

# EFFECTS OF INTERACTIONS AND PRODUCT INFORMATION ON INITIAL PURCHASE INTENTION IN PRODUCT PLACEMENT IN SOCIAL GAMES: THE MODERATING ROLE OF PRODUCT FAMILIARITY

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## ABSTRACT

Product placement in social games has become a growing trend in recent years. Based on mere exposure effect and dual-process theory, this paper develops a theoretical model to examine the effects of interactions and product information on the initial purchase intention of social gamers in the context of product placement in social games. The moderating effects of product familiarity are also examined. Results show that interaction with product and sociality affect the positive emotion of social gamers in relation to the virtual product in a social game, and the positive emotion affects the social gamers' product interest in the actual product. In addition, positive emotion directly affects the initial purchase intention of social gamers in a heuristic approach; and perceived usefulness and perceived entertainment gained from the provided product information affect the initial purchase intention of social gamers through product interest in a systematic approach. Finally, the results show that product familiarity is an important moderator.

Keywords: Initial purchase intention; Interaction; Product information; Product placement; Social game

## 1. Introduction

In recent years, the use of social games has become a worldwide phenomenon. Social game is a type of entertaining online game designed to facilitate interaction among its users [CNNIC 2009; Shin & Shin 2011]. The popularity of social games has captured the attention of marketers [Rozendaal et al. 2013]; thus, the placement of advertisements in social games is on the rise [Terlutter & Capella 2013]. For example, McDonald's has successfully advertised its brand and products on popular social games FarmVille and CityVille on Facebook. Likewise, Unilever-sponsored Dove has successfully advertised its products on the Sims Social game on Facebook.

Product placement in social games is a distinctive and appropriate category of research on advertising in digital games [Terlutter & Capella 2013]. It is similar to advertising in other digital games to some extent; however, social games differ somewhat from other digital games. As a result, the effect of product placement may vary as well. The most significant difference may lie in the area of interpersonal relationships and its effect on gamers' response to the product being advertised [Terlutter & Capella 2013]. To achieve the goals of social games, gamers are encouraged to "share" the game with their friends (via the social network hosting the game), or to induce them to play as "neighbors" or "allies" [Radoff 2011]. Social gamers explicitly know the members who are playing with them [Rau et al. 2008]. Therefore, social gamers are interested in improving their real interpersonal relationships through the medium of the placed product unlike players of other digital games who primarily participate for entertainment. The special contribution of the products placed in social games to improvements in interpersonal relationships may evoke responses from social gamers regarding these products that differ from their responses to those products placed in other digital games.

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Current research on advertising in digital games has focused on in-game advertising and advergames [Hang & Auty 2011; Jeong & Biocca 2012; Lee & Faber 2007; Mackay et al. 2009; Marchand & Hennig-Thurau 2013; van Reijmersdal et al. 2012]. However, despite its fast-growing popularity, only scarce attention devoted to advertising in social games [Terlutter & Capella 2013; Rozendaal et al. 2013; Okazaki & Yagüe 2012]. Little is known about how product placements in social games affect the purchase intention of social gamers toward the placed products.

The present study develops a theoretical model to understand the effect of product placement on the initial purchase intentions of social gamers. Previous studies report product/brand familiarity as an important variable that influences consumer processing [Campbell & Keller 2003; Sheehan & Guo 2005; Mau et al. 2008]; thus, the moderating effects of product familiarity are also examined. The present study extends our current state of knowledge about product placement in social games. The findings may deepen the understanding of companies with respect to how product placement in social games affects the initial purchase intentions of consumers.

## **2. Conceptual framework and research hypotheses**

### **2.1. Conceptual framework**

Social games with product placement display a mixture of gaming and advertising attributes. In the process of achieving game goals, social gamers interact indirectly with the virtual product by using it as a medium through which real interpersonal relationships can be enhanced, unlike in other digital games where players only interact directly with the virtual product. This characteristic is unique to product placement in social games. In addition, much product information is seamlessly integrated into the existing social game environment, unlike other digital games that typically show only branded products or brand logos. Therefore, the present study focuses on interactions and product information to examine how product placements in social games influence the initial purchase intentions of social gamers.

#### **2.1.1 Effect of interactions in social games with product placement**

The mere exposure effect (MEE) postulates that repeated exposure to a stimulus tends to enhance liking of that stimulus [Zajonc 1968]. Its effect is robust [Bornstein 1989; Zajonc 2001]; for example, Bornstein [1989] reported that repeated exposure to a stimulus increases positive emotion toward it based on a meta-analysis of research on mere exposure. In the process of playing a social game with product placement, social gamers interact directly with the virtual product being presented in the game to achieve game tasks. They also associate with friends (society) by using the virtual product as a medium through which they can enhance real interpersonal relationships (i.e., indirect interaction with the virtual product). Direct and indirect interactions with the in-game virtual product expose social gamers to the virtual product (stimulus) repeatedly. Companies interested in product placement are very cautious about design product placement to induce neutral or positive emotion. Thus, direct and indirect interactions with the virtual product can enhance the positive emotions of social gamers toward it in line with the MEE. The present study therefore proposes that interactions with the product and with society positively influence the positive emotions of social gamers toward virtual products.

According to the mood congruence effect, mood states influence evaluations and judgments in mood-congruent directions [Gardner 1985]. If social gamers feel positive emotion toward the virtual product in the game, their evaluations of the actual product (i.e., product interest) are likely to be biased positively. Thus, the present study proposes that the positive emotion of social gamers toward a virtual product positively influences their interest in the real product.

#### **2.1.2 Effect of product information in social games with product placement**

Researchers have widely applied dual-process theory to study how information processing behavior can produce decision outcomes [Chaiken 1980; Zorn et al. 2012]. This theory holds that information can be processed according to two modes of thinking. The heuristic-systematic model (HSM) developed by Chaiken [1980] is a widely recognized model developed from this perspective [Ferran & Watts 2008]. It postulates that individuals can process information in two basic modes, namely, heuristically and systematically. The heuristic view “de-emphasizes detailed information processing and focuses on the role of simple rules or cognitive heuristics” [Chaiken 1980, p.752]. Alternately, the systematic view “emphasizes detailed processing of message content and the role of message-based cognitions” [Chaiken 1980, p.752]. Generally, both processing modes occur concurrently on judgment [Ferran & Watts 2008]. Product information is seamlessly integrated into the existing environments of social games with product placement. Furthermore, Molesworth [2006] reports that product placements in interactive games enhance information processing by gamers and increases the persuasive factor of such form of advertisement. Therefore, product placement in social games can persuade social gamers to purchase. The present study employs HSM to examine how social gamers process product information.

According to HSM, feedback on the internal state of an individual in relation to information source is a non-content cue that directly influences his/her decision when he/she analyzes received information heuristically, whereas

information quality determines the degree of informational influence as a content cue when an individual analyzes the received information systematically [Chaiken 1980; Ferran & Watts 2008]. In the context of social games with product placement, the non-content cue of positive emotion toward a virtual product is the feedback regarding the internal states of social gamers toward the virtual product. The virtual product in social games is the information source of the corresponding real product. In line with the heuristic mode, the present study proposes that the positive emotion of social gamers toward the virtual product directly influences product decisions (i.e., initial purchase intention).

Previous research has indicated that useful and entertaining advertisements are the two distinct ways of inducing positive brand attitudes in consumers [Gibson 2008; Jung et al. 2011]. Hence, the present study employs perceived usefulness and entertainment as content cues to describe the quality of product information in social games with product placement. The product interest of consumers is an important predictor of purchase intention [Rogers 1962]; therefore, the detailed processing of product information content through a systematic approach may involve the influence of perceived usefulness and entertainment on the product interest of social gamers. Consequently, their initial purchase intentions are affected.

### 2.1.3 Product familiarity

Many advertised products may or may not be familiar to consumers. The unfamiliarity of consumers with a product may be attributed to the late entry of a product into the marketplace or to the fact that they have not yet been exposed to the product [Stewart 1992; Campbell & Keller 2003]. In line with this information, product familiarity refers to the extent of a consumer's direct and indirect experience with a particular product [Kent & Allen 1994]. Consumers are likely to apply different processing modes to advertisements for familiar and unfamiliar products [Campbell & Keller 2003], and the effectiveness of advertisements differs between these two types of products [Mau et al. 2008; Sheehan & Guo 2005; Campbell & Wright 2008]. In the context of product placement in social games, some social gamers may have been exposed to the actual product, while others have not. The influence of product placement on purchase decision may therefore vary for social gamers who are either familiar or unfamiliar with the actual product. Hence, the present study proposes that the product familiarity of social gamers prior to playing social games is a significant moderator in product decision-making. Figure 1 shows the research model.

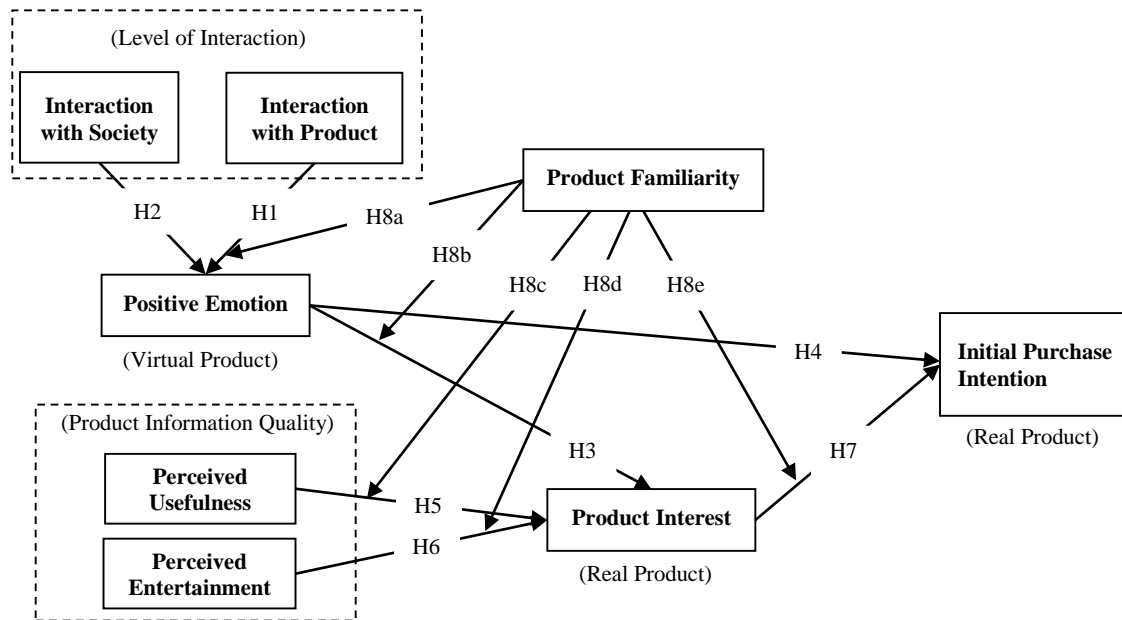


Figure 1: Research Model

## 2.2. Hypotheses

In the process of playing a social game with product placement, a high level of interaction with the virtual product increases the repeated exposure of social gamers to the virtual product. In line with MEE, this repeated exposure to a virtual product increases positive emotion toward the virtual product. Interactions with both a virtual product and with society expose social gamers to the virtual product. The present study therefore proposes that interactions with products and with society positively influence the positive emotion of social gamers toward the virtual product being presented in a social game.

A virtual product follows the appearance of the real product and is its representative in social games. According to the mood congruence effect, the evaluation of a real product by social gamers is congruent with their moods toward the virtual product being presented in a social game. Affective attitude positively influences the brand interest of consumers [Morris et al. 2002]; hence, the present study proposes that the positive emotion of social gamers toward the virtual product positively influences their interest in the real product. In sum, we hypothesize that:

**H1:** *Interaction with product is positively related to the positive emotion of social gamers toward the virtual product being presented in a social game.*

**H2:** *Interaction with society is positively related to the positive emotion of social gamers toward the virtual product being presented in a social game.*

**H3:** *Positive emotion toward a virtual product is positively related to the product interest of social gamers in the real product.*

Product information is seamlessly incorporated into the existing environment of social games with product placement. Thus, social gamers are continuously exposed to this information in the process of playing the games. According to HSM, individuals can process information in two basic modes, namely, heuristically and systematically [Chaiken 1980]. The positive emotion of a social gamer toward the virtual product being presented in a social game is the feedback of his/her internal state regarding the information source of the corresponding real product. In line with the heuristic mode, positive emotion is likely to directly and positively influence the initial purchase intention of a social gamer as a non-content cue.

Product placement in social games is an advertising tool. Furthermore, perceived usefulness and entertainment are two important content cues with which to assess the quality of product information in advertisements [Gibson 2008; Jung et al. 2011]. In line with the systematic mode, the present study proposes that perceived usefulness and entertainment are important to the purchase decision process of social gamers. Ray [1973] indicated that product information influences the product interest of consumers. Therefore, high-quality product information can help social gamers understand the placed product effectively and then easily arouse their product interest. In addition, product interest positively influences the purchase intention of consumers toward new products [Rogers 1962]. Hence, the present study proposes that perceived usefulness and entertainment positively influence the product interest of social gamers and subsequently influences their initial purchase intentions.

The following hypotheses are developed:

**H4:** *Positive emotion toward a virtual product is positively related to the initial purchase intention of social gamers for the real product.*

**H5:** *The perceived usefulness of product information is positively related to the product interest of social gamers in the real product.*

**H6:** *The perceived entertainment of product information is positively related to the product interest of social gamers in the real product.*

**H7:** *Product interest is positively related to the initial purchase intentions of social gamers.*

Familiar and unfamiliar products are recalled differently by consumers [Campbell & Keller 2003]. In the context of product placement in social games, social gamers with no prior knowledge of a placed product may perceive the product as only one of numerous virtual items inside the game; thus, they are unlikely to develop a different emotion toward the virtual product during their direct interaction with it. However, social gamers with prior knowledge of a placed product are likely to distinguish the virtual product from other virtual items within the game; thus, they may develop particular emotions toward the product. Based on these considerations, the present study proposes that direct interactions with a virtual product in a social game are likely to evoke stronger positive emotions in the case of a familiar product than in the case of an unfamiliar one.

As an important application in social networking sites, social games can help users establish and maintain interpersonal relationships [Zhu & Chang 2014]. If a virtual product helps improve the interpersonal relationships of social gamers in social games with product placement, then social gamers may also appreciate and cultivate positive emotions for the virtual product regardless of whether or not they have prior knowledge of the product. Hence, the positive emotions toward the virtual product present in social games are induced by the interaction with society and are unlikely to differ significantly between familiar and unfamiliar products.

The virtual product is the representation of a real product in social games with product placement. Given that product placement can enhance the realism of the game when familiar products are involved [Mackay et al. 2009], positive emotion toward virtual products “spill over” onto the actual products through mood-congruent bias and is likely to be stronger in the case of familiar products than in the case of unfamiliar products. Hence, the present study proposes that positive emotion toward a virtual product has a stronger effect on the interest of social gamers in familiar products than on their interest in unfamiliar products.

The following hypotheses are developed:

*H8a: Interaction with product has a stronger effect on social gamers' positive emotion toward virtual product for familiar products than for unfamiliar products.*

*H8b: Positive emotion has a stronger effect on social gamers' product interest in familiar products than in unfamiliar products.*

In the context of product placement in social games, social gamers already possess some knowledge of familiar products, but they know little about unfamiliar products. Thus, these gamers are likely to update their existing knowledge when they are exposed to information about a familiar product [Snyder & Stukas 1999]. However, they pay increased attention to the novel and interesting aspects of the information when faced with unfamiliar products [Campbell & Keller 2003]. Hence, the present study proposes that perceived usefulness has a stronger effect on the interest of social gamers in familiar products than on their interest in unfamiliar products. By contrast, perceived entertainment has a stronger effect on the interest of social gamers in unfamiliar products than on their interest in familiar products.

The following hypotheses are developed:

*H8c: Perceived usefulness has a stronger effect on social gamers' product interest in familiar products than in unfamiliar products.*

*H8d: Perceived entertainment has a stronger effect on social gamers' product interest in unfamiliar products than in familiar products.*

In the context of product placement in social games, social gamers who are familiar with the placed products prior to playing games already display a stable attitude toward them [Mau et al. 2008]. Thus, the influence of increased product interest on purchase intention through additional contacts on product information tends to be weak given familiar products. However, social gamers who are unfamiliar with placed products and lack prior knowledge or basic attitudes toward the products are likely to make purchase decisions based on interest induced by product information contacts. Hence, the present study proposes that product interest has a stronger effect on the intention of social gamers to purchase unfamiliar products than on their intention to purchase familiar products.

*H8e: Product interest has a stronger effect on social gamers' initial purchase intention for unfamiliar products than for familiar products.*

### **3. Methodology**

#### **3.1. Data collection**

A questionnaire was made to collect data from social gamers who have interacted with a product (Lohas Juice) placed in the popular social game "Kaixin Garden" (similar to Facebook's FarmVille) in China. Lohas Juice is a beverage owned by China's largest food and beverage company, COFCO. In the process of playing the game, gamers could plant five types of Lohas fruit seeds, and the garden setting cards simulated the real Lohas plantation to inject the "limited place of origin" concept of Lohas Juice. In the competition, the game encouraged gamers to plant Lohas seeds, harvest Lohas fruit and produce Lohas Juice, all the while trying to stop their friends from stealing their goods. If gamers then presented this juice to their Kaixin friends, they would be given the opportunity to win either a virtual rabbit or an actual bottle of Lohas Juice. Over 22.8 million people participated in the activity, and virtual juice gifts were sent over 120 million times during the competition. Sales grew by 30% in the first month, and many consumers could identify the place of origin when they buy the actual Lohas Juice.

Before the formal survey, we consulted two Marketing professors about the measurement items of the questionnaire. Subsequently, 12 graduate students specializing in Marketing and had knowledge of advertising in games were recruited as part of a pilot survey. The formal questionnaire was modified based on their feedback, and then published in a professional online survey site to collect data. Non-gamers and gamers who have actual experience in consuming Lohas Juice prior to playing the game were excluded through screening questions. No questionnaire was discarded due to incomplete data. This outcome was based on the fact that the professional survey site can inform participants automatically when their answers in the questionnaires lack integrity, hence an incomplete questionnaire cannot be submitted successfully. The final effective sample size was 267. The participants consisted of 46% male and 54% female, whose ages ranged from 18 to 60 years. Consumers whose ages ranged from 18 to 25 years, 26 to 30 years, 31 to 40 years, and 41 to 60 years comprised 36%, 44%, 17% and 3% of the participants, respectively. Among the respondents, 53% were familiar with Lohas Juice prior to playing the game, whereas 47% were unfamiliar with the product.

#### **3.2. Measurement**

Seven constructs were measured in the current study: initial purchase intention, product interest, positive emotion, interaction with product, interaction with society, perceived usefulness, and perceived entertainment. All scale items used five-point Likert scales anchored between "strongly disagree" and "strongly agree", except that items of product interest were based on five-point semantic differential scales.

Initial purchase intention pertains to the likelihood that the gamers would decide to buy the product being advertised in a social game after the game ends. The measurement for initial purchase intention was adapted from the scale of Dodds et al. [1991]. Product interest refers to the degree of curiosity and attention for the product being advertised in a social game after the game ends. The measurement for product interest was adapted from the study by Olney et al. [1991]. Positive emotion is defined as the degree of gamers' positive feelings toward the virtual product being presented in a social game after the game ends. The measurement for positive emotion was adapted from the study by Chaudhuri and Hoibrook [2001].

Interaction with product denotes the intensity and effect of gamers interaction with the virtual product placed in a social game. Interaction with society refers to the intensity and effect of gamers interaction with friends in a social game using the virtual product placed as a medium. The measurements for interaction with product and with sociality were developed in the current study through a series of discussion with two professors and 12 graduate students majoring in marketing. Perceived usefulness is defined as the degree by which the provided information helped gamers understand the product being advertised in a social game. The measurement for perceived usefulness was adapted from the study by Jiang and Benbasat [2007]. Perceived entertainment refers to the degree of product information included to entertain gamers in a social game. The measurement for perceived entertainment was adapted from the studies of Koufaris [2002] and Brackett and Carr [2001].

#### **4. Results**

A structural equation modeling technique called partial least squares (PLS) was used to test the theoretic model. The PLS-Graph 3.0 software is used [Chin 2001].

##### **4.1. Measurement model**

Composite reliability (CR) is a rigorous estimate of reliability [Chin & Gopal 1995]. All the values of CR are above 0.770 (Table 1), meeting the criterion of reliability [Chin & Gopal 1995]. The high values demonstrate the reliability of the measurement model.

The present study examined the content validity, convergent validity, and discriminate validity of the measurement model. The content validity was established by the feedback from two Marketing professors and the pilot test. The values of factor loadings are above or near 0.700. The average variance extracted (AVE) values of all constructs are above 0.530 (Table 1). The results support the convergent validity of the measures [Fornell & Larcker 1981]. In addition, according to Fornell and Larcker's evaluation criterion, the correlations between all latent constructs must be significantly less than the corresponding square root of AVE. The results show that the square root of AVE values of all constructs are significantly higher than the corresponding correlations among the latent constructs (Table 2), which supports the discriminant validity of the measures. All the criteria demonstrated the construct validity of the measurement model.

Table 1: Latent variables statistics

Construct	Item	Measurement	Loading	CR	AVE
Initial purchase intention	IPI1	The likelihood of purchasing XX in the future.	0.903	0.909	0.769
	IPI2	The probability of considering buying XX in the future.	0.852		
	IPI3	The willingness to buy XX in the future.	0.875		
Product interest	PI1	Not make me curious ---Make me curious.	0.882	0.936	0.829
	PI2	Not interesting ---very interesting.	0.932		
	PI3	Not keep my attention---keep my attention.	0.917		
Positive emotion	PE1	The virtual XX being presented in the game gives me pleasure.	0.876	0.886	0.722
	PE2	The virtual XX being presented in the game makes me happy.	0.852		
	PE3	I feel good about the virtual XX being presented in the game.	0.821		
Interaction with society	IS1	During playing the game, I kept in touch with friends by taking goods related to XX away from each other's garden.	0.631	0.770	0.530
	IS2	During playing the game, I and my friends gave many virtual XX to each other.	0.808		
	IS3	My interpersonal relationship was strengthened by playing the game.	0.734		
Interaction with product	IP1	During playing the game, I invested a huge amount of time and effort to produce virtual XX.	0.660	0.808	0.586
	IP2	I kept my attention on the information about the virtual XX in the game.	0.789		
	IP3	I was very familiar with the virtual XX by playing the game.	0.835		
Perceived usefulness	PU1	The information in the game was helpful for me to evaluate XX.	0.766	0.832	0.623
	PU2	The information in the game was helpful in familiarizing me with XX.	0.839		
	PU3	The information in the game was helpful for me to understand the performance of XX.	0.762		
Perceived entertainment	PEN1	The product information about XX was entertaining in the game.	0.803	0.876	0.703
	PEN2	The product information about XX was enjoyable in the game.	0.830		
	PEN3	The product information about XX was exciting in the game.	0.881		

Table 2: Correlation of constructs and AVE

	1	2	3	4	5	6	7
1. Initial purchase intention	0.877						
2. Product interest	0.307	0.910					
3. Positive emotion	0.468	0.437	0.850				
4. Interaction with society	0.556	0.226	0.408	0.728			
5. Interaction with product	0.574	0.256	0.351	0.627	0.766		
6. Perceived usefulness	0.552	0.325	0.334	0.588	0.653	0.789	
7. Perceived entertainment	0.585	0.325	0.447	0.655	0.668	0.706	0.838

Note: The square root of AVE on the diagonal, correlations between constructs on the off-diagonal

4.2. Structural model

The results show that the standardization path coefficients are statistically significant ( $p < 0.01$ ), except for the coefficient of perceived entertainment to product interest. The  $R^2$  of the initial purchase intention is 0.232 (Figure 2).

Figure 2 shows that product interest and positive emotion affects the initial purchase intention of gamers. As the present study hypothesized that positive emotion and product interest positively influence initial purchase intention, hypotheses 4 and 7 are supported. Interaction with product and society are predictors of the positive emotion of gamers. As the present study hypothesized that the two factors positively influence positive emotion, hypotheses 1 and 2 are supported. Positive emotion affects the product interest of games. As the present study hypothesized that positive emotion positively influence product interest, hypothesis 3 is supported. Perceived usefulness has significant effect on product interest, but perceived entertainment has none. As for the paths from perceived usefulness and entertainment to product interest construct, the results were somewhat mixed. Hypothesis 5 is supported, while hypothesis 6 is not.

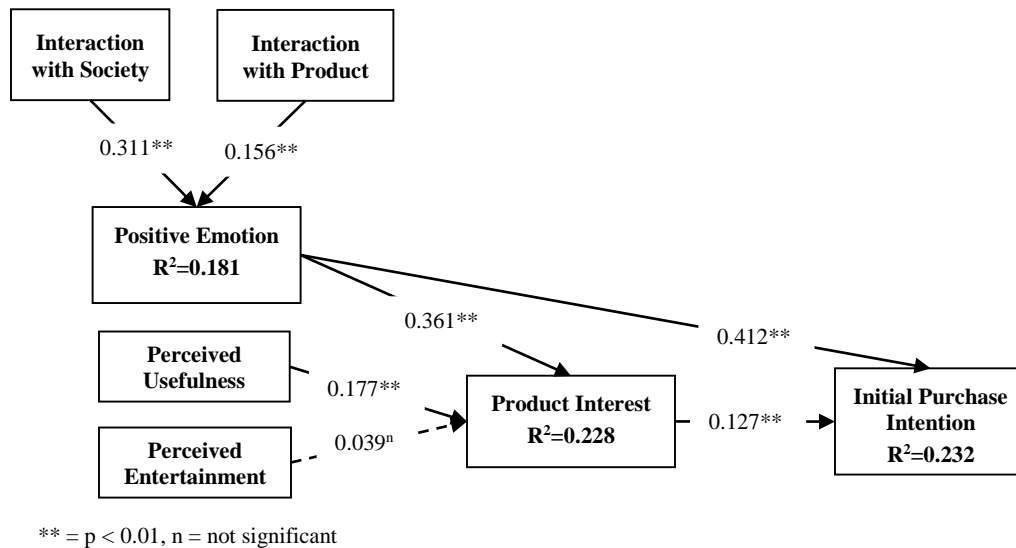


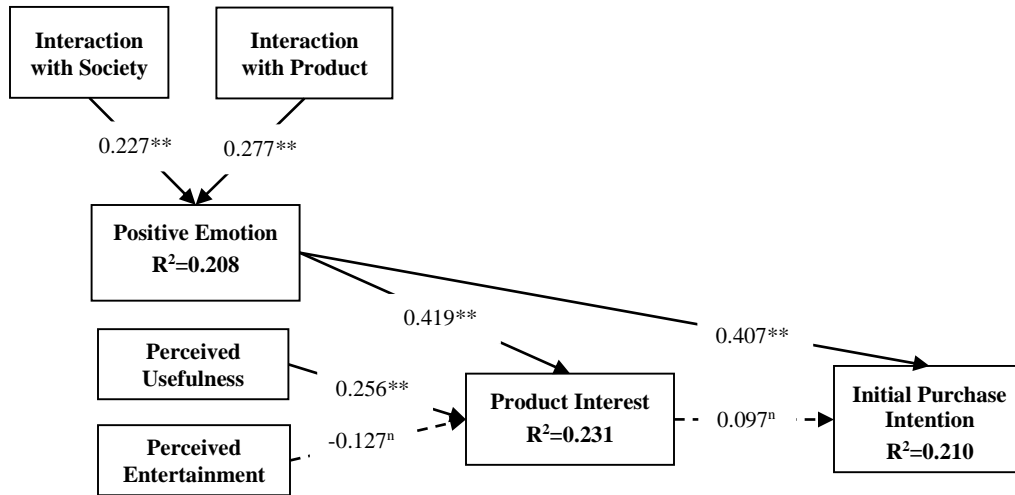
Figure 2: PLS Analysis of Research Model

4.3. Moderating analysis

The present study further examined the moderating effect of product familiarity. The 267 participants were divided into two groups: the first group consisted of 142 participants who were familiar with product; the second group comprised 125 participants who were unfamiliar with product. The structural models of the two groups were examined by using PLS. Sample sizes of the two groups all exceeded the recommended minimum sample size [Chin 1998].

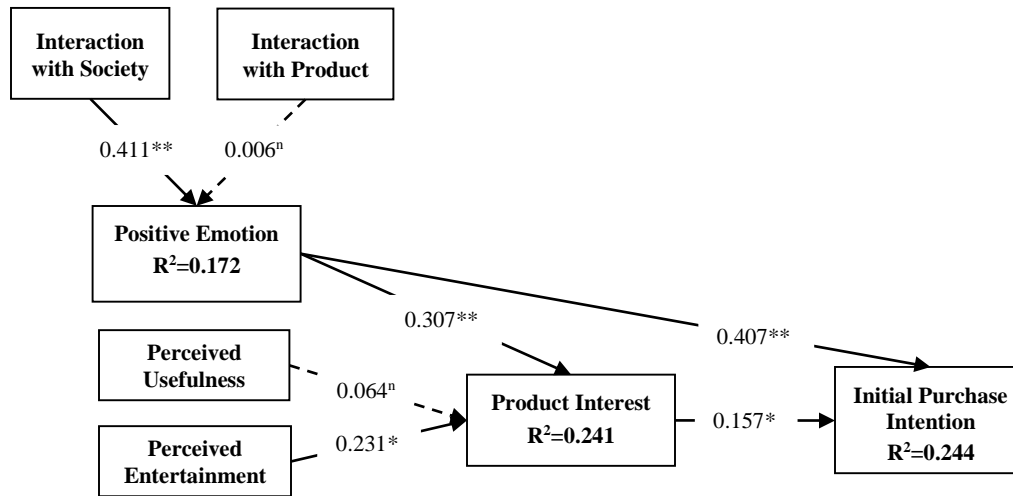
The two structural models show that the paths from interaction with product to positive emotion, perceived usefulness and entertainment to product interest, and product interest to initial purchase intention were obviously different between the two groups (Figure 3a and Figure 3b). Hypotheses 8a, 8c, 8d and 8e are supported. A multi-group analysis was employed to test the differences in the strength of the path coefficients of the other paths between the two groups. T-test results indicate that the strength of the path coefficient is different in the path from positive emotion to product interest between the two groups. Hypothesis 8b is supported. No significant difference is found in the paths from interaction with society to positive emotion and positive emotion to initial purchase intention between the two groups.





\*\* =  $p < 0.01$ , n = not significant

Figure 3a: The structural model of familiar product



\*\* =  $p < 0.01$ , \* =  $p < 0.05$ , n = not significant

Figure 3b: The structural model of unfamiliar product

## 5. Discussion

Interaction with product has a significant positive effect on the positive emotion of social gamers who are familiar with the product. However, no significant effect is observed among social gamers who are unfamiliar with the product. The experience of playing social games with product placements may evoke social gamers' feelings toward the presented virtual product [van Reijmersdal et al. 2010]. Social gamers who are familiar with the product can therefore distinguish the virtual product from other virtual items in the game, whereas those who are unfamiliar with the product cannot do the same. Hence, interaction with product has a significant effect on the positive emotions of the social gamers who are familiar with the product but not those of social gamers who are unfamiliar with the product.

Interaction with society has a significant positive effect on the positive emotions of social gamers. Through playing social games with product placement, social gamers can establish and maintain their interpersonal relationships using, for example, a virtually placed product as the medium. They may have positive affective attitude toward the virtual product which plays a positive role in improving their interpersonal relationships. For example, virtual juice gifts were sent over 120 million times through the game. The improvement in interpersonal relationships may result in the development of positive emotions in social gamers toward the virtual Lohas Juice, which represents the connection ties.

Positive emotion toward a virtual product has a significant positive effect on the product interest of social gamers. Furthermore, the strength of the path coefficient is higher in the group familiar with the product than in the group unfamiliar with it. This finding indicates that when social gamers feel positive emotions as a result of the virtual product in the game, their interests in the real product are positively biased. Product placement can enhance the realism of the game in the case of familiar products [Mackay et al. 2009]; thus, the effectiveness of mood congruence bias is significant for familiar products. Hence, positive emotion has a stronger effect on product interest in familiar products than on the interest in unfamiliar products.

Meanwhile, positive emotion toward a virtual product has a significant positive effect on the initial purchase intention of social gamers. Moreover, the moderating role of product familiarity is insignificant. This finding suggests that positive emotion toward a virtual product is an effective non-content cue to evoke the purchase intentions of social gamers toward the corresponding real product.

The perceived usefulness of product information has a significant positive effect on the product interest of social gamers who were previously familiar with the product, whereas no significant effect is observed in the group of gamers who are unfamiliar with the product. On the contrary, perceived entertainment has a significant positive effect on the interest of gamers in unfamiliar products, whereas no significant effect is detected on those who are familiar with the product. The results fit those of Snyder and Stukas [1999] and Campbell and Keller [2003]. First, consumers are more likely to update their existing knowledge when exposed to an advertisement for a familiar product [Snyder & Stukas 1999]. Second, consumers pay more attention on novel and interesting advertisements for unfamiliar products [Campbell & Keller 2003].

Product interest has a significant positive effect on the initial purchase intention of social gamers who were unfamiliar with the product previously, whereas no significant effect is observed on the group that is familiar with the product. Given that a stable attitude toward the advertised product already exist for familiar product prior to playing the game (Mau et al., 2008), the additional product interest in the game is hard to change the purchase intention of social gamers for familiar product. Social gamers who are unfamiliar with the product need to rely on their interest in the product to make purchase decisions because they lack prior product knowledge.

## **6. Conclusions, Implications, and Future Research**

Product placement in social games has become a growing trend in recent years. This paper examined the effects of interactions and product information on the initial purchase intention of social gamers in response to product placement in social games. This study further examined the moderating effects of product familiarity. As such, the current study has important implications for both academic and industry research.

The findings have implications for academic research. First, our study aims to understand the effects of interactions and product information on the initial purchase intention of social gamers. While some prior studies have focused on in-game advertising and advergames, the goal of our study is to empirically investigate advertising in social games. This study is one of the first to examine how product placement in social games influences the initial purchase intention of social gamers by integrating the gaming and advertising attributes. Second, the results demonstrate the positive emotion of social gamers toward a virtual product, which develops as a result of direct and indirect interactions with the virtual product in social games, can be transferred to their interests toward the corresponding real product. This finding reveals the psychological mechanism of emotion transfer from the virtual product to the real product. Third, this study specifies the heuristic and systematic processing modes in the context of product placement in social games, which provides additional insights into dual-process theory. Fourth, previous studies have paid little attention to the product familiarity that is ascribed to product placement in social games. The present study reports that product familiarity is an important moderator and specified different processing modes for familiar and unfamiliar products. This research provides additional insights into the role of product familiarity in product placement.

In addition, our findings may deepen the understanding of companies regarding how product placement affects the initial purchase intentions of social gamers. Product familiarity is an important moderator; thus, companies should adopt different advertising strategies for various products in social games. On the one hand, the study findings suggest that companies whose products are widely known in the marketplace should focus on increasing interactions between gamers and virtual products, as well as between gamers and the gamers who use virtual products as mediums. Thus, marketers should collaborate with social game developers to develop various missions in social games that involve continuous interactions with virtual products and with other gamers by using the placed virtual products as mediums. On the other hand, the study results also recommend that companies whose products are new to the marketplace should improve interaction between gamers who use virtual products as mediums. Moreover, they should provide entertaining product information in the games. Thus, marketers should also collaborate with social game developers to seamlessly

integrate entertaining product information into the existing game environment, as well as to incorporate various interactive missions into the games that require gamers to interact with other gamers.

Although the findings have meaningful implications, the present study has several limitations that should be addressed in the future. First, given the big difference among the extant cases under the product category, only one case was employed in this study as the survey background. In the future, more studies about other product categories should be conducted. Second, the present study used product interest to describe the psychological response of social gamers in the systematic processing mode. However, this variable does not significantly affect the initial purchase intentions of social gamers when they are familiar with the placed product. Therefore, researchers should take other psychological response factors into consideration. Third, this study did not control some demographics information, such as occupation, income, and experiences with social games. Such limitations must be considered in future research.

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