Evaluating Telepresence Experience and Game Players' Intention to Purchase Product Advertised in Advergame

Zuhal Hussein, Nabsiah Abdul Wahid, Norizan Saad

Abstract—In line with changes of consumers modern lifestyle has call for the advertising strategy to change**.** This research is to find out how game with telepresence and product experience embedded in the computer game to affect users' intention to purchase. Game content developers are urging to consider of placing product message as part of game design strategy that can influence the game player's intention to purchase. Experiment was carried out on two hundred and fifty undergraduate students who volunteered to participate in the Internet game playing activities. A factor analysis and correlation analysis was performed on items designed to measure telepresence, attitudes toward telepresence, and game player intention to purchase the product advertise in the game that respondents experienced. The results indicated that telepresence consist of interactive experience and product experience. The study also found that product experience is positively related to the game players' intention to purchase. The significance of product experience implies the usefulness of an interactive advertising in the game playing to attract players' intention to purchase the advertised product placed in the creative game design.

Keywords—Purchase Intention, Telepresence, Product Experience, Interactive Experience

I. INTRODUCTION

DESPITE the advancement of the state-of-art of information technology, marketers are expected to change their advertising strategy to 'astounding' one such as the use of advergame. Sign of advergames are increasingly being used as part of a marketing campaign to promote products are seen when many of the companies to start operating online [1].

Use of advergame as an advertising medium, and telepresence factors in delivering product information are very much important. Wallace and Robbins [2] differentiated advergames as executions from simply repurposing an existing, well-known game to feature the brand or product as a central feature in the gaming environment to create more

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elaborate, custom-built game that involve detailed virtual experiences with the brand's product. This is to ensure that the game players are able to recognize product information/message during the game experience. Nevertheless Suh and Chang, [3] study on the role of telepresence on the consumers' perceptions explained that users mediated environment for interaction helps in terms of transmitting the information to the users and reduces the discrepancies between online product information and actual products, directly or indirectly. For instance advergames are expected game players to enjoy the game experience while product information that placed in the game influences the game players without players' consciousness.

Despite a few notable exceptions of telepresence study there is a paucity of research on which computer games are developed to ensure the advergame effectiveness. There are still fewer studies on advergame that focus on telepresence and product message as one construct. What are the major influences on whether or not telepresence game to have influence to game players purchase intention? This paper provides some much-needed empirical answers to this question. This study is to explore the effectiveness advertising message of product experience placed in the game environment to increase the player's feeling of telepresence or being real in to the mediated game environment. It is expected that users feeling of being present in to the game environment have an effect on game players' behavioral in their physical life.

II. LITERATURE REVIEW

Study on users' experiences from virtual environment has observed that users feeling mediated in the 'real-world experience' are to increase sales [4]. Baumann and Sayette, [5] study on use of interactive advertisements with elements of virtual reality consist of two ways interaction is more effective compared to the same information that provided passively. During the game experiences, players also tend to respond to human and nonhuman of characters and objects placed in the game designed to communicate information [6-8].

Previous literatures have identified the lacking on how human appearances and behaviors to influence users levels of telepresence [9-12]. It is important to highlight that in creating a good game content the information must have the element of

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telepresence [13]. Furthermore, game content with lacks of clarity of purposes to leave the game player with negative experience to remember [14].

Use of telepresence that integrates with advertising elements embedded in the advergame is anticipated to affect users' behavior intention. Elements inserted in game can cause to increase the users' participation and to keep on users playing the game [15]. As such, Dickey [16] suggests that there is possibility for designing the games that take players' time, emotion and problem solving skills by advertiser for advertising approach which is still in doubt. As advergames are expected to add value to product advertisement through a two-way media interaction that happens when a game player interacts with the game space, characters, and objects placed in the game.

A. Purchase Intention

Previous studies on the creation of telepresence [17, 18] do not examine the role of telepresence in the purchase intention context. Fattah and Paul [19] study on advertising field mentioned that it is hard to know the effectiveness of the advergame on the possibility of the game players to purchase the advertised product. However Chen, Griffith, and Shen, [20] observed that use of technology can be an effective medium in helping consumers to understand the product that can cause to users' purchase intentions.

Purchase intention elegantly defined by Howard and Sheth, [21] and Mathieson, [22] as the probability that a consumer plans to buy a certain brand or product during a certain period of time and this is happened after the consumers simplified the tasks by storing relevant information to establish the purchase decision. Game player's purchase intention in this study is pictured from Fishbein and Ajzen, [23] who proposed that people's evaluation toward an object is decided by their reachable beliefs about the object while conducting behavior intention. This explained that purchase intention is a personal action tendency toward the advertised products from advergame experience.

Game industry has valued the potential to insert the persuasive advertising as a value-added benefit to adgames, where product experienced is used by the game characters or integrated into the background of the game contents. Advergame has becoming more effective when the advertising messages inserted in virtual reality environment of the game [24, 25]. Kwak, Fox, and Zinkha [26] also suggested that the greater a game player admits the advergame as an understandable way for advertising communication, the more likely that a game player is intended to purchase the goods and services. Therefore it is expected that the advergame has potentially influenced the game players' intentions more than the same interactive advertising message that provided passively.

Advergame lead the necessity of probing the role of telepresence specifically in game as a function to realize users' feeling while playing game. This study is to explain from a game player experience, that players are able to imagine and enhanced by seeing a product image in a game. The increment in purchase intention is identified when imagery involving product use was stimulated [27]. Therefore, players' product experience from playing game are expected to be more effective, as the game players are frequently exposed to the imaginary view compare to other mediums. For that reason it is important for a game content developer to consider telepresence in to the game environment in ensuring the users behavioral intention on the product advertise. Besides, there is a need for marketer to intensely understand the content of the game to create users' intention to purchase as one of the core value.

B. Telepresence

The literature on telepresence is to explain a game player feeling present in the mediated environment. The concept of telepresence is important in this study to focus on the effects of perceived telepresence experience by the consumer. Thus, games that incorporate a greater number of senses (audio and visual) are likely to cause consumers to experience a higher level of telepresence. Hence, Cook and Coupey [28] suggest that display environment which often incorporates video, text and sound, contain more contextual cues for decision making than traditional advertising.

Game player feeling present in two separate environments known as: The physical environment in which player is actually present and the environment presented via the medium of the game [29]. Game player feeling present in the mediated environment allow them to experience a product directly from the virtual game session. This effect of real experience is expected to be stronger compare to indirect experience before the playing session. Direct product experience has to be more clearly formed, combination of high persistent knowledge a game player has, high confidently held to form a clear judgment, high accessible, more stable and exhibit higher attitude-behavioral consistency [30]. Shih, [31]; Klein, [32]; and Fiore, Kim, and Lee [33] have observed the positive impact of simulated product experience or telepresence on online consumer responses. It was found that consumers are likely to develop stronger beliefs about product in a computer mediated environment when they are exposed to product information in telepresence experiences [32].

From the advergame objective, telepresence is more concerned of the game player feels immersed [34] in the game environment represented by the medium [11, 35]. Further study by Choi, Miracle, & Biocca, [36] suggests that player presence as the perceptual illusion of being present in the game environment, and perceived objects that were found there as equally present [37]. Earlier studies have theorized that the telepresence consist of two distinct dimensions: interactivity and vividness [29, 38]. Game interactivity (ability to act on the environment) and vividness (sensory richness) employ in the advergame expected to heightened perception of telepresence.

Interactivity is defined as "the extent to which users can participate in modifying the form and content of a mediated

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environment in real time,"[29] (p.84). Rafaeli [39] defines interactivity as "an expression of the extent that, in a given series of communication exchanges, any third (or later) transmission (or message) is related to the degree to which previous exchanges referred to even earlier transmissions" (p.111). In online literature Reichheld and Schefter [40] noted that customer tend to increase repetitive usage of functions or services provided by interactivity. A survey conducted by Engage Technologies and Nvision estimate that 80 percent of internet users ignore to visit to a same site because of interactivity affect users to visit [41]. For example, Choi, Miracle, and Biocca [36] study on consumers' responses to interactive advertising found that people exposed to interaction that generating perceived presence tend to have more favorable intentions to revisit.

Vividness is the representational richness of a mediated environment. Many theorists have stressed that vivid messages will be more persuasive than plain messages. Nisbett and Ross [42] argue that vividness information as likely to attract and hold users attention and to excite the imagination to the extent it is (1) emotionally interesting, (2) concrete and image-producing, and (3) proximate in a sensory, temporal, or spatial way (p.45). Vividness is stimulus driven, depending entirely upon technical characteristics of a game medium, and there are many factors contribute to vividness. Steuer [29] identified factors that contribute to vividness are sensory breadth and depth where it can be understood that sensory breadth is referred to the number of sensory dimensions simultaneously presented within the game.

C. Persuasive advertising

Coyle and Thorson, [17] and Eisenmann [43] in online marketing studies, found that delivering vivid product information or advertisements is crucial for effectiveness in raising online users' purchase intentions. Current study by Salo & Tähtinen [44] identified that existing research, and the empirical data on game advertising not exploit the game features in order to create the uniqueness and effectiveness of the game advertising.

Advergame is unique, when users are required control actively during the sequences. Game content with the telepresence effect is important in designing a good advergame. From users' perspective Nass and Steuer [45] found rationale for the game users to treat advertising message as natural interaction and socially respond to it as in physical environment which player is present. However this study is to improve on how to integrate the design of a game content into an integrated persuasive game advertising environment.

It should be understood that the advergame provide an interactivity to the player that allows player for both activities of playing and viewing display environment (video, text and sound), therefore playing game able to enhance a sense of the telepresence [46]. For example when a game player experienced the product information of advergame, they are possibly to remember the advertising message and physically respond to purchase the advertised product. Therefore it is

crucial to hypothesize that how the experiences of the telepresence can cause users feeling mediated in virtual environment with assumptions that it may affect the game players purchase intention. In this case, it can be postulated that:

H1: There is a significant and positive relationship between telepresence (experience) and users' intention to purchase product placement in the advergame.
H1.a: There is a significant and positive relationship between vividness and players' intention to purchase the product advertise.
H1.b: There is a significant and positive relationship between interactivity and players' intention to purchase the product advertise.
H1.c: There is a significant and positive relationship between product experience and players' intention to purchase the product advertise.

III. METHODOLOGY

Thus it is essential to carry out experiments that can manipulate the variables that make up the perceptual illusion of being present. The objective of this study is to examine the aspect of telepresence with product placement on the influence to the game players' intentions to purchase the product advertised. Volunteered undergraduate students of Universiti Sains Malaysia were invited to participate in this experimental study in computer laboratory. Experimental method was adopted to ensure the cause and effect relationship between persuasive advertising in game mediated environment and the game player intention to be clearly established. Furthermore, this experimental research was employed to ensure its effectiveness when consumers are exposed to the medium then queried with explicit (memory) or implicit (brand evaluation) measurement [47].

A total of 250 questionnaires were distributed to the respondents and they were requested to answer the questionnaires, immediately once they have completed the game play in order to explore the hypothesized role of the differences between their experiences. This focus has done much to widen the perception of what a game player forms the behavior intention through the usage of games. The questionnaire contained 3 sections; Section A was designed to collect demographic related information, Section B was designed to collect the telepresence related information (i.e. vividness, interactivity, and product experience) lastly Section C was designed to measure respondents' purchase intention on the advertise product. Respondents were asked to indicate their agreements or disagreements based on a five-point Likert scale with.

IV. RESULTS

The demographic profile of respondents collected for this study is an important aspect since the findings probably different from other studies. Frequency analysis was undertaken to measure respondents' demographic

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characteristics and their game related activities, and behavior preference. The results of analysis were presented in Table 1 as below:

TABLE I PROFILE OF THE RESPONDENTS

Demographic Variables	Frequency	Percent (%)
Gender		
Male	81	32.4
Female	169	67.6
Ethnicity		
Malay	150	60.0
Chinese	88	35.2
Indian	10	4.0
Others	2	.8
Age (Years)		
19 - 20	25	10.0
21 - 25	217	86.8
Above 25	8	3.2
Study Field		
Sciences	140	56.0
Arts	109	44.0
Weekly game playing		
0 Hours	12	4.8
1 - 8 Hours	175	70.3
Above 8 Hours	62	24.9
Preferred Game Mode		
Single player	175	70
Multiple player	75	30
Preferred Game		
Free Game	245	98
Paid game	5	2

The results of analysis revealed that most of the respondents are female, which is 67.6% from total of respondents while 32.4% are male. In term of ethnicity, majority of respondents are Malay (60%) followed by Chinese (35.2%), Indian (4%) and others ethnics (2%). Most of the respondents aged between 21 to 25 years old (86.8%), and 10 percents of total respondents aged 19 to 20 years old, while 3.2 percents are respondents aged above 25 years old.

Most of the respondents 56 percents are sciences students and 44 percents are arts students. In terms of game playing activity majority of respondents with total of 70.3 percents, played game between 1 to 8 hours per week. 70 percents of total respondents' preferred single playing mode and almost all of respondents accumulated 98 percents of total respondents preferred game that available for free from any fee or charges for playing.

A. Goodness of measurement

A factor analysis with varimax rotation was done to validate whether the respondents perceived the four constructs to be distinct. The results demonstrated a two factors solution with eigenvalues greater than 1.0 and the total variance explained was 57.70% of the total variance. KMO measure of sampling adequacy was 0.909 indicating sufficient intercorrelations while the Bartlett's Test of Sphericity was significant (p = 0.00). Table 2 shows the results of the factor analysis. These results confirm that each of these constructs is unidimensional and factorially distinct and that all items used to measure a particular construct loaded on a single factor

except for perceived interactivity and vividness which became a 1 factor solution.

TABLE II FACTOR ANALYSIS

Items	Factor Loading	
	Factor 1	Factor 2
Product desirable	.811	
Product to purchase	.778	
Product quality	.752	
Product to recommend	.752	
Product display	.743	
Product feeling	.731	
Product appealing	.643	
Inside the game scene		.806
Really there		.771
Immersed		.768
Game surrounded		.760
Observed the game		.708
Visited the game		.695
Game preference		.534
Intense to the game		.451
Eigen-Value	7.16	2.29
Percentage Variance Explained	45.00	12.70
Reliabiliy (alpha)	.915	.894
Total Variance Explained	57.70	
Measure of Sampling Adequacy (KMO)	.909	
Barlett's Test of Sphericity Significant	.00	

However from the result it was found that users' interactivity split between vividness factors and they are relabeled as new dimension known as interactive experience that is grouped in factor 2. The factor contained 8 items which are vividness (4 items) and interactivity (4 items). As been mentioned earlier, there is a lack of success at understanding telepresence. One possible reason that research on the enduring nature of vividness has led to have conflicting results in the past where the researchers often have not differentiated between messages and presentations of the messages without such knowledge, an understanding of message will be incomplete and it may also be inaccurate [48]. Study by Newhagen et al. [49] was one of the first studies to operationalize interactivity as a perception of the individual. Similar to vividness that is considered as a contributor to the perception of real experience in mediated environment [29]. Based on the arguments of Bretz [50], Rafaeli and Sudweeks [39] and others, one can assume that major prerequisite to calling vividness and interactivity as interactive experience. Furthermore, previous study also have identified of inconsistency in the usage of telepresence [51] and to measure telepresence [9, 10, 12, 52, 53].

Table 3 presented the intercorrelation matrix between the main variables of this study. Interactive experience and product experience is positively related to purchase intention measures.

TABLE III INTERCORRELATION MATRIX

	Interactive Experience	Product Experience	Purchase Intention
Interactive Experience	1		
Product Experience	.502**	1	
Purchase Intention	.342**	.696**	1

** Correlation is significant at the 0.01 level

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As tabulated in Table 3, the results of Pearson correlation suggested that the two dimensions of telepresence namely Interactive experience (r=.342, p<.00), and product experience (r=.696, p<.00) are positively and significantly correlated with players' intention to purchase the product advertised. Thus hypotheses H1 is supported.

V. DISCUSSION AND CONCLUSION

This study indicated a significant relationship between the product experience and intentions to purchase. This relationship is found in a positive correlation from users' telepresence experiences. Therefore the findings of this study explains that belief about an object from the mediated environment is the basis for the game player intention to perform a behavior. The findings of this study validate previous findings in terms of game player intention to purchase the brand advertise [31-33]. This has contributed to adequately assess the understanding of game player experience that helps game content developer to decide on creative design of advergaming.

This study offers a great contribution by observing new approach of understanding the game player perception particularly to comprehend the role of persuasive advertising of product experience that is postulated to have an effect on game player's purchase intention. It is important to highlight here that the existing literature heavily emphasized to consider game as persuasive advertising medium in designing the game content [54-56]. Recent calls have forwarded the issue of looking at the new telepresence concept which this study has made an attempt to close the gap from social-technical behavior perspective.

The findings also revealed that users who exposed to the interactive experiences have significant relationship with intention to purchase. These findings explained that interactive experience of playing a game such as the audio and visual have project game players purchase intention of the brand advertised. This is astounding the fact that the game players in this study are able to determine the interactive experience based on the information of descriptive analysis. Thus the role of interactive experience as a cue to determine an interactive experience which is consistent with the view of Lombard and Ditton [57], stated that "images which are more photorealistic . . . are likely to provoke a greater sense of telepresence". Specifically, the results of this study display that telepresence perception is an important determinant of user's intention whereby it is positively and significantly influence overall users' intention to purchase the product advertised.

It has proven that telepresence to be a important driver of game players' purchase intention. The findings of this study, has led to a new conceptual definition of telepresence which stress on the importance of product experience as part of telepresence indicator. From the game content developer's perspective the ability to create a creative game content that can make a game player feel present in to the game space

environment, expected to increase significantly the game players' purchase intention. Therefore game content developer may exploit the game player's perception towards telepresence with the enhancement of the game creativity and vividness of the characters, object, symbol, and message employed in to the game space.

While from marketing strategy perspective the findings of this study provide some implications in business strategy to face the current competitive business challenge. The marketers are expected to get in aggressively to the consumers who mostly spend time playing game online which need for marketer to understand the game player preference when designing the game content and to place only resourceful information so not to distract the game player's focus.

VI. LIMITATIONS AND RECOMMENDATIONS

However this study has several limitations such as limited numbers of respondents volunteered to participate in this experiment and female respondents are more than male respondents. Therefore future research is expected to have a larger numbers of male respondents in order to ensure that the results will represent a total population.

Future studies are also expecting to cover a different kind of the game devices and challenge genres. The combinations of the product experience with other dimensions of the telepresence would be the critical factors that can lure users to purchase the brand advertised.

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