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ANTECEDENTS AND CONSEQUENCES OF THE SPATIAL PRESENCE OF POKEMON INFLUENCES GAMER IN INDONESIA

Gentrifil Gamastra Chaniago
Master of Management Program,
Ahmad Dahlan University,
Yogyakarta 55161, Indonesia

Zunan Setiawan
Master of Management Program,
Ahmad Dahlan University,
Yogyakarta 55161, Indonesia

Raerake Setyawan
Master of Management Program,
Ahmad Dahlan University,
Yogyakarta 55161, Indonesia

Abstract

This study attempts to identify the factors that influence gamer responses to in-game marketing efforts by building and testing a conceptual model that explains the psychological processes of how mobile gameplay leads to marketing outcomes. Although this study collects data only among Pokemon GO gamers, the conceptual model focuses on the factors that characterize location-based mobile gaming as a whole. Therefore, the ultimate goal of this study is to explore the behavioral impact and marketing implications of a mobile game supported by location-based services. A survey was conducted among Pokemon GO gamers in major Indonesian cities to examine the psychological process of gameplay and how it affects some marketing results. The research was conducted using an online survey which was distributed to the target respondents. The total data after the screening process was 593 respondents who met the requirements. The results show that Pokemon GO gamers experience spatial presence, which positively influences attitudes and intentions to visit sponsors. In addition, spatial presence was positively influenced by player involvement, perceived mobility, and contextual perceived value. Several motives for playing Pokemon GO were also identified, including entertainment motives and social motives. The results mean a lot to market professionals interested in this innovative media platform and interactive marketing research with mobile games. Spatial presence was positively influenced by player involvement, perceived mobility, and contextual perceived value. Several motives for playing Pokemon GO were also identified, including

entertainment motives and social motives. The results mean a lot to market professionals interested in this innovative media platform and interactive marketing research with mobile games. Spatial presence was positively influenced by player involvement, perceived mobility, and contextual perceived value. Several motives for playing Pokemon GO were also identified, including entertainment motives and social motives. The results mean a lot to market professionals interested in this innovative media platform and interactive marketing research with mobile games.

Keywords: Pokemon GO, Attitudes, Intentions to visit sponsors, Player involvement, Perceived Mobility, Spatial presence

1. Introduction

1.1 Introduce the Problem

GPS and location services have created more location-aware games that teach us new types of experience and sketch new locations for future gameplay (Lammes and Wilmott, 2016). Pokemon GO is probably the most well-known and successful example of this type of game (Dogtiev, 2016). Location-based marketing has experienced tremendous growth in the past few years (Rosenblatt, 2016). With the rapid development of location intelligence, marketers can collect location-based information to target consumers better and meet their needs. Because of the widespread prevalence of location-based mobile games, marketers try to figure out how to leverage these games to target consumers (Ollila, 2017). Increasing academic attention has also been paid to location-based marketing (Attahiru Gana et al., 2016). For example, previous scholars have analyzed location-based mobile commerce (Tsai et al., 2017), location-based advertising (Molitor et al., 2017), and taxi mobility for location-based marketing (Money et al., 2017). However, relatively little effort has been taken to investigate the marketing potential of location-based mobile games. To both practitioners and scholars, this type of game as a marketing tool is essentially a black box, and little is known concerning what factors influence the marketing outcomes in these games.

Location-based mobile games, the game environment is constructed based on real locations. Compared to those mobile games without GPS support, location-based mobile games offer players a real-time presentation of their actual surroundings. In other words, the game interface is decided by players' actual locations in the real world. Such a vivid display of the geographic elements and the adoption of location- tracking technologies often benefice players' perceived fidelity of the game world (Bystrom et al., 1999). Given that spatial presence occurs when individuals perceive a vivid presentation of a virtual world as a natural space, it is believed that the theory of spatial presence can capture the psychological experience of playing location-based mobile games.

According to Wirth et al. (2007), the formation of spatial presence is a two- step process. The first step is to detect space-related cues in the virtual environment, and the second step is the actual formation of spatial presence. As discussed below, this two-step logic provides the theoretical justification for predicting the relationships among the constructs in the present conceptual model. In the first step, users' motives and engagement are the antecedents to spatial presence because these factors either influence or indicate individuals' attention devoted to the gameplay, which is a prerequisite for experiencing spatial presence. Players' perceptions of some

unique features of location-based mobile games are included as influential factors of spatial presence in the second step because these features may strengthen the spatial sensation of the game environment and eventually lead to spatial presence.

Experiencing spatial presence, individuals need first to construct a mental model of the mediated situation that includes space-related information. In other words, individuals need to figure out whether the mediated environment is a space in their minds. Step requires a significant amount of attention allocated to the interaction with the medium because individuals can only perceive the mediated environment as a non-mediated place when their attention is driven away from the natural environment (Wirth et al. 2007). The experience of attention being allocated mainly to the gameplay can be captured by the concept of game engagement, which refers to the mental state of being involved and interested and devoting attention to playing video games (Pagani and Malacarne, 2017).

Based on the self-determination theory, Bouvier et al. (2014) identified several factors that would contribute to players' engagement games. The scrutiny of Pokemon GO confirms the existence of these factors in the game. The environment-related factor refers to the presentation of the game world. The electronic map and augmented reality technology adopted in Pokemon GO considerably increases the virtual game world's vividness and perceived reality. The social-related factor refers to the opportunity of building social connections in the game. Players of Pokemon GO can join one of the three teams and defend Pokegyms with their teammates. Thus, it is easy to connect with other players in Pokemon GO. The self-related factor is mainly about identifying oneself with some game elements, like game avatars. In Pokemon GO, players can customize the appearance of their avatars and choose the Pokemon characters accompanying the avatars. These actions may lead to intense feelings of self-identification. The action-related factor is primarily linked to players' performance or achievement in the game. Pokemon GO has a level-up system and a medal collection task that can satisfy users' accomplishments.

1.2 *Explore Importance of the Problem*

The present study aims to fill this gap by analyzing the marketing potential of Pokemon GO. Specifically, this study attempts to identify the factors that influence gamer responses to the marketing efforts in this game by building and testing a conceptual model that explains the psychological process of how mobile gameplay leads to marketing outcomes. Although this study collects data only among gamers of Pokemon GO, the conceptual model focuses on the factors that characterize location- based mobile games as a whole. Therefore, the ultimate goal of this study is to explore the behavioral impact and marketing implications of mobile games, which are supported by location-based services. The present study is believed to provide valuable insights to both the industry and academia of interactive marketing. From a practical perspective, this study reflects the current trend of media usage and marketing practices. Prior studies of location-based gaming have not been heavily focused on its marketing potential, while previous research of in-game marketing has not scientifically covered location-based mobile games. Therefore, one cannot simply apply the existing models that explain the marketing effectiveness in traditional video games to this emerging media platform. A new model is needed to identify the unique factors that influence location-based mobile games' marketing outcomes.

1.3 *Describe Relevant Scholarship*

In particular, this study focuses on whether and how spatial presence experienced by gamers of Pokemon GO would influence their attitudes toward and intentions to visit sponsors featured in the game. Previous research on digital advertising has examined the effects of spatial presence on persuasion effectiveness. For example, spatial presence has been found to influence consumers' online responses, such as ad attitude (Nicovich, 2005), brand attitude (Li et al., 2002), and purchase intentions (Jee and Lee, 2002). Moreover, the literature on video games has also discovered that players who evaluate the brands exhibited more favorably when they feel a strong sense of presence (Nelson et al., 2006). The affect transfer model (Fishbach et al., 2004) may explain the positive effect of spatial presence on persuasion. It has been confirmed that spatial presence leads to increased enjoyment of the media content. Such an enjoyable experience can be transferred to consumer responses to the embedded advertisements or brands, leading to positive evaluations.

Therefore, it is predicted that gamester spatial presence experience will positively influence their attitudes toward the sponsors and intentions to visit Pokemon GO (Yim et al., 2012). As one of the most successful location-based mobile games, Pokemon GO uses the Pokemon characters through the lens of augmented reality in the gameplay (Althoff et al., 2016). The game allows players to chase and capture their favorite Pokemon in the world using the same algorithm as Google Maps (Herrera, 2016). In looking for the Pokemon characters, gamers have the opportunity to search in real public locations such as parks, restaurants, schools, stores, and coffee shops. Ever since its launch, Pokemon GO has been tremendously prevalent among mobile gamers. According to Tech Crunch (2016), given the prevalence of location-based mobile games, such as Pokemon GO, marketers have started to consider the marketing potential of this new media platform.

Pokemon characters together within a particular area (Morrison, 2016). In addition, Niantic, the mother company of Pokemon GO, has also been trying to increase the business value of this game. In July 2016, companies were allowed to request sponsored Pokestops and Pokegyms for their stores in the game (Ribeiro, 2016). Apart from the industry report that sponsoring location-based mobile games, like Pokemon GO, brings heavy consumer traffic, little is known concerning how consumers evaluate the sponsors in such games and the psychological process of the evaluation (Morrison, 2016). As a result, marketers who want to invest in these games currently have limited research evidence to make decisions. The present study aims to fill this void.

Previous research has confirmed that video games that require players' physical movement give rise to the experience of spatial presence. Compared to traditional console-based video games, location-based mobile games require players to move around in larger geographic areas (typically outdoor locations, like parks, campuses, etc.). Thus, a significant number of physical activities are needed when playing location-based mobile games, making gamers possibly experience enhanced spatial. In other words, spatial presence describes how people feel no gap between themselves and the virtual environment. Although spatial presence is often discussed in virtual reality research, theoretically, it can occur in any mediated communication context as long as the audience gets some spatial cues from the media (Shafer et al., 2011).

Previous research has discovered that people can experience spatial presence when reading books (Schubert and Crusius, 2002) and watching television (Bracken, 2005). The theoretical

foundation of the present conceptual model is the theory of spatial presence. Spatial presence refers to a sense of being there experienced by an individual when part or all of a person's perception fails to accurately acknowledge the role of technology that makes it appear that he or she is in a physical location and environment different from her or his actual location and environment in the physical world. However, the levels of spatial presence vary across different media platforms. In general, digital media activates more senses in users than traditional media, so that a high level of spatial presence is likely to occur in the digital environment. The theory of spatial presence is used in this study as the lens of analyzing user experience in location-based mobile games because of the unique characteristics of this game category (Wirth et al., 2007).
The latest research that has became foundation to this research had showed significant findings related to this topic where contributes to the gaming literature by identifying the antecedents to spatial presence when gamers play Pokemon Go. (Wu and Stilwell, M.A, 2008). The limitation of the latest study from Wu and Stilwell is the research only conducted in one location so they encourage further studies conducted in different places. Also, the author found that in a larger scale area, there are several factors that have different result from the latest research.

1.4 *State Hypotheses and Their Correspondence to Research Design*

In sum, Pokemon GO contains several different factors that would lead players to engage in the gameplay. When players experience a high level of game engagement, they will devote significant attention to the game world. As a result, it may be easy for them to construct the mental model that helps make sense of the virtual world as a non-mediated place. In other words, game engagement may well prepare players to experience spatial presence by driving their attention to the game world. Therefore, it is predicted that players game engagement will positively influence their spatial presence experience in the game of Pokemon GO.
H1. Game engagement will positively influence users' spatial presence when playing Pokemon GO.

Not all people would engage in location-based mobile games equivalently. Some people may experience greater engagement than others because they have specific needs satisfied by this type of game. The uses and gratification approach suggests that individuals' media consumption is driven by their various motives (Swanson, 1987). Previous research has also confirmed that the motives of media use are the antecedents to media engagement (Wu, 2016). To provide a holistic picture of user experience in location-based mobile games, like Pokemon GO, the authors analyze the motives that are believed to coincide with this type of game, namely, exercise, entertainment, and social motives.

Location-based mobile games have been noted to satisfy people's needs for exercise. For example, Wong (2017) found that gamers who used to be sedentary benefit the most from Pokemon GO. Zach and Tussyadiah (2017) discovered that players' enjoyment of Pokemon GO was positively linked to their increased gameplay outdoors. The entertainment motive has been associated with this type of game as well. A typical example of social interaction in Pokemon GO is to connect with other players by winning gym battles together. As noted by Yang and Liu (2017), needs for fun and enjoyment explain a large portion of users' motivation to play Pokemon GO. Moreover, the social motive has also been notable in location-based mobile games. Although previous research has identified these three motives among gamers of Pokemon

GO, little research has examined whether these motives would influence players' engagement in location-based mobile games. Study Wu, (2016) explained that as media engagement stems from the motivations of experiencing media content, it is predicted that Pokemon GO users exercise, entertainment, and social motives will positively influence game engagement.
H2a. Exercise motive will positively influence users' engagement with Pokemon GO.
H2b. Entertainment motive will positively influence users' engagement with Pokemon GO.
H2c. Social motive will positively influence users' engagement with Pokemon GO.

The second theory is about the actual formation of spatial presence. While game engagement increases the possibility of experiencing spatial presence, to feel it, players still need to mentally locate themselves in the game world and perceive their actions in the virtual environment (Wirth et al., 2007). Previous research has proposed that individuals make sense of space by constructing an egocentric reference frame (Charlson, 1999), which refers to a mental model of the world that is organized from a first-person perspective. The formation of egocentric reference frame provides individuals with the full sensation of the spatial environment (Mou and McNamara, 2002). Spatial presence is experienced by individuals who accept the egocentric reference frame induced by the mediated environment as their primary egocentric reference frame.

Egocentric reference frame model is believed to be influenced by a variety of media-related factors which may alter individuals' spatial sensation. Therefore, users' perceptions of several essential features of location-based mobile games are considered in this study. In particular, the authors focus on whether and how users' perceptions of augmented reality, the mobile nature of the game, and context awareness would directly influence their experience of spatial presence (Wirth et al., 2007). AR refers to the technology of enhancing users' perceptions of the natural world with computer-generated applications (Reitmayr and Schmalstieg, 2003). The augmented reality function of Pokemon GO combines the virtual and physical worlds into an integrative platform for game players (Clark and Clark, 2016).

Based on the technology acceptance model (Davis, 1989), perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her job performance. In Pokemon GO, users' perceived usefulness refers to the belief that the augmented reality function can improve their gaming experience. Previous research on augmented reality has noted that it can be a valuable tool for users to make sense of the spatial environment in the mediated world. Therefore, the authors examine users' perceptions of augmented reality by focusing on their perceived usefulness of this technology. As augmented reality has been found to benefit individuals' exploration of the space in a mediated environment (Dunser et al., 2006), it is predicted that users' perceived usefulness of augmented reality will enhance their experience of spatial presence when playing Pokemon GO.
H3a. The perceived usefulness of augmented reality will positively influence users' spatial presence when playing Pokemon GO.

Mobility refers to the extent to which users can interact with a particular media platform anytime and anywhere with minimal effort (Ha et al., 2014). Mobility or ubiquity is a prominent characteristic of mobile media that has vastly changed people's media use habits. For example, Banerjee and Dholakia (2013) have posited that ubiquitous internet use contributes to the flexibility of online shopping, and such flexibility influences consumers' e-commerce behaviors.

As location-based mobile games, like Pokemon GO, require players to move around for gameplay, these games are designed as highly compatible with mobile devices. For example, the game system runs smoothly in the mobile data environment, and players can interact with the game interface using one hand. Niantic has also launched a wearable device, Pokemon GO Plus, to improve the users' gaming experience on the move. Therefore, mobility is a salient feature that differentiates location-based mobile games from other types of video games. As previous research has confirmed that physical movement in the gameplay gives rise to the spatial presence (Shafer et al., 2011), it is predicted that Pokemon GO users' perceptions of mobility will promote their experience of spatial presence:

H3b. Mobility will positively influence users' spatial presence when playing Pokemon GO.

Another feature of location-based mobile games that is possibly related to spatial presence is context-awareness. Context-awareness refers to the media function of providing users comprehensive information about their surrounding environment, including locations, people, and events (Wu, 2016). Previous marketing research has already confirmed that context-awareness influences consumers' evaluations of the information delivered by location services (Banerjee and Dholakia, 2008). In location- based mobile games, context awareness is often realized by the technologies of navigation and tracking, offering users a strong sense of space and making them react accordingly. People's perceptions of context-awareness can be captured by the construct of contextual perceived value. Contextual perceived value is defined as the degree to which a person believes that receiving context-relevant information or services would enhance his or her media-using experience (Lee and Jun, 2007).

As a gamer with high levels of contextual perceived value tends to value the context-relevant information presented in location-based mobile games, like Pokemon GO, they would pay more attention to such information and thus have better ideas of their surroundings than those with low levels of contextual perceived value. Therefore, it is expected that contextual perceived value will positively influence Pokemon GO users' experience of spatial like Pokemon GO. They would pay more attention to such information and thus have better ideas of their surroundings than those with low levels of contextual perceived value. Therefore, it is expected that contextual perceived value will positively influence Pokemon GO users' experience of spatial like Pokemon GO. They would pay more attention to such information and thus have better ideas of their surroundings than those with low levels of Contextual perceived value (Kumar et al., 2009). Therefore, it is expected that contextual perceived value will positively influence Pokemon GO users' experience of spatial presence.

H3c. Contextual perceived value will positively influence users' spatial presence when playing Pokemon GO.

2. Method

An online survey was conducted among Pokemon GO users in Indonesia. A convenience sample was obtained. A survey request with a link was published. Any individual who registers and resides in Indonesia could get access to it. Once a respondent accepted the request and clicked on the survey link, they were taken to the system to answer some questions about the experience of playing Pokemon GO and give their opinions about sponsors featured in the game. All the data were automatically recorded and collected. A filter question was asked at the beginning of the survey to ensure that only users of Pokemon GO were included in the sample. All the items were

measured on a five-point scale and were modified to reflect the context of Pokemon GO specifically. Confirmatory factor analysis was conducted using AMOS 21 to reliability and validity. Structural equation modeling was conducted using AMOS 21 to test the model fit of the conceptual model and test each hypothesis.

2.1 *Identify Subsections*

Measures

Game engagement (ninth items) was measured adopting items from Brockmyer et al. (2009). Spatial presence (eight items) was measured using Hartmann et al.'s (2015) scale. Exercise motive (seven items), entertainment motive (four items), and social motive (four items) were measured adopting items from Yang and Liu (2017). The perceived usefulness of AR (four items) was measured by adopting items from Huang and Liao (2015). CPV (four items) was measured using Lee and Jun's (2007) scale. Mobility (three items) was measured adopting items from Lee and Cho (2011) and Jun and Lee (2007). Attitude toward the sponsors (five items) was measured using Verhellen et al.'s (2016) scale. Behavior intention (four items) was measured using Loureiro's (2015) scale. The proposed conceptual model was tested using SEM (Bollen, 1989). The common-method bias-adjusted composites were
imputed based on the aforementioned revised CFA model, and the SEM model was tested based on these adjusted composites.

Engagement games

GE-1 Things seem to happen automatically while playing Pokemon GO

GE-2 If someone talks to me during my play of Pokemon GO, then I do not hear them GE-3 I get wound up when playing Pokemon GO

GE-4 Time seems to kind of standstill or stops when I am playing Pokemon GO GE-5 I feel spaced out when playing Pokemon GO

GE-6 I don't answer when someone talks to me while playing Pokemon GO GE-7 Playing Pokemon GO seems automatic

GE-8 My thoughts go fast when I am playing Pokemon GO GE-9 I feel like I just can't stop playing Pokemon GO Spatial presence

SP-1 I felt like I was actually there in the game environment when playing Pokemon GO

SP-2 It seemed as though I actually took part in the action of game character when playing Pokemon GO

SP-3 It was as though my true location had shifted into the game environment when playing Pokemon GO

SP-4 I felt as though I was physically present in the game environment when playing Pokemon GO

SP-5 The objects in the game gave me the feeling that I could do things with them when playing Pokemon GO

SP-6 I had the impression that I could be active in the game environment when playing Pokemon GO

SP-7 I felt like I could move around among the objects in the game when playing Pokemon GO

SP-8 It seemed to me that I could do whatever I wanted in the game environment when playing Pokemon GO

Exercise Motive

EX-1 I play Pokemon GO to get myself active (walking and exercising) EX-2 I play Pokemon GO to walk and improve my fitness
EX-3 I play Pokemon GO to become more active when being outdoors EX-4 I play Pokemon GO to get some exercise
EX-5 I play Pokemon GO to burn calories
EX-6 I play Pokemon GO to exercise by traveling around
EX-7 I play Pokemon GO to encourage me to get outside and be more active Entertainment motive
EN-1 It is fun collecting Pokemon EN-2 It is fun capturing Pokemon
EN-3 It is fun hunting for those cute little Pokemon
EN-4 It is thrilling to hunt down new Pokemon and catch them Social motive SO-1 I play Pokemon GO to meet new people
SO-2 I play Pokemon GO to meet others who share the same passion as I do SO-3 I play Pokemon GO to make me more social and meet a lot of new people SO-4 I play Pokemon GO to interact with other players
AR usefulness
AR-1 The technology of augmented reality improves my gaming experience of Pokemon GO
AR-2 The technology of augmented reality enhances my effectiveness when playing Pokemon GO
AR-3 The technology of augmented reality helps play Pokemon GO
AR-4 The technology of augmented reality improves my gaming ability of Pokemon Go
CPV
CPV-1 Offering timely information in Pokemon GO is valuable to me
CPV-2 Providing me with the information I am interested in Pokemon GO is useful CPV-3 Offering location-specific information to me would improve my gaming performance in Pokemon GO
CPV-4 Offering optimal information or a service that is contextually relevant to me, based upon where I am and what I am interested in, would enable me
to play Pokemon GO effectively
MO-1 I play Pokemon GO because I can play it on the move MO-2 I play Pokemon GO because I can play it anywhere
MO-3 I play Pokemon GO because I can play it whenever I want SA-1 Bad/good
SA-2 Unfavorable/favorable SA-3 Unpleasant/pleasant SA-4 Unfriendly/friendly SA-5 Negative/positive Behavior
intention
BI-1 My desire to visit the sponsors featured in Pokémon GO is high
BI-2 The probability that I would consider visiting the sponsors featured in Pokémon GO is high
BI-3 I will speak well about the sponsors featured in Pokémon GO to other people
BI-4 I will recommend the sponsors featured in Pokémon GO if someone asks for my advice

2.2 *Participant (Subject) Characteristics*

Participants

The research was conducted using an online survey which was distributed to the target respondents. Data screening is carried out to detect respondents who have problems. According to Hair (2019), detection of respondent data needs to be done to avoid Response Bias, for example, respondents who fill in origin or respondents who fill in specific patterns. The total data after the screening process was 593 respondents who met the requirements. Five hundred and ninety-three Pokemon GO users (N = 593) were recruited to participate in this study.

2.3 *Sampling Procedures*

Respondent profile data can be seen in the following.

Table 1 Characteristics of Respondents

Description	Information	Percentage
Gender	Man	54.66%
	Woman	45.34%
Age	< 17 Years	1.5%
	>17 - 25 years old	32.4%
	> 25 - 30 Years	30.9%
	> 30 - 35 Years	23.5%
	> 35 Years	11.8%
Level of education	SD	1.5%
	junior high school	1.5%
	senior High School	44.1%
	S1	42.6%
	S2	7.4%
	S3	2.9%
Income	< 1,000,000	32.4%
	>1,000,000 - 2,500,000	19.1%
	> 2,500,000 - 5,000,000	26.5%
	> 5,000,000 - 7,500,000	13.2%
	> 7,500,000	8.8%

Source: Data processed 2021

2.3.1 Sample Size, Power, and Precision

The gender criteria are mostly male respondents with 54.66% and female respondents at 45.34%. Based Age criteria, respondents aged <17 years with a percentage of 1.5%, most of the respondents aged between >17-25 years with a percentage of 32.4%, followed by ages between> 25-30 years with a percentage of 30.9%, ages between> 30 - 35 years with a percentage of 23.5% and age > 35 years with a percentage of 11.8%. Based on the education level criteria, respondents have an elementary education level with a percentage of 1.5%, a junior high school education level with a percentage of 1.5%, most of the respondents have a high school education level with a percentage of 44.1%, followed by an undergraduate education level with a percentage of 42.6%, and education level S2 with a percentage of 7. 4% and S3 Education Level with a percentage of 2.9%. Based on the income criteria, most respondents have income <

1,000,000 with a percentage of 32.4%, income between > 1,000,000 - 2,500,000 with a percentage of 19.1%, income between >
2,500,000 - 5,000,000 with a percentage of 26.5% , Income between > 5,000,000 - 7,500,000 with a percentage of 13.2% and Income > 7,500,000 with a percentage of 8.8%.

2.3.2 Measures and Covariates

The load estimates for each indicator were examined, and the composite reliability (CR) and mean-variance extracted measure (AVE) were assessed (Fornell and Larcker, 1981). The results showed that all factor loadings were significant at p <
0.01. All CR and AVE are above the limit values. 70 and 0.50, respectively (Hair et al., 2014). Data collected from the survey were analyzed using partial least squares structural equation modeling (PLS-SEM). SEM allows researchers to examine causal relationships between latent variables in the proposed research model. There are two approaches to SEM (Hair et al., 2014) covariance-based SEM, which requires data to show multivariate normality, and a PLS-SEM variance-based approach that does not require multivariate normality. A preliminary study of the data collected showed that the data were abnormal, thus confirming the choice for PLS-SEM. Using the two-step approach 6 to evaluate the structural equation model recommended by Chin (1998), first tested the reliability and validity of the measurement model and then proceeded to test the significance of the structural path between latent constructs in the hypothesized model. Smart PLS 3.2 was used to evaluate the reliability and validity of the measurement model and for testing the structural model.

2.3.3 Research Design

A validity test is used to determine whether or not a questionnaire is valid in obtaining data. A questionnaire is said to be good if it shows the level of validity. Researchers do not use a manual system in processing research findings data but use a computerized system for the SMART PLS program. This study ran a discriminant validity test using the Fornell-Larcker Criteria (Fornell and Larcker, 1981; Hair et al., 2017). In particular, discriminant validity was established if the square root of the AVE of each construct was more significant than the highest correlation with the other constructs. Confirm the discriminant validity of all constructs in the model. As all the scales used in our study were defined in the literature, scale validity and reliability were assessed through performing confirmatory factor analysis (CFA) and Cronbach's Alpha. After that, structural equation modeling (SEM) was used to test the proposed model and hypothesis. These results showed a satisfactory level of reliability with an alpha coefficient exceeding the cutoff value of 0.70 (Hair et al., 2017). in addition,

2.3.4 Experimental Manipulations or Interventions

The measurement model was evaluated based on the measuring instrument's reliability, convergent validity, and discriminant validity. Reliability was assessed using Cronbach and composite reliability. For a construction to be considered reliable, Henseller et al. (2009) recommend that the construct's Cronbach and composite reliability values should be above 0.7. It is evident from the table that all constructs are reliable because the values for Cronbach and composite reliability are well above

0.7. Convergent validity was also assessed using the mean of extracted variance (AVE). Henseler et al. (2009) recommend that the measurement model shows sufficient convergent validity, the AVE for each construct in the model should be above 0.5. Evidence of convergent validity is presented in the table because the AVE for all constructs is above 0.5.
Discriminant validity, on the other hand, was assessed using the guidelines following the Fornell Larker criterion, which states that the AVE of each latent construct must be greater than the highest squared correlation between the other constructs (Fornell and Larcker, 1981); and a load of each indicator must be greater than all of its cross-loads (Chin, 1998; Gotz et al., 2010; Henseler et al., 2009). The table shows that all indicators load the highest on their respective constructs. Again, from the Table, it is evident that the square root of the AVE for each construct is greater than the cross-correlation with the other constructs. The results presented in the measurement model concluded that psychometric properties are suitable for latent constructs in the model. After verifying the measurement model, we assess the structural model and determine whether the structural relationships in the tested model are meaningful. The bootstrap resampling procedure (with 5,000 iterations of sub-samples taken with replacement from the initial sample) was used to determine the significance of the path coefficients in the structural model. The explanatory power of the structural model was assessed from its ability to predict endogenous constructs using the coefficient of determination R2.

3. Results

Measurement validation

Data analysis was carried out using PLS-SEM through SMART PLS software Version 3.3.2. The testing process is carried out in 3 stages: internal consistency reliability, convergent validity, and discriminant validity. The results of the internal consistency reliability test were carried out using Cronbach alpha. From the data analysis performed, the results are shown in the following table.

Table 2 Internal Consistency Reliability Test

Variable	Cronbach's Alpha	Test result
Attitude Toward Sponsors	0.865	Very good
Contextual Perceived Value	0.845	Very good
Entertainment Motive	0.853	Very good
Variable	Cronbach's Alpha	Test result
Exercise Motive	0.885	Very good
Engagement Games	0.931	Very good
Intention to Visit Sponsors	0.88	Very good
Mobility	0.856	Very good
Perceived Usefulness of AR	0.866	Very good
Social Motive	0.868	Very good
Spatial Presence	0.918	Very good

Source: Data processed 2021

The test results in the table above show a reliability value above 0.7. Hair (2017) states that a Cronbach alpha score above 0.7 is in an outstanding category. Thus overall, it can be concluded that all variables pass the internal consistency reliability test. Convergent validity testing is done

by looking at the value of Indicator Reliability (Outer Loading) and the value of AVE (Average Variance Extracted). Hair (2017) states that the standard outer loading value is excellent if a score above 0.7 and the standard AVE value above 0.5 has perfect criteria. The results of the convergent validity test can be seen in the following table.

Table 3 Convergent Validity Test

Construct	Indicator	Factor Loading	CR	AVE	Status
Attitude Toward Sponsors	SA1	0.819	0.903	0.649	Very good
	SA2	0.800			
	SA3	0.824			
	SA4	0.817			
	SA5	0.768			
Contextual Perceived Value	CPV1	0.834	0.896	0.683	Very good
	CPV2	0.867			
	CPV3	0.796			
	CPV4	0.806			
Entertainment Motive	EN1	0.829	0.901	0.694	Very good
	EN2	0.812			
	EN3	0.820			
	EN4	0.872			
Exercise Motive	EX1	0.651	0.91	0.592	Very good
	EX2	0.783			
	EX3	0.816			
	EX4	0.780			
	EX5	0.764			
	EX6	0.794			
	EX7	0.785			
Engagement Games	GE1	0.818	0.943	0.647	Very good
	GE2	0.845			
	GE3	0.828			
	GE4	0.785			
	GE5	0.799			
	GE6	0.784			
	GE7	0.848			
	GE8	0.742			
	GE9	0.783			
Intention to Visit Sponsors	BI1	0.857	0.917	0.736	Very good
	BI2	0.858			
	BI3	0.898			
	BI4	0.815			
Mobility	MO1	0.867	0.913	0.777	Very good
	MO2	0.891			
	MO3	0.886			

Perceived Usefulness of AR	AR1	0.835	0.909	0.713	Very good
	AR2	0.857			
	AR3	0.853			
	AR4	0.833			
Social Motive	SO1	0.815	0.910	0.716	Very good
	SO2	0.877			
	SO3	0.829			
	SO4	0.863			

Construct	Indicator	Factor Loading	CR	AVE	Status
Spatial Presence	SP1	0.807	0.933	0.636	Very good
	SP2	0.812			
	SP3	0.829			
	SP4	0.840			
	SP5	0.791			
	SP6	0.789			
	SP7	0.778			
	SP8	0.730			

Source: Data processed 2021

The results of the convergent validity test in the table above show that the outer loading value is above 0.7, and the AVE value is above 0.5. So, it can be concluded that each variable and its indicators have perfect convergent validity. The discriminant validity test was carried out using the Fornell-Larcker criteria (Hair 2017). The value of cross-loading is expected to have the highest value for that variable. The results of discriminant validity testing can be seen in the following table.

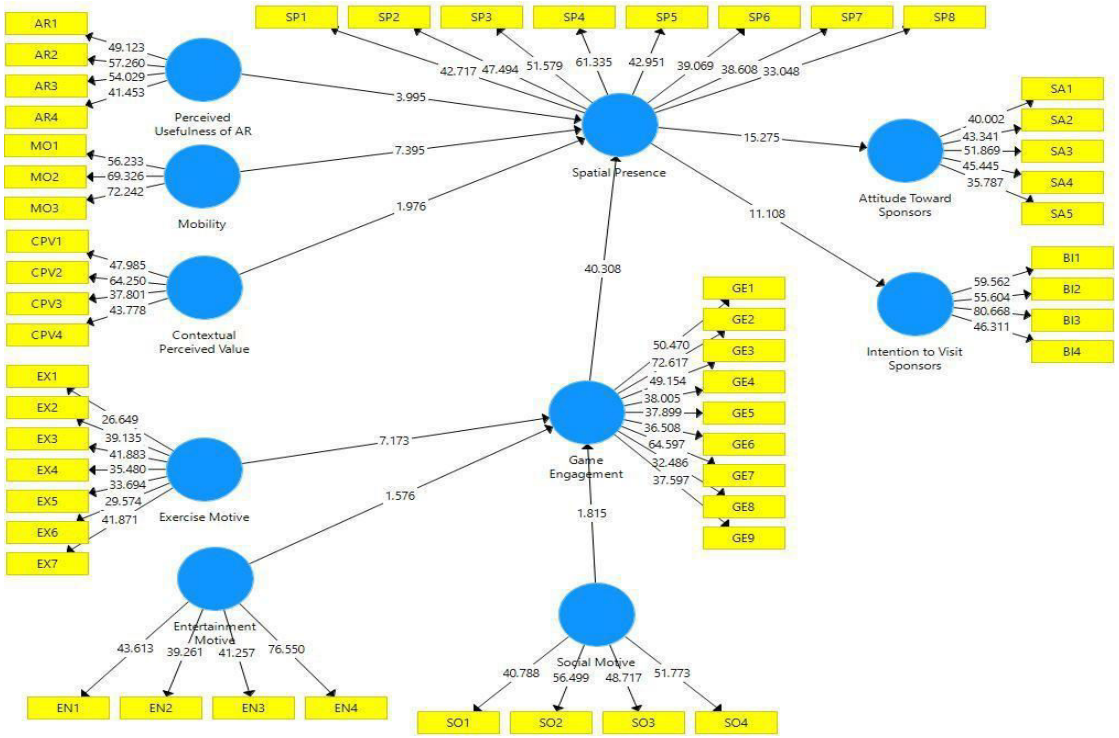
Table 4 Discriminant Validity Test

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Status
Attitude Toward Sponsors	0.806										Fulfilled
Contextual Perceived Value	0.772	0.826									Fulfilled
Entertainment Motive	0.798	0.751	0.833								Fulfilled
Exercise Motive	0.803	0.756	0.816	0.769							Fulfilled

Engagement Games	0.478	0.505	0.446	0.574	0.804						Fulfilled
Intention to Visit Sponsors	0.812	0.701	0.755	0.794	0.422	0.858					Fulfilled
Mobility	0.797	0.791	0.728	0.777	0.449	0.684	0.881				Fulfilled
Perceived Usefulness of AR	0.768	0.824	0.779	0.786	0.516	0.739	0.761	0.844			Fulfilled
Social Motive	0.764	0.817	0.781	0.789	0.483	0.772	0.751	0.789	0.846		Fulfilled
Spatial Presence	0.545	0.472	0.436	0.564	0.868	0.414	0.515	0.46	0.447	0.797	Fulfilled

The results of the discriminant validity test show that each variable meets the Fornell- Larcker criteria because it has the highest correlation score compared to other correlations. After evaluating the measurement model, the next step is to analyze the
structural model to test the previously proposed hypothesis. This analysis was conducted by testing the direct or indirect effect between the hypothesized variables. The following are the results of the PLS-SEM analysis.

Figure 1. Structural Model Testing



Source: SMARTPLS Visual Output from data processing
The results of testing the complete hypothesis can be seen in the following table.
Table 5 Hypothesis Testing

Hypothesis	Standard Deviation	T test	P Values	Information
Perceived Usefulness of AR → Spatial Presence	0.036	3.995	0.000	Significant
Mobility → Spatial Presence	0.042	7.395	0.000	Significant
Contextual Perceived Value → Spatial Presence	0.04	1976	0.049	Significant
Exercise Motive → Engagement Games	0.08	7.173	0.000	Significant
Entertainment Motive → Engagement Games	0.076	1.576	0.116	Not significant
Social Motive → Engagement Games	0.068	1,815	0.070	Not significant
Engagement Games → Spatial Presence	0.021	40,308	0.000	Significant
Spatial Presence → Attitude Toward Sponsors	0.036	15,275	0.000	Significant
Spatial Presence → Intention to Visit Sponsors	0.037	11.108	0.000	Significant

Source: Data processed 2021

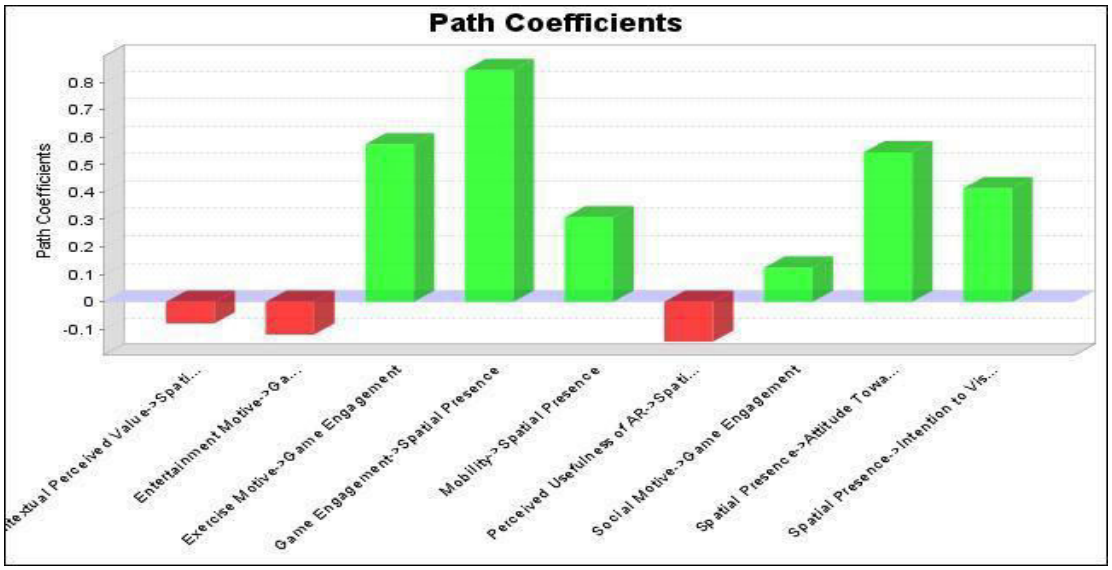
Results of testing the hypothesis that examine the effect of Perceived Usefulness of AR to Spatial Presence the value of the t-test test was obtained by 3.995
with a p-value of 0.000. By using a 95% confidence level, the standard used for the t value is 1.96. Because the t-test value is more significant than 1.96 and the p-value is below 0.05, it can be concluded that the hypothesis is accepted—perceived Usefulness of AR-positive effect on Spatial Presence. Results testing the hypothesis that examines the effect of Mobility to Spatial Presence the value of the t-test test was obtained by 7.395 with a p-value of 0.000. By using a 95% confidence level, the standard used for the t value is 1.96. Because the t-test value is more significant than
1.96 and the p-value is below 0.05, it can be concluded that the hypothesis is accepted—positive mobility effect on Spatial Presence.
The results of testing the hypothesis that examine the effect of Contextual Perceived Value to Spatial Presence the value of the t-test test was obtained by 1976 with a p-value of 0.049. By using a 95% confidence level, the standard used for the t value is 1.96. Because the t-test value is more significant than 1.96 and the p-value is below 0.05, it can be concluded that the hypothesis is accepted—Contextual Perceived Value positive effect on Spatial Presence. Results testing the hypothesis that examines the effect of Exercise Motive to Engagement Games the value of the t-test test was obtained by 7.173 with a p-value of 0.000. By using a 95% confidence level, the standard used for the t value is 1.96. Because the t-test value is more significant than 1.96 and the p-value is below 0.05, it can be concluded that the hypothesis is accepted—exercise positive motive effect on Engagement Games.

Results of testing the hypothesis that examine the effect of Entertainment Motive to Engagement Games the value of the t-test test was obtained by 1.576 with a p-value of 0.116. By using a 95% confidence level, the standard used for the t value is
1.96. Because the t-test value is smaller than 1.96 and the p-value is above 0.05, it can be concluded that the hypothesis is rejected. Entertainment Motive does not affect Engagement Games. Results of testing the hypothesis that examine the effect of Social Motive to Engagement Games the value of the t-test test was obtained by 1,815 with a p-value of 0.070. By using a 95% confidence level, the standard used for the t value is 1.96. Because the t-test value is smaller than 1.96 and the p-value is above 0.05, it can be concluded that the hypothesis is rejected. A social motive does not affect Engagement Games.
Results of testing the hypothesis that examine the effect of Engagement Games on Spatial Presence the value of the t-test test was obtained by 40,308 with a p-value of 0.000. By using a 95% confidence level, the standard used for the t value is
1.96. Because the t-test value is more significant than 1.96 and the p-value is below 0.05, it can be concluded that the hypothesis is accepted—engagement games' positive effect on Spatial Presence. Results testing the hypothesis that examines the effect of Spatial Presence to Attitude Sponsors the value of the t-test test was obtained by 15,275 with a p-value of 0.000. By using a 95% confidence level, the standard used for the t value is 1.96. Because the t-test value is more significant than
1.96 and the p-value is below 0.05, it can be concluded that the hypothesis is accepted—spatial Presence positive effect on Attitude Toward Sponsors. Results testing hypothesis examine effect spatial presence intention visit sponsors value t-test test obtained by 11.108 with a p-value of 0.000. By using a 95% confidence level, the standard used for the t value is 1.96. Because the t-test value is more significant than
1.96 and the p-value is below 0.05, it can be concluded that the hypothesis is accepted—spatial presence positive effect on the intention to visit sponsors.
The first order of CFA was conducted to test the fitness of the measurement model for the latent variables. The initial model fit for the CFA model was not good,
so the standardized regression weight was examined for each item. Three game engagement items and one entertainment motive item were deleted because of low regression weights. See Table II for the final scales. Control common method bias, the technique of controlling for the effects of an unmeasured latent methods factor, was adopted in the revised CFA model (Podsakoff et al., 2003). The common-method- bias-adjusted CFA model had an acceptable model fit based on the recommendation from Hair (2010). In specific, goodness-of-fit indicators for the revised CFA model (x2 /df = 2.06, CFI = 0.94, TLI = 0.93, RMSEA = 0.06) indicated satisfactory fit for the data.
Standardized loading, Cronbach's alpha, composite reliability (CRs), and average variance extracted (AVE) estimates were used to assess the reliability and convergent validity of the measures based on the common-method-bias-adjusted CFA model. The loadings ranged from 0.66 to 0.94, which were significant. Cronbach's alpha ranged from 0.91 to 0.98, exceeding the minimum limit of 0.70 (Chin, 1998). CRS ranged from 0.84 to 0.98, exceeding the minimum limit of 0.70 (Hair, 2010). AVE estimates ranged from 0.50 to 0.82, exceeding (or equal to) the recommended minimum limit of 0.50 (Fornell and Larcker, 1981). Therefore, all factors in the measurement model had sufficiency reliability and convergent validity.

Pearson correlations revealed significant, strong correlations among all variables, suggesting possible multicollinearity issues. Variance inflation factor (VIF) tests discovered that the multicollinearity issues were not a problem. In particular, in the worst case, the VIF was less than 3 (Hair et al,. 2017). Test discriminant validity, the square root of AVE was calculated for each construct and compared its correlation coefficients with other constructs. It showed that all the diagonal numbers (ie the square root of AVE) were more significant than the corresponding off-diagonal numbers (ie correlation coefficient), indicating adequate discriminant validity.

3.2 Statistics and Data Analysis

Measurement Model Evaluation



Source: Data processed 2021

Data analysis was carried out using PLS-SEM through SMART PLS software Version 3.3.2. The testing process is carried out in 3 stages: internal consistency reliability, convergent validity, and discriminant validity. The results of the internal

consistency reliability test was carried out using Cronbach alpha. The test results in the table above show a reliability value above 0.7. Hair (2017) states that a Cronbach alpha score above 0.7 is in an outstanding category. Thus overall, it can be concluded that all variables pass the internal consistency reliability test. After evaluating the measurement model, the next step is to analyze the structural model to test the previously proposed hypothesis. This analysis was conducted by testing the direct or indirect effect between the hypothesized variables.

Convergent validity testing is done by looking at the value of Indicator Reliability (Outer Loading) and the value of AVE (Average Variance Extracted). Hair (2017) states that the standard outer loading value is excellent if a score above 0.7 and the standard AVE value above 0.5 has perfect criteria. The results of the convergent validity test in the table above show that the outer loading value is above 0.7, and the AVE value is above 0.5. So it can be concluded that each variable and its indicators have excellent convergent validity. Provide dates defining the periods of recruitment and follow-up and the primary sources of the potential subjects, where appropriate. If these dates differ by group, provide the values for each group.

4. Discussion

This study explores the marketing potential of location-based mobile games based on the data collected from users of Pokemon GO. It analyzes the psychological process of playing the game and how the gameplay leads to marketing outcomes. Specifically, when playing Pokemon GO, gamer feels a spatial presence, which positively influences their attitudes. The experience of spatial presence is further influenced by their game engagement, perceived mobility, and CPV. Moreover, player's entertainment motive and social motive are the antecedents to their engagement in the gameplay. Although the data were obtained from users of Pokemon GO, the factors identified in the conceptual model reflect the typical characteristics of location-based mobile games. Therefore, the finding of this study offers exciting insights on the importance of spatial presence to understanding users' experience of playing location-based mobile games and the effectiveness of marketing efforts in these games. It provides both theoretical and practical implications to the field of interactive marketing and entertainment studies.

Existing research has demonstrated the positive influence of media engagement on advertising effectiveness in various media platforms, including traditional media (Kilger and Romer, 2007), websites (Calder et al., 2009), and mobile social media (Wu, 2016). The current study adds to this line of research by verifying this relationship in the context of location-based mobile games. More importantly, spatial presence is confirmed as the intervening variable. In other words, the fact that high levels of game engagement lead to favorable responses to sponsors in the games like Pokemon GO may be significant because of players' spatial presence experience. Consistent with the prior finding that spatial presence could be persuasive (eg Jee and Lee, 2002; Li et al., 2002). Therefore, future studies of in-game marketing are suggested to pay more attention to players' spatial presence experience, especially when they play games on mobile devices.

This study also contributes to the gaming literature by identifying the antecedents to spatial presence when users play location-based mobile games. Previous research has discovered that video games that require physical movements normally evoke a high level of spatial presence in players (Shafer et al., 2011). The current study confirms this finding among users of Pokemon GO and takes additional effort to recognize the influential factors of spatial presence, including immersive
gameplay (ie game engagement) and perceptions of some game features (ie mobility and context awareness). Surprisingly, players' perceived usefulness of AR is not identified as a significant antecedent to spatial presence. Despite the potential measurement issue (as discussed in the limitation session), the AR function in Pokemon GO may deal with capturing fantasy creatures that do not exist in the real world, thus failing to promote the fidelity of the game world. However, this does not conclude that AR does not affect spatial presence. Additional investigations are needed on this topic.

Consistent with previous research of location-based mobile games (eg Yang and Liu, 2017), the present study confirmed that the entertainment and social motives are prominent among users of games like Pokemon GO. The current study further shows that these two motives account for players' immersive gaming experience. Contradictory to our prediction, exercise motive is not a significant contributor to users' engagement in Pokemon GO. It is probably because doing exercises is just the outcome of playing Pokemon Go, but not the intrinsic needs of players. Existing research based on the SDT (Ryan and Deci, 2000) has discovered that

intrinsic and extrinsic motives influence individuals' behaviors differently. Future research is suggested to examine further users' motives of playing location-based mobile games under the guidance of SDT.

This study applies to Wirth et al (2007) theory of spatial presence to analyze the experience of playing location-based mobile games. Consistent with the two-step model described in the theory of spatial presence, players of Pokemon GO first prepare themselves for experiencing spatial presence by allocating their attention to gameplay under the influence of entertainment and social motives, and then actually feel spatial presence based on game engagement, perceptions of mobility and perceived context-awareness. Therefore, this study validates Wirth et al., (2007) theory of spatial presence in location-based mobile games. Future studies may apply this theory to analyzing user experience in other digital media platforms that may help form spatial sensations in people's minds. In addition, the present study also reflects the framework of dual consciousness, which examines individuals' "simultaneous presence in physical and virtual worlds" (Banerjee and Longstreet, 2016).

In particular, this framework suggests that digital media users, especially mobile users, are constantly influenced by various factors in the physical and virtual worlds. As a result, they are likely to form a dual consciousness that integrates both worlds or isolates one from the other (Banerjee and Longstreet, 2016). Whether the dual consciousness leads to integration or isolation between the physical and virtual worlds depends on the state of activities required in both worlds – integration would only occur when users need to be highly active in either world. Our conceptual model suggests that users of location-based mobile games commonly experience integration between the game world and their physical environment, as spatial presence positively influences users' responses to real-world sponsors. However, it is exciting and essential for future studies to explore the situations in which gamers may perceive the dissociation between virtual and physical realities. For example, some routine physical activities do not require too much attention, such as walking, driving, dining, or waiting in line. In these situations, immersive gameplay may isolate the game world from the physical world, decreasing marketing outcomes and causing problems or even dangers. Therefore, the framework of dual consciousness is promising to guide future investigations of digital media usage and interactive marketing.

This study provides several practical implications related to Pokemon GO and location-based mobile gaming for marketers, game users, service providers, and policymakers. The results that users with immersive gaming experiences respond favorably to sponsors who invested in Pokemon indicate that location-based mobile games can be a valuable platform for in-game marketing. Therefore, marketing professionals are suggested to pay attention to this type of game for sponsorship opportunities. Moreover, this study identified users' motives for game engagement. Given that users typically post their experience of playing games like Pokemon GO on social media, marketing professionals may predict users' game engagement to some extent by monitoring their social media activities. As engaging gaming experience contributes to desirable marketing outcomes,

In addition, marketers are suggested to improve the context-awareness of their messages in location-based mobile games. Marketers should consistently update the information to correlate with the gaming environment. Marketers may also focus on mobile data usage because users who play games a lot on the move are likely to place themselves in the game world and

thus are responsive to in-game advertisements. This study is meaningful to end-users of location-based mobile games, as it shows that the gaming experience influences their attitudes and behavioral intentions toward game sponsors. Existing research also suggests that digital media users may dissociate between the game world and the physical world (Banerjee and Longstreet, 2016).

As for service providers and policymakers, the present model's non-significant exercise motive deserves extra attention. As discussed previously, such a result indicates that doing exercises is not the intrinsic motive among Pokemon GO users. Explain that players seek ways of playing the game without moving around by themselves, and some even play the game when driving. The service provider of Pokemon GO has already been requested to add the warning that users should not play the game when they are driving. From the policymakers' perspective, such regulations should be widely conducted in the mobile gaming industry. Some additional effort may also be taken, such as adding the information about the danger of gameplay during driving to the writing exam of driver's license. Next, this study also suggests that a more effective solution to this problem may be to encourage gamers to fulfill their exercise needs through gameplay. For example, the service providers of location-based mobile games may collaborate with some professional sports platforms, such as Nike, to encourage users to integrate the gameplay into their fitfulness plan.

The study reported here does have some drawbacks that can be addressed in future investigations. First, the survey was conducted online. The authors had no control over the environment in which the respondents completed the questionnaire. Second, this study addressed only one location-based mobile game – Pokemon GO. Players' experiences may differ with specific games. Therefore, future studies should take other location-based mobile games into account. Third, the nonsignificant influence of AR perceptions on spatial presence maybe because of the issue of measurement. In this study, we measured respondents' perceptions of AR based on their perceived usefulness of this technology. Likely, that perceived usefulness is not the critical concern of players when they think of AR.

Therefore, future research may explore how people perceive AR as an innovative communication technology and development-related measures. Fourth, although the present conceptual model is built upon solid theoretical frameworks, it can be further refined based on detailed feedback from gamers in qualitative studies,
such as in-depth interviews and focus groups. The lack of a preliminary qualitative study is considered a limitation of the present paper. Future research is suggested to conduct some qualitative investigations on gamer experience in location-based mobile games. Researchers may identify some additional factors from direct gamer inputs and elaborated explanations. Fifth, previous research identified privacy concerns as an essential factor that inhibits users' adoption of location-based services (Xu et al., 2011).

Users' perceptions of risk when using location-based services mainly come from their concerns about the collection and secondary use of private information (Zhou, 2011). Although privacy concern is not the present study's focus, it may play a significant role in the current conceptual model. For example, gamer privacy concerns may prevent them from experiencing high levels of spatial presence and negatively influence their responses to the sponsors featured in location-based mobile games. In addition, existing research has found that location-tracking services trigger more significant privacy concerns than location-awareness services (Barkhuus

and Dey, 2003). Therefore, gamer responses to sponsors may also be influenced by the type of location technology adopted in the gaming system. Future research may focus on these topics.

In conclusion, location-based mobile games, like Pokemon GO, represent the current trends of gaming and media usage. This type of game is also a promising marketing platform as gamer immersive experiences in the virtual world contribute to their favorable evaluations of sponsors in the physical world. As an innovative media platform, location-based mobile gaming provides scholars with a well-developed setting to investigate the interplay between virtual and physical realities. Further investigations in this area are believed to benefit both digital media and interactive marketing research and practices.

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References

Althoff, T., White, RW and Horvitz, E. (2016), "Influence of Pokemon go on physical activity: study and implications", Journal of Medical Internet Research, Vol. 18 No. 12, p. e315.

Attahiru Gana, M., Thomas, TK and Hussain, K. (2016), "Consumers' value assessment on location International Journal of Business and Applied Social Science, Vol. 2 No. 3, pp.50-59.

Banerjee, S. and Dholakia, RR (2008), "Mobile advertising: does location based advertising work?", International Journal of Mobile Marketing, Vol. 3 No. 2, pp. 68-74.

Banerjee, S. and Dholakia, RR (2013), "Situated or ubiquitous? A segmentation of mobile e-shoppers", International Journal of Mobile Communications, Vol. 11 No. 5, pp. 530-557.

Banerjee, S. and Longstreet, P. (2016), "Mind in eBay, body in Macy's: dual consciousness of virtual Journal of Research in Interactive Marketing,

Vol. 10 No. 4, pp. 288-304.

Banyte, J. and Gadeikiene, A. (2015), "The effect of consumer motivation to play games on video games Vol. 26, pp. 505-514.

Barkhuus, L. and Dey, AK (2003), "Location-based services for mobile telephony: a study of users' privacy concerns", Interact, Vol. 3, pp. 702-712.

Baumgartner, T., Valko, L., Esslen, M. and Jäncke, L. (2006), "Neural correlate of spatial presence in an arousing and noninteractive virtual reality: an EEG and psychophysiology study", CyberPsychology & Behavior, Vol. 9 No. 1, pp. 30- 45.

Bentler, PM (1992), "On the fit of models to covariances and methodology to the bulletin", Psychological Bulletin, Vol. 112 No. 3, pp. 400-404.

Biocca, F., Li, H. and Daugherty, TM (2001), "Experiential e-commerce: relationship of physical and social presence to consumer learning, attitudes, and decisions- making", Proceedings of Presence Conference in Mai, Philadelphia, PA.

Bollen, KA (1989), Structural Equations with Latent Variables, Wiley, New York, NY.

Bouvier, P., Lavoué, E. and Sehaba, K. (2014), "Defining engagement and characterizing engaged Vol. 45 No. 4/5, pp. 491-507.

Bracken, CC (2005), "Presence and image quality: the case of high-definition television", Media Psychology, Vol. 7 No. 2, pp. 191-205.

Brockmyer, JH, Fox, CM, Curtiss, KA, McBroom, E., Burkhart, KM and Pidruzny,JN (2009), "The development of the game engagement questionnaire: a measure of engagement in video games ExperimentalSocial Psychology, Vol. 45 No. 4, pp. 624-634.

Bruner, GC and Kumar, A. (2007), "Attitude toward location-based advertising", Journal of Interactive Advertising, Vol. 7 No. 2, pp. 3-15.

Bystrom, KE, Barfifield, W. and Hendrix, C. (1999), "A conceptual model of the sense of presence in virtual environments", Presence: Teleoperators and Virtual Environments, Vol. 8 No. 2, pp. 241-244.

Calder, BJ and Malthouse, EC (2008), "Media Engagement and advertising effectiveness", in Calder, BJ (Ed.), Kellogg on Advertising and Media, Wiley, Hoboken, NJ, pp. 1-36.

Calder, BJ, Malthouse, EC and Schaedel, U. (2009), "An experimental study of the relationship between online engagement and advertising effectiveness", Journal of Interactive Marketing, Vol. 23 No. 4, pp. 321-331.

Carmines, EG and McIver, JP (1981), "Analyzing models with unobservable variables", in Bohrnstedt, GW and Borgatta, EF (Eds), Social Measurement: Current Issue, Sage, Beverly Hills, CA, pp. 65-115.

Cauberghe, V., Geuens, M. and De Pelsmacker, P. (2011), "Context effects of TV program-induced interactivity and telepresence on advertising responses", International Journal of Advertising, Vol. 30 No. 4, pp. 641-663.

Chin, WW (1998), "Issues and opinions on structural equation modeling", MIS Quarterly, Vol. 22 No. 1, pp. 7-16.

Clark, AM and Clark, MT (2016), "Pokémon go and research qualitative, mixed methods research and the super complexity of interventions", International Journal of Qualitative Methods, Vol. 15 No. 1, pp. 1-3.

Davis, FD (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", MIS Quarterly, Vol. 13 No. 3, pp. 319-340.

Dünser, A., Steinbügl, K., Kaufmann, H. and Glück, J. (2006), "Virtual and augmented reality as spatial ability training tools", Proceedings of the 7th ACM SIGCHI New Zealand Chapter's International Conference on Computer-human Interaction: Design Centered HCI, pp. 125-132.

Fishbach, A., Shah, JY and Kruglanski, AW (2004), "Emotional transfer in goal systems", Journal of Experimental Social Psychology, Vol. 40 No. 6, pp. 723- 738.

Fornell, C. and Larcker, DF (1981), "Structural equation models with unobservable variables and measurement error: algebra and statistics", Journal of Marketing Research, Vol. 19, pp. 39-50.

Franklin, N. and Tversky, B. (1990), "Searching imagined environments", Journal of Experimental Psychology: General, Vol. 119 No. 1, pp. 63-76.

Grigorovici, DM and Constantin, CD (2004), "Experiencing interactive advertising beyond rich media: impacts of ad type and presence on brand effectiveness in 3D gaming immersive virtual environments", Journal of Interactive Advertising, Vol. 5 No. 1, pp. 22-36.

Ha, YW, Park, MC and Lee, E. (2014), "A framework for mobile SNS advertising effectiveness: user perceptions and behavior perspective", Behavior & Information Technology, Vol. 33 No. 12, pp. 1333-1346.

Hair, JF (2010), Multivariate Data Analysis, Prentice-Hall, Upper Saddle River, NJ. Hair, Joseph F., Anderson, Rolph E., Black, William C. (2019). Multivariate Data Analysis (Ed. 7th). Harlow: Pearson.

Hair, J., Hult, GTM, Ringle, CM, & Sarstedt, M. (2017).A primer on partial least squares structural equation modeling (PLS-SEM)(2nd ed.). SAGE Publications.

Hartmann, T., Wirth, W., Schramm, H., Klimmt, C., Vorderer, P., Gysbers, A.,Bocking, S. and Gouveia, F. (2015), The spatial presence experience scale (SPES), Journal of Media Psychology, Vol. 28 No. 1, pp. 1-15.

Herrera, K. (2016), "What is Pokemon Go and why is it such a big deal?", available at: www. cinemablend.com/games/1533430/what-is-pokemon-go-and-why-is-it- such-a-big-deal (accessed 16 September 2017).

Hopkins, CD, Raymond, MA and Mitra, A. (2004), "Consumer responses to perceived telepresence in the online advertising environment: the moderating role of involvement", Marketing Theory, Vol. 4 Nos 1/2, pp. 137-162.

Hu, LT and Bentler, PM (1999), "Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives", Structural Equation Modeling: A Multidisciplinary Journal, Vol. 6 No. 1, pp. 1-55.

Huang, TL and Liao, S. (2015), "A model of acceptance of augmented-reality interactive technology: the moderating role of cognitive innovativeness", Electronic Commerce Research, Vol. 15 No. 2, pp. 269-295.

Jee, J. and Lee, WN (2002), "Antecedents and consequences of perceived interactivity: an exploratory study", Journal of Interactive Advertising, Vol. 3 No. 1, pp. 34-45.

Jun, JW and Lee, S. (2007), "Mobile media use and its impact on consumer attitudes toward mobile advertising", International Journal of Mobile Marketing, Vol. 2 No. 1, pp. 50-58.

Kang, S. (2014), "Factors influencing intention of mobile application use", International Journal of Mobile Communications, Vol. 12 No. 4, pp. 360-379.

Kilger, M. and Romer, E. (2007), "Do measures of media engagement correlate with product purchase likelihood?", Journal of Advertising Research, Vol. 47 No. 3, pp. 313-325.

Kim, T. and Biocca, F. (1997), "Telepresence via television: two dimensions of telepresence may have different connections to memory and persuasion", Journal of Computer-Mediated Communication, Vol. 3 No. 2.

Kumar, S., Qadeer, MA and Gupta, A. (2009), "Location based services using android (LBSOID)", IEEE International Conference on Internet Multimedia Services Architecture and Applications (IMSAA), IEEE, pp. 1-5.

Lee, S. and Cho, M. (2011), "Social media use in a mobile broadband environment. examination of determinants of twitter and facebook use", International Journal of Mobile Marketing, Vol. 6 No. 2, pp. 71-87.

Lee, T. and Jun, J. (2007), "The role of contextual marketing offer in mobile commerce acceptance: comparison between mobile commerce users and nonusers", International Journal of Mobile Communications, Vol. 5 No. 3, pp. 339-356.

Li, H., Daugherty, T. and Biocca, F. (2002), "Impact of 3-D advertising on product knowledge, brand attitude, and purchase intention: the mediating role of presence", Journal of Advertising, Vol. 31 No. 3, pp. 43-57.

Lombard, M. and Ditton, T. (1997), "At the heart of it all: the concept of presence", Journal of Computer (1985), "Gratifications research and media theory: four models or one", in Rosengren, KE, Wenner, LA and Palmgreen, P. (Eds), Media Gratification Research: Current Perspectives, Sage, Beverly Hills, CA, pp. 149-167.

Mou, W. and McNamara, TP (2002), "Intrinsic frames of reference in spatial memory", Journal of Experimental Psychology: Learning, Memory and Cognition, Vol. 28 No. 1, pp. 162-170.

Nelson, MR, Yaros, RA and Keum, H. (2006), "Examining the influence of telepresence on spectator and player processing of real and fictitious brands in a computer game", Journal of Advertising, Vol. 35 No. 4, pp. 87-99.

Nicovich, SG (2005), "The effect of involvement on ad judgment in a video game environment: the mediating role of presence", Journal of Interactive Advertising, Vol. 6 No. 1, pp. 29-39.

Pagani, M. and Malacarne, G. (2017), "Experiential engagement and active vs. passive behavior in mobile location-based social networks: the moderating role of privacy", Journal of Interactive Marketing, Vol. 37, pp. 133-148.

Podsakoff, PM, MacKenzie, SB, Lee, JY and Podsakoff, NP (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", Journal of Applied Psychology, Vol. 88 No. 5, pp. 879-903.

Quertime (2017), "20 extremely addicting GPS location-based mobile games", available at: www. quertime.com/article/20-extremely-addicting-gps-location- based-mobile-games/ (accessed 16 September 2017).

Ryan, RM and Deci, EL (2000), "Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being", American Psychologist, Vol. 55 No. 1, pp. 68-78.

Shafer, DM, Carbonara, CP and Popova, L. (2011), "Spatial presence and perceived reality as predictors of motion-based video game enjoyment", Presence: Teleoperators and Virtual Environments, Vol. 20 No. 6, pp. 591-619.

Statista (2017), "Mobile phone gaming penetration in the United States from 2011 to 2020", available at: www.statista.com/statistics/234649/percentage-of-us- population-that-play-mobile-games/ (accessed 16 September 2017).

Swanson, DL (1987), "Gratification seeking, media exposure, and audience interpretations: some directions for research", Journal of Broadcasting and Electronic Media, Vol. 31 No. 3,pp. 237-254.

Tsai, YT, Wang, SC, Yan, KQ and Chang, CM (2017), "Precise positioning of marketing and behavior intentions of location-based mobile commerce in the internet of things", Symmetry, Vol. 9 No. 8, pp. 139-155.

Tussyadiah, IP (2012), "A concept of location-based social network marketing", Journal of Travel & Tourism Marketing, Vol. 29 No. 3, pp. 205-220.

Wang, WJ, Li, XM, Jiao, PF, Xu, GQ, Yuan, N. and Yu, W. (2017), "Exploring intracity taxi mobility during the holidays for location-based marketing", Mobile Information Systems, Vol. 2017, pp. 1-10.

Wirth, W., Hartmann, T., Böcking, S., Vorderer, P., Klimmt, C., Schramm, H., Saari,

T. and Biocca, F. (2007), "A process model of the formation of spatial presence experiences", Media Psychology, Vol. 9 No. 3, pp. 493-525.

Wong, FY (2017), "Influence of Pokémon go on physical activity levels of university players: a cross Geographics, Vol. 16 No. 1, pp. 8-20.

Wu, L. (2016), "Understanding the impact of media engagement on the perceived value and acceptance of advertising within mobile social networks", Journal of Interactive Advertising, Vol. 16 No. 1, pp. 59-73.

Xu, H., Luo, XR, Carroll, JM and Rosson, MB (2011), "The personalization privacy paradox: an exploratory study of decision making process for location aware marketing", Decision Support Systems, Vol. 51 No. 1, pp. 42-52.

Yang, CC and Liu, D. (2017), "Motives matter: motives for playing Pokémon go and implications for well-being", Cyberpsychology, Behavior, and Social Networking, Vol. 20 No. 1, pp. 52-57.

Yim, MYC, Cicchirillo, VJ and Drumwright, ME (2012), "The impact of stereoscopic three 41 No. 2, pp. 113-128.

Zach, FJ and Tussyadiah, IP (2017), "To catch them all – the (un) intended consequences of Pokémon Go on mobility, consumption, and wellbeing", in Information and Communication Technologies in Tourism 2017, Springer, Cham, pp. 217-227.

Zhou, T. (2011), "The impact of privacy concern on user adoption of location-based services", Industrial Management & Data Systems, Vol. 111 No. 2, pp. 212- 226.