sports stadium, or logos on sports equipment) (Winkler and Buckner, 2006). Advergaming is interactive video games which aim to advertise and are usually hosted on the Internet, where players (usually children and young men) take the role of a character in completing certain objectives (Purswani, 2010). Besides that, they are also used to boost sales of a product or service through increased brand recognition, increased liking or other methods (Tähtinen, 2006).

Advergaming is a promising segment which is expanding rapidly with an estimated in-

crease of five-fold by 2009 (Betrim, 2005). Many organizations are starting to use advergaming as a part of their marketing strategy (Winkler and Buckner, 2006) to improve their brand, boost product awareness and collect detailed data about existing and potential customers, clients and supporters (Afshar *et al.*, 2004; Buckner *et al.*, 2002).

Advergaming is normally commissioned by the marketing department of an organization to promote its own brand or product and the game can frequently be accessed via the organization's corporate website (Winkler and Buckner, 2006). In-game advertising, on the other hand, is increasingly being coordinated through independent gaming organizations, such as Massive Incorporated (<http://www.massiveincorporated.com/>) (Winkler and Buckner, 2006).

A cross between advertising and computer games, the term 'advergaming' combines the word 'advertising' and 'video games' (Grossman, 2005), which suggests that advergaming is a form of branded entertainment with the insertion of a brand within an entertainment property. Product related messages from companies are embedded in the form of game pieces, hidden treasures and other parts of the game (Neuborne, 2001; Nelson, 2002). An 'advergaming' website can be a place to play and explore and most importantly, it is generally free of charge (Obringer, 2007).

Research of brand recall and brand attitude

on purchase intention had showed remarkable progress in contributing to the theory of buyer behavior (see Gross, 2010; Cauberghe and Pelsmacker, 2010; Lee and Faber, 2007; Nelson *et al.*, 2004; Nelson, 2002). Although many studies have focused on brand recall and brand attitude in games-related advertising (see Jeong and Biocca, 2012; Lee and Faber, 2007; Gross, 2010; Shah *et al.*, 2012), their impact on purchase intention in in-game advertising has not yet been well explored, especially in developing economies such as Malaysia. Previous domestic research have found that advertising position, games experience (Ing and Azizi, 2009), telepresence, product experience and interactive experience in advergames (Hussein *et al.*, 2010) and features of online advertising (Wei *et al.*, 2010) are significantly related to purchase intention; and hence the attempt to emphasize brand recall, brand attitude and their mediating role will add value to the current literature on advergames.

In addition, self-brand congruity and entertainment factors have not been investigated in the context of in-game advertising in Malaysia. Also, the influences of self-brand congruity, entertainment and brand placement as antecedents to brand recall and brand attitude are not much known and further examination is needed to discover how these factors influence consumers' brand recall and brand attitude in the in-game advertising context. Therefore, self-brand congruity, entertainment and brand

placement are expected to add value to the brand recall, brand attitude and purchase intention relationships.

This study aims to examine the effects of brand recall and brand attitude on purchase intention. In addition, this study also examines brand recall and brand attitude as mediators for self-brand congruity, entertainment and brand placement on purchase intention in advergames.

II. Literature Review and Hypotheses

2.1 Advergames versus In-game Advertising

As suggested by Winkler and Buckner (2006), there are differences between advergames and in-game advertising. With in-game advertising (IGA), marketers buy product placement space within an existing game. There are multiple brands present which usually remain static in the background of the main action (e.g. buying a billboard in a car-racing game) which is similar with product placements in TV shows or movies (Yang *et al.*, 2006). In contrast, advergames are custom-online games designed specifically for a brand (Adweek Media, 2009). The brand is often central to the game-play and the game represents the brand message (Chen and Ringel, 2001). Advergames are nor-

mally commissioned by the marketing department of an organization to promote its own brand or product and the game can be frequently accessed via the organization's corporate website (Winkler and Buckner, 2006) and placed on the brand website as part of a larger marketing strategy; they are usually free to play (Gross, 2010). In-game advertising, on the other hand, is increasingly being coordinated through independent gaming organizations, such as Massive Incorporated (<http://www.massiveincorporated.com/>) (Winkler and Buckner, 2006). Specifically, some IGA games require high levels of involvement (Grigorovici and Constantin, 2004) and attention to play (Lee and Faber, 2007) compared to most advergAMES (Winkler and Buckner, 2006).

2.2 Self-Brand Congruity

Self-congruity is important to hedonic consumption because the subjective experience of imagination is often led by the evaluation of the product/service image vs the consumer's self-concept (Sirgy, 1982). Self-brand congruity can be conceptualized as the match between a brand's value-expressive attributes (e.g., product/ user images) and the consumer or user's image of self (Sirgy, 1985). According to Davis *et al.*, (2013), self-congruity is important in the context of a game due to its impact on imagination and experience. Gamers always seek a significant gap in the congruity between their

own actual perceived self-concept and the ideal self (Davis *et al.*, 2013). Gaming generates high levels of emotion and excitement (Fiore *et al.*, 2005) which provides a platform for the experiential amplification of the internal-self (Childers *et al.*, 2001; Scarpi, 2012).

There were remarkable findings in discussing the relationship between self-congruity and purchase intention. For example, Sirgy (1985) found that ideal congruity and self-congruity significantly influence purchase motivation. A recent study by Taylor *et al.*, (2011) on Social Network Service advertisement showed that internal self-congruity was found as an important factor in facilitating greater attitudinal acceptance of advertisements designed to appear in the SNS context. They assumed that consumers frequently compare imagery that has been associated with a brand with images they hold about themselves. The greater the congruity, the more positive the consumer's attitude is toward the brand in question (Escalas and Bettman, 2005). A study by Sirgy *et al.*, (2008) in extending self-image congruence research into corporate sponsorship, suggested that self-congruity with a sponsorship event has a positive influence on brand loyalty when customers are aware of the firm sponsoring the event and when it gets involved with the event. These findings showed the importance of self-congruity in determining brand attitude.

Much research in consumer behavior has demonstrated that actual self-congruity is pos-

itively related to consumer behavior constructs such as brand attitude, brand preference, brand choice, purchase motivation, purchase intention, brand purchase, brand satisfaction and brand loyalty (see Sohn and Kim, 2013; Sirgy *et al.*, 2008; Sirgy, 1982, 1985; Sirgy *et al.*, 2000; Sirgy and Su, 2000). Also, self-congruity is found to be positively related to game usage and purchase (Davis and Lang, 2013).

Thus, in this study, it is hypothesized that:

H1a: Self-brand congruity positively influences brand recall in advergames.

H1b: Self-brand congruity positively influences brand attitude in advergames.

H1c: Self-brand congruity positively influences consumer purchase intention in advergames.

2.3 Entertainment

Entertainment is a component of Internet advertising. Internet advertising is more aggressive than it was previously: advertisers strive to be more creative, targeted and effective (Mangalindan *et al.*, 2004). Now, Internet advertising includes rich media ads with animated objects that move across the consumer's screen and pop-under ads which appear on-screen after files are closed. In a game, advertising is placed in a more creative way by combining the animation elements and games to attract audience's attention to play. In pur-

chase behavior, consumers not only purchase toys, but are also entertained while in the store. This will make consumers' purchasing experiences extend to complementary entertainment, which may keep them in the store longer and stimulate sales (Kim *et al.*, 2007).

The entertainment aspect of advergames is an important source of value for gamers. It is expected to reflect the advergames' ability to enhance the experience of gamers. Uses and gratification research indicates that the entertainment value of a commercial exchange lies in its ability to fulfill the audience's needs for escapism, diversion, aesthetic enjoyment, or emotional release (Ducoffe, 1996). Ducoffe (1995; 1996) finds a significant positive relationship between entertainment and advertising value in traditional media and in Web advertising. A study of SNS users' perceptions of SNS advertisements as being entertaining and positive would influence their attitudes toward advertising appearing on the same (Taylor *et al.*, 2011). Perceived entertainment has been identified as a determinant influencing consumers' attitudes toward advertising in electronic commerce (Gao and Koufaris, 2006; Brackett and Carr, 2001). This was supported with the recent study by Martí-Parreño *et al.* (2013) who noted that entertainment is the main driver of brand attitude in advergames.

Thus, it is hypothesized that:

H2a: Entertainment positively influences brand

recall in advergames.

H2b: Entertainment positively influences brand attitude in advergames.

H2c: Entertainment positively influences consumer purchase intention in advergames.

2.4 Brand Placement Acceptance

Though the phenomenon of placing products in the entertainment media began in the early days of silent movies, progressing into the medium of television in the 1950s, the online environment only realized its potential in the 1990s (Vilafranco and Zeltzer, 2006). Brand placement refers to the practice of including a brand name product, package, signage, or other trademark merchandise within a communication medium (Hernandez *et al.*, 2004). Balasubramanian (1994) and Schneider (2005) defined product placement as 'a paid product message aimed at influencing movie (and television) audiences via the planned and unobtrusive entry of a branded product into a movie (or television program). There are several limitations to this definition. It is bound to only specific media, movie or television programs and is only when payment is taking place (Schneider, 2005). Karrh (1998) also argued whether product placement could always be viewed as 'obtrusive'.

Some supported the fact that brand placement in games could destroy the fantasy world of games (Nelson, 2002; Nelson *et al.*, 2004) and those who are negative about product

placement are also negative about other types of advertisement (Hernandez *et al.*, 2004; Nelson *et al.*, 2004). Contrasting views were discussed by Molesworth (2005) in which most of the respondents were positive about brand placement, partly because it added realism and helped to finance the game developers. This was supported by Ho (2006) who concluded that respondents' attitude towards product placement in video games is more positive compared to placement in movies due to the fact that video games are generally not as realistic as movies, and therefore the quality of the video games is dependent on its level of realism.

A recent study by Balakrishnan *et al.*, (2012) suggests that brand placement is positively related to brand recall on advertisement in the movies. Since the study only focused on movies, different effects may exist in games. In games specifically, brand recall was reported to amount to 30% (Nelson, 2002), and through the arousal and valence experienced by the gamer, brand attitudes were found to be positively influenced (Grigorovici and Constantin, 2004). The strength of placing a brand in an advergame does influence the advertising effects in terms of brand recall and brand attitude (Cauberghe and Pelsmacker, 2010).

Thus, it is hypothesized that:

H3a: Brand placement acceptance positively influences brand recall in advergames.

H3b: Brand placement acceptance positively

influences brand attitude in advergaming.
H3c: Brand placement acceptance positively
influences consumer purchase intention
in advergaming.

2.5 Brand Recall and Purchase Intention

Many have argued the use of advergaming to be more persuasive than traditional advertising, especially on young children (Pavlou and Stewart, 2000). This was further supported by Nelson's (2002) study on familiar and non-familiar brand placement in advergaming. Nelson's findings noted an almost 30 percent brand recall amongst all respondents and that 90 percent of the sample remembered at least one brand when asked immediately after the game. Hence, advergaming is a cost effective way to deliver brand message (Betrim, 2005).

Different people might experience different things and form different perceptions and attitudes. For example, in a research done on college students, as compared to their woman counterparts, men were found to be significantly more likely to play video games two or more hours a week and to indicate that video game playing interfered with sleeping and class preparation (Ogletree and Drake, 2007). In terms of brand placement and brand memory, Yang *et al.*, (2006), in comparing college students' explicit and implicit memory for brand names, found that the said students had low levels of explicit memory (recognition test) for

brands, but showed implicit memory (word-fragment test) for the brand names placed in video games. This result leads to consumer intention to purchase the product after brand exposure. The probability that a consumer plans to buy a certain brand or product during a certain period of time is set after the consumers have stored relevant information to establish the purchase decision (Howard and Sheth, 1971; Mathieson, 1991).

The impact of brand recall towards consumer attitude can be different according to the factors involved in the relationship. It was confirmed that highly congruent games lead to superior memory for the sponsoring brand in advergaming (Gross, 2010). Lee and Faber (2007) in their study on on-line games found that the degree of congruity between the product category of the brand and game content influences brand memory in which highly incongruent brands are better recalled than either moderately incongruent or highly congruent brands. Besides that, when physiological arousal increased, cognitive performance (i.e. memory scores) also increased (Jeong and Biocca, 2012). Chi *et al.*, (2009) suggests that brand recall and brand awareness were positively related to purchase intention. This indicates that brand is an important factor that determines the consumer's purchase decision in the consumer buying behavior process.

Thus, it is hypothesized that:

H4: Brand recall positively influences purchase intention in advergames.

H5: Brand recall positively influences brand attitude in advergames.

H7: Brand recall mediates the relationship between self-brand congruity, entertainment, brand placement acceptance and purchase intention in advergames.

2.6 Brand Attitude and Purchase Intention

Brand attitude is a necessary communication effect if brand purchase is to occur (Percy and Rossiter, 1992); it is undimensional, being the sum of the product of belief times evaluation. Hence, it may be fruitful to examine attitude as having multidimensional constructs consisting of networks of interconnected beliefs and evaluations (Bagozzi and Yi, 1988).

Whilst researchers found a weak correlation between attitudes towards advertising and purchase behavior (Nelson *et al.*, 2004), favorable attitudes towards advertising had a positive effect on the individuals' consumption behavior (Ing and Azizi, 2009). Researchers also claimed that attitudes towards advertising in general influenced attitudes towards advertising in games. In advergames, the change in brand attitude attributable to game enjoyment is stronger for product-relevant advergames than for product-irrelevant ones (Wise *et al.*, 2008).

Studies have suggested that brand attitude

has a positive impact on the purchasing intention of customers (Shah *et al.*, 2012; Teng and Huihuang, 2007; Shwu-Lng and Chen-Lien, 2009). Furthermore, brand attitude strategy is seen as reflecting an interaction between a potential consumer's involvement with the purchase decision and the underlying motivation to purchase (Percy and Rossiter, 1992). This supports our prediction that brand attitude may affect consumer behavior during game playing.

As a mediating role, attitude toward the ad is receiving increasing attention as a mediator of advertising effects (Lutz *et al.*, 1983). Recent study on the impact of event marketing on brand equity by Zarantonello and Schmitt (2012) found that brand attitudes mediate the relationship between events and brand equity only for certain types of events. Since those studies have not given emphasis to advergames, the current study attempts to fill this gap.

Thus, it is hypothesized that:

H5: Brand attitude positively influences purchase intention in advergames.

H8: Brand attitude mediates the relationship between self-brand congruity, entertainment, brand placement acceptance and purchase intention in advergames.

III. Method and Results

3.1 Method

The sample for this study was collected through an online survey of gamers in Malaysia. The respondents were contacted and asked whether they were playing video, mobile, or SNS games. After that, they were guided to click on a link to an online questionnaire. If they did not play games, they were asked to introduce their game-playing friends to participate in this study. A total of three hundred and fifty respondents were contacted via email and Facebook to participate in this study. They were contacted through email based on suggestions from friends of the author. Besides personal email invitations, participants were also invited through links placed in social networks such as Facebook.

For this study, a structured online survey questionnaire was designed. There are several reasons of using an online survey. Firstly, it saves on printing costs. Secondly, the online survey was specifically designed to encourage respondents to answer all the questions covered. For example, if the respondent had not finished answering the first question, they would not be able to move on to the next question. Thirdly, online surveys can reach a wide number of respondents. Fourthly, it saves the respondent's time in answering the questions.

For example, a test was conducted to compare the time consumed between online and offline surveys. The results showed that online surveys save almost half the respondent's time in completing the questionnaires compared to offline surveys.

Respondents were asked whether they have experienced in-game advertisement during game playing. To test the respondent's memory on the brand which appeared in the game, they were asked to recall the said brands without being asked to play the game. This is to encourage the respondents to recall the brands which they saw or noticed in the game in a natural viewing environment. This approach is different with most advertising effectiveness studies which used experimental control and artificial stimuli to test respondent's memory.

The measurements used in this study were adopted from previous studies and modified to suit the context of this study and survey approach. Self-brand congruity measurement was adapted from Sirgy *et al.*, (1997) which measured the match between a brand's value expression attributes and the consumer's self-image (Sirgy, 1985) among gamers. An entertainment measurement was adapted from Ducoffe (1996) which measures whether the advergames are attractive, entertaining, enjoyable, fun, pleasing and exciting to gamers. For brand placement acceptance, it measures the consumers' acceptance of the brand and product existence in games and their perceptions of brands which

appeared in the games they played in (Morton and Friedman, 2002). Brand recall also was adapted from Morton and Friedman (2002) which measures the extent of gamers' recall of brands placed in games and also their preferences compared with that of the commercial format. Brand attitude was adapted from Batra and Stayman (1990) which measures consumers' attitude towards the brands which they saw in the games; in other words, whether the brands appeared were bad/good, not lovable/lovable, not desired/ desired and negative/positive. Finally, purchase intention was adapted from Morton and Friedman (2002) which measures a consumer's level of intention to purchase the brands, which appeared in games, in the future. All measurements were measured by 5-point Likert scales of "1 = strongly disagree" to "5 = strongly agree". The Cronbach's alpha estimated for self-brand congruity was 0.856, entertainment was 0.946, brand placement was 0.839, brand recall was 0.862, brand attitude was 0.874 and purchase intention was 0.828. As the Cronbach's alphas in this study were all much higher than 0.6, the constructs were therefore deemed to have adequate reliability.

A total of 350 respondents participated in this study and managed to complete an online survey. Table 1 shows their sample profile by gender, age, time spent in a week playing games, preferred game mode, preferred game and type of game played referred to when this

survey was conducted.

<Table 1> Respondent profile

Profile		N = 350
Gender	<i>Male</i>	167
	<i>Female</i>	183
Age	19-20 years	47
	21-25 years	156
	26-30 years	95
	> 30 years	52
Time spend (hours in a week)	< 1 hour	16
	1-8 Hours	259
	> 8 hours	75
Game mode	Single player	250
	Multiple player	100
Preferred game	Free game	333
	Paid game	17
Type of game	Video game	114
	Mobile game	126
	SNS game	110

3.2 Results

Table 2 presents the results of a multiple regression analysis used to evaluate the strength of the proposed relationship. In model 1, it was revealed that H2a and H3a were found to be significant in the prediction model, which provides support for hypotheses H2a and H3a referring to the relationship between entertainment ($\beta = 0.145$; $p < 0.05$) and brand placement on brand recall ($\beta = 0.520$; $p < 0.001$). However, self-brand congruity was found to have no significant relationship with brand recall ($\beta = 0.052$; $p > 0.05$), or H1a is rejected. In model 2, H1b, H2b and H3b were found to

<Table 2> The relationship between self-brand congruity, entertainment, brand placement, brand recall, brand attitude and purchase intention

Dependent variables	Multi-collinearity		Model 1 (Brand recall)		Model 2 (Brand attitude)		Model 3 (Purchase intention)	
	Tol	VIF	t	β	t	β	t	β
(Constant)			3.455		3.101		4.858	
Self-brand congruity	0.875	1.143	1.179	0.052	1.838	0.088*	3.016	0.144**
Entertainment	0.585	1.711	2.753	0.145**	4.701	0.271***	2.722	0.156**
Brand placement acceptance	0.574	1.742	9.755	0.520***	5.007	0.292***	6.427	0.373***
R Square			0.409		0.294		0.302	
Adjusted R Square			0.404		0.287		0.296	
F-Statistics			79.742		47.926		49.901	
Sig.			0.00		0.000		0.000	

*Significance at 0.10, **Significance at 0.05, ***Significance at 0.001

be significant in the prediction model, which provides support for hypotheses H1b, H2b and H3b, referring to the relationship between self-brand congruity ($\beta = 0.088$; $p < 0.10$), entertainment ($\beta = 0.271$; $p < 0.001$), and brand placement and brand attitude ($\beta = 0.292$; $p < 0.001$). In model 3 in which purchase intention was considered as a dependent variable, all dependent variables were found to be significant in the prediction model, which provides support for hypotheses H1c, H2c, and H3c referring to the relationship between self-brand congruity ($\beta = 1.44$; $p < 0.05$), entertainment ($\beta = 0.156$; $p < 0.05$), and brand placement acceptance and brand attitude ($\beta = 0.373$; $p < 0.001$).

Table 3 presents the results of a multiple regression analysis used to examine the relationship between brand recall, brand attitude and

purchase intention. The model revealed that brand recall and brand attitude were found to be significant in the prediction model, that is, there is a relationship between brand recall ($\beta = 0.413$; $p < 0.001$), and brand attitude on purchase intention ($\beta = 0.360$; $p < 0.001$). Thus, H4 and H5 are supported. Hypotheses 6 suggests a relationship between brand recall and brand attitude. The results show that brand recall is positively related with brand attitude, in other words, the relationship between brand recall on brand attitude ($\beta = 0.484$; $p < 0.001$) in advergames is significant (Table 4). Thus, H6 is supported.

Table 5 presents the hierarchical regression to examine the mediating effects of brand recall and brand attitude in the relationships between self-brand congruity, entertainment and

<Table 3> The relationship between brand recall, brand attitude and purchase intention

Model 4 (Dependent variable: Purchase Intention)	t	β
(Constant)	6.360	
Brand recall	9.032	0.413***
Brand attitude	7.864	0.360***
R Square	0.444	
Adjusted R Square	0.441	
F-Statistics	138.660	
Sig.	0.000	

***Significance at 0.001

<Table 4> The relationship between brand recall and brand attitude

Model 4 (Dependent variable: Brand attitude)	t	β
(Constant)	8.412	
Brand recall	10.330	0.484***
R Square	0.235	
Adjusted R Square	0.232	
F-Statistics	106.716	
Sig.	0.000	

***Significance at 0.001

brand placement on purchase intention. In model 1, the R square value indicated that 30.2% of the variance in purchase intention can be explained by self-brand congruity, entertainment and brand placement acceptance ($F = 49.901$; $p < 0.001$). The results also showed that self-brand congruity ($t = 3.016$; $p < 0.05$), entertainment ($t = 2.722$; $p < 0.05$) and brand placement ($t = 6.427$; $p < 0.001$) are significantly related with purchase intention. With the inclusion of brand recall and brand attitude in model 2, the R square value indicated that 46.5% of the variance in purchase intention can

be explained by self-brand congruity, entertainment, brand placement, brand recall and brand attitude ($F = 59.803$; $p < 0.001$).

To test for mediation, we applied Baron and Kenney's method which used the computation of three regression models. The first regression is between the independent variable and the intervening variable. The second regression is between independent variable and dependent variable and finally, the dependent variable is regressed on both the independent and intervening variables as shown in the research hypotheses.

〈Table 5〉 Hierarchical regression: the relationships between self-brand congruity, entertainment, brand placement, brand recall and brand attitude on purchase intention

	Model (Dependent variable: Purchase Intention)	Brand recall is controlled		Brand attitude is controlled	
		t	β	t	β
Model 1	(Constant)	4.858		4.858	
	Self-brand congruity	3.016	0.144**	3.016	0.144**
	Entertainment	2.722	0.156**	2.722	0.156**
	Brand placement acceptance	6.427	0.373***	6.427	0.373***
	R Square	0.302		0.302	
	Adjusted R Square	0.296		0.296	
	R Square change	0.302		0.302	
	F-Statistics	49.901		49.901	
	Sig.	0.000***		0.000***	
Model 2	(Constant)	3.155		3.155	
	Self-brand congruity	2.767	0.123**	2.489	0.110**
	Entertainment	1.796	0.096*	0.975	0.053
	Brand placement acceptance	2.623	0.159**	4.713	0.262***
	Brand recall Brand attitude	7.564	0.410***	7.653	0.379***
	R Square	0.401		0.403	
	Adjusted R Square	0.394		0.396	
	R Square change	0.099		0.101	
	F-Statistics	57.812		58.293	
	Sig.	0.000***		0.000***	

*Significance at 0.10, **Significance at 0.05, ***Significance at 0.001

According to Baron and Kenny (1986), these three regression equations provide the tests of linkages of the mediational model. To establish mediation, the following conditions must hold: first, the independent variable must affect the mediator in the first equation: second, the independent variable must be shown to affect the dependent variable in the second equation: and third, the mediator must affect the dependent variable in the third equation. If these

conditions all hold in the predicted direction, then the effect of the independent variable on the dependent variable must be less in the third equation than in the second. Perfect mediation holds if the independent variable has no effect when the mediator is controlled. The hierarchical regression results also showed that brand recall (Table 4, $\beta = 0.410$; $p < 0.001$) and brand attitude (Table 5, $\beta = 0.379$; $p < 0.001$) mediate the relationship between self-

brand congruity, entertainment, brand placement and purchase intention. Thus, H7 and H8 are supported.

As summarized in Table 6, the results of the four regression models for mediation (brand recall and brand attitude) show that the effect of self-brand congruity, entertainment and brand placement on purchase intention is much less in the fourth model compared to the third. Nevertheless, the R square has improved from 0.302 (Model 3) to 0.401 (Model 4) for brand recall and to 0.403 (Model 5) for brand attitude. This value improvement indicated that the fourth model allows partial mediation to explain more variance than the third model without considering the mediating variables of brand recall and brand attitude. The lower R square values shown in Models 4 and 5 compared with Model 3 indicated that the variance of

the population is more favorably explained by the data. A perfect mediation cannot be claimed since the independent variables in Model 4 and Model 5 are still significant. However, the decrease of the β value from Model 3 to Model 4 and Model 5 show the mediating effects.

IV. General Discussion

4.1 Summary of Findings

This study aims to examine the impact of brand recall and brand attitude on purchase intention in advergaming among Malaysian gamers. The antecedents towards brand recall and brand attitude were also examined to measure their influences on purchase intention. The re-

<Table 6> The regression models testing the mediating variables of brand recall and brand attitude

Y	Model 1 Brand recall	Model 2 Brand attitude	Model 3 Purchase intention	Model 4 Purchase intention (Brand recall is controlled)	Model 5 Purchase intention (Brand attitude is controlled)
Self-brand congruity	0.052	0.088*	0.144**	0.123**	0.110**
Entertainment	0.145**	0.271***	0.156**	0.096*	0.053
Brand placement acceptance	0.520***	0.292***	0.373***	0.159**	0.262***
Brand recall				0.410***	
Brand attitude					0.379***
R Square	0.409	0.294	0.302	0.401	0.403
R Square change			0.302	0.099	0.101
F-Statistics	79.742	47.926	49.901	57.812	58.293

*Significance at 0.10, **Significance at 0.05, ***Significance at 0.001

sults showed that except for direct effects between self-brand congruity, brand recall and brand attitude, all hypotheses were supported for Malaysian consumers.

It was found that self-brand congruity has a significant influence on brand attitude and purchase intention. When users see the brand which matches with them, they tend to act positively toward the brand exposed in the game. This is consistent with Escalas and Bettman (2005) who suggested that the greater the congruity, the more positive the consumer's attitude toward the brand in question. This leads to game usage and purchase (Davis and Lang, 2013).

In the advergaming context, the entertainment value in advergaming is very important to determine the level of enjoyment and pleasure experienced by gamers during game-playing. Therefore, the more entertaining the ads, the more it will be remembered and the greater the positive behavior of the consumer towards the advergaming - this ultimately stimulates their intention to purchase the brand.

This study shows the effect of brand placement on brand recall and brand attitude and also purchase intention. Brand placements might not work in games due to the interactivity involved in game-playing as people could be distracted from noticing the brand placements (Yang *et al.*, 2006). However, the significant influence of brand placements found in this study may provide major promise for advertisers.

Game players may or may not explicitly remember the brands they see in the games, but these placements may influence their brand recall and brand attitude and could therefore influence later decisions (Yang *et al.*, 2006).

In this study, it was found that self-brand congruity was not significantly related with brand recall. The reason for this could be attributed to the fact that this study examined gamers who are highly involved in the interactive medium of games which force them to focus on game play rather than advertisements; the level of recognition to remember the brand exposed in the game is low and contributes to the "mismatch" between the gamers and the said brand. The overall result of this study has been summarized in Table 7.

communication literature. Their mediating role may provide new insights on how they facilitate the effects of self-brand congruity, entertainment and brand placement on purchase intention. Besides that, the studies on the influence of self-brand congruity on brand recall and brand attitude and also consumer intention to purchase had not been well-investigated in advergaming. This study contributes to fill those gaps in advergaming literature.

For practitioners, this study could suggest the use of illustrative or demonstrative placements of new products to help customers remember new brands, and the use of associative placements for existing products to increase consumers' purchase intention (Ho *et al.*, 2011).

<Table 7> The summary of the overall results of the relationship between self-brand congruity, entertainment, brand placement acceptance, brand recall, brand attitude and purchase intention.

H1	a	Self-brand congruity positively influences brand recall in advergames	Rejected
	b	Self-brand congruity positively influences brand attitude in advergames	Supported
	c	Self-brand congruity positively influences purchase intention in advergames	Supported
H2	a	Entertainment positively influences brand recall in advergames	Supported
	b	Entertainment positively influences brand attitude in advergames	Supported
	c	Entertainment positively influences purchase intention in advergames	Supported
H3	a	Brand placement acceptance positively influences brand recall in advergames	Supported
	b	Brand placement acceptance positively influences brand attitude in advergames	Supported
	c	Brand placement acceptance positively influences purchase intention in advergames	Supported
H4		Brand recall positively influences purchase intention in advergames	Supported
H5		Brand attitude positively influences purchase intention in advergames	Supported
H6		Brand recall positively influences brand attitude in advergames	Supported
H7		Brand recall mediates the relationship between self-brand congruity, entertainment, brand placement acceptance and advergames	Supported
H8		Brand attitude mediates the relationship between self-brand congruity, entertainment, brand placement acceptance and advergames	Supported

To advertisers, this study may provide useful information to improve their current advertising strategies in games, for instance, by considering game players' congruity, entertainment value and brand placement factors.

Since the present study employed online survey instead of experimental study to test brand recall effectiveness, this would give new direction for future research to test audience memory on advertising effectiveness in a natural viewing environment. This is because experimental studies usually tend to suffer from unnatural viewing environments, short-duration experimental stimuli and artificial stimuli (Shrum *et al.*, 2009). Through appropriate procedures, survey research would give meaningful understanding to

media communication research.

4.2 Limitations and Directions for Future Research

This present study examines the impact of antecedents of brand recall and brand attitude towards purchase intention and also the role of brand recall and brand attitude as mediators in advergames. However, this study is subject to several limitations. Firstly, the respondents were drawn from the researcher's list of friends' social networks. This is due to the time constraints faced by the researcher in conducting this study. Secondly, the type of game genre was not specified in the testing of the effects of

brand recall and brand attitude, and their antecedents on purchase intention, even though the scope covered three types of popular games played namely video, mobile and SNS games. A study on the specific game genre will give better understanding for future research. Finally, the present study suggests the impact of self-brand congruity in influencing brand recall and brand attitude in advergames. Therefore, future research to examine its effects on other dominant factors would give more understanding in determining the success of in-game advertising strategies.

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